The Weatherization Assistant Users Manual for Administrative Features (Version 8)

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Foreword

The Weatherization Assistant is software for personal computers that was developed for use by local and state agencies of the Department of Energy's (DOE's) Weatherization Assistance Program. It assists states and agencies select energy efficiency measures that meet government criteria for cost-effectiveness that can be installed in homes of low-income families enrolled in the program.

The Weatherization Assistant is actually a package of individual measure selection programs covered by an umbrella of additional features, mostly optional, which further address common activities of a Program agency. The National Energy Audit Tool (NEAT) is designed specifically for single family site-built homes. The Manufactured Home Energy Audit (MHEA) is similarly designed for manufactured (or mobile) homes. Installation of the Weatherization Assistant Version 8, provides the user with both measure selection programs as well as the umbrella functions.

Although the previous version of the Weatherization Assistant included both the NEAT and MHEA measure selection tools, the umbrella functions were not introduced until this most recent version, Version 8. This manual addresses only these added features. Separate users manuals are available for each of the measure selection tools.

A few of the features now available in Version 8 include: expanded client data collection capabilities, user-generated surveys, an extensive client status tracking system, automatically generated work orders which can be modified to include as much detail as the user desires, an inventory system, tracking of funds by cost centers, digital photo storage, and a Geographic Information System (GIS) which maps clients' locations.

List of Abbreviations and Acronyms

AFUE	annual fuel utilization efficiency
AHAM	Association of Home Appliance Manufacturers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
Btu	British thermal unit
COP	coefficient of performance
csv	comma separated values (file format)
DOE	Department of Energy
GIS	Geographic Information System
GUI	graphical user interface
HDD	heating degree days
HSPF	heating seasonal performance factor
MB	Megabytes
MHEA	Manufactured Home Energy Audit
MMBtu	Million British thermal units
NEAT	National Energy Audit
NFRC	National Fenestration Rating Council
NOAA	National Oceanic and Atmospheric Administration
RAM	random access memory
SHGC	solar heat gain coefficient
SIR	savings-to-investment ratio
SP2	service pack 2 (Microsoft)
T&TA	training and technical assistance
UPW	uniform present worth

List of Abbreviations and Acronyms

Chapter 1

The following may be used as a tutorial assisting you in becoming acquainted with Version 8 of the Weatherization Assistant. As such, it would likely benefit you more if read while having access to the program so that you can actually view the forms being discussed.

Starting the Weatherization Assistant

After installation and the first time you start the Weatherization Assistant, an "Installation ID" form will be displayed. This form allows an optional entry identifying this specific installation of the program. This identification will be useful if your agency will have several installed copies of the Weatherization Assistant software and you plan to share data between them.

Following completion of this form, you may be notified that the program will connect to the databases used to store your data. This is only performed once at this initial startup, unless you later choose to connect to a different database of information.

You will then be briefly presented with a form displaying the version, date, and credits associated with this version of the Weatherization Assistant. The display will automatically disappear leaving you at the Weatherization Assistant Main Menu.

The Weatherization Assistant Main Menu

The Weatherization Assistant Main Menu will be your starting point each time you initiate the program. It displays buttons accessing the main categories of information necessary to use the program; for example, Agency, Clients, Site Built (NEAT), and Setup Library. At any time, the program identifies which of these main menu items you are accessing by repeatedly displaying horizontally the category name in the blue banner line at the top of the form you are working with; for example, "Agency – Agency – Agency..."

Entering Your Agency Information

To begin using the Weatherization Assistant, select the "Agency" button on the Main Menu, then replace "Your Agency Name" in the Agency Name field with the name of your agency and select the correct state in the State field. This is the minimum information recommended for identifying your agency. You may use the program with no further entries on this form. However, it is recommended that you browse through this Agency Information tab and associated tabs to acquaint yourself with the other information which might be useful for you to supply. The help feature (F1 key) will provide additional information related to the Agency Main Menu item.

Client Information

To begin your first audit, select the "Clients" tab from the Agency Main Menu item. Since this is your first use of the program, no clients will be displayed. Create one by selecting the "Create New Client Record for this Agency" button at the lower right corner of the form. You will be presented with the Client Information form. A default Client ID and your agency name will already be filled in for you on this form. You will likely want to change the Client ID to better describe the client for which this first audit will be performed, or enter a fictitious client if you are simply learning to use the program. This is the minimum information necessary to identify a client. (The Dwelling Type field becomes required if any field other than the Client ID and Alt. Client ID fields has been accessed.) However, as with the Agency form, it is recommended that you browse through this Client Information tab and associated tabs to acquaint yourself with the other information which might be useful for you to supply. Of possible interest would be using the Contacts tab to define a "Contact" for this client as a "Primary Applicant." This will allow you to identify this client in the future by the contact's name as well as the Client ID, if the Client ID was assigned something other than a person's name. Again, the F1 help key will provide you with information on this and the other tabs under this Client Main Menu item.

If you begin filling in any form and decide against continuing before all of the required information is entered, strike the "Esc" key twice in succession to return the form to its condition prior to your entries. This will allow you to go to another form. Otherwise, you will be asked to fill in the remaining required information on the form before proceeding.

It is important to remember that you will always have to enter at least the minimum client information for a client before proceeding to enter audit information on the home for the client.

The Audit

Under normal circumstances, describing the client may be as far as you wish to go at this time with this client if no audit has yet been performed on the client's home. You may exit the program at any time without loosing any information. If, however, you wish to continue by entering audit information, either because an audit has already been performed for the client (although you should have already set the program up for your locality before performing an audit for an actual client - see Setup below) or because you are just learning to use the program, select the "Audits" tab under this Client Main Menu item. If this is your first use of the program, no existing audits will be displayed. To create a blank audit for this client, select either the "Create New Site Built (NEAT) Audit" or "Create New Mobile Home (MHEA) Audit" buttons at the lower right of the form. You will be presented with the Audit Information form of the Audit Main Menu item for either National Energy Audit (NEAT) or the Manufactured Home Energy Audit (MHEA), depending on your selection. On the form, already filled in for you, will be a default Audit Name, the Client ID from which the audit was created, and your agency name.

There is considerable required information on this Audit Information form for both NEAT and MHEA – in fact all editable fields on the forms are required. So recall the statement above regarding the double "Esc" key sequence returning a form to its condition prior to your changes, allowing you to exit a form without filling in all of the required information (though your entries on the form to that point will be lost). The required entries on all information tabs under the audit need not be filled in to exit the Audit Main Menu item for a particular audit. Only those of the current form you are viewing. Required entries always have a lined boarder around the field. As with former versions of the Weatherization Assistant, most all fields with a down arrow to the right of the field must be filled in with one of the pre-set selections available from the list of items accessible by clicking on the down arrow (exceptions exist on the Water Heaters and Refrigerators forms under Baseloads). All data items on the tabs under the Audit Main Menu items (NEAT and MHEA) have item-specific help associated with them. Striking the F1 key while positioned at any data entry item will display help material specific to that data item.

See the separate NEAT and MHEA User's Manuals for more information on entering the audit information.

Audit Recommendations

Following your describing a home to the Audit portion of the Weatherization Assistant, the audit can be analyzed (run) to produce recommendations by selecting the "Run Audit" button visible in the upper right corner on any of the tabs under the Audit Main Menu items. Following completion of the analysis, the program will automatically display (though this may be changed in Preferences) the NEAT or MHEA Recommended Measures report, listing the recommendations from the audit. This report may be printed directly from the display or simply viewed. Once closed (or if never opened), this report can be recalled at any time from the Report block on the Audit Information tab of the Audit Main Menu item.

The recommendations of the audit are included in a second location, the Measures tab on the Audit Main Menu item. Unlike the Recommended Measures report described above, this listing has editable entries. If you wish to use some of Version 8's added optional features, it is from here that you are allowed to accept or reject each measure, assign it to a specific contractor, or charge its cost to any of your pre-defined cost centers. Contractors (Contacts) and Cost Centers are optional definitions you provide under the Agency Main Menu item.

Normal Use

If you have followed along with the above in the sense of a tutorial, you will have multiple forms opened in the Weatherization Assistant application: the Main Menu, an Agency form, a Client form, an Audit form, and possibly the Recommended Measures output report in a totally separate window, if that also has not yet been closed. Although the Weatherization Assistant will operate with multiple forms and windows open, there is danger if multiple forms of the same type (i.e., Client, Audit, etc.) become open at the same time. If you were to exit the main program at this point, the forms would be closed automatically preparatory to your next implementation of the program. The Recommended Measures Output report window needs to be closed separately. Alternately, you may access each form individually, normally in the reverse order in which they were opened, and close it using the standard "X" box in the upper right corner of the form, eventually taking you back to the Main Menu where the standard Weatherization Assistant Exit button exists.

(Make sure to use the form closure X box, not the application closure X box. The latter will always be outside the former.) Or, you may close only the Audit form, taking you back to the Client form where you may define your next client, and then perhaps the audit for this new client.

On subsequent use of the Weatherization Assistant, you will have little need to open the Agency Main Menu item. Instead, open the Client Main Menu item directly from the Main Menu and define a new client. The program will remember you as the agency and automatically assign the client to you. You may then either use the Audit tab under the Client Main Menu item to initiate an audit for that client (as described above), or close the Client Main Menu item and select the NEAT or MHEA Energy Audit button on the Main Menu and define the audit directly under the Audit Main Menu item, assigning it to the Client just defined. Just be sure that an audit is closed before beginning to define a new client and associated audit.

Setup

Before running an audit for an actual client, you must visit the Setup Library Main Menu item and customize the program to your agency. Upon selecting this menu option, you will be presented with the Setup Library Information form. If this is the first time you have visited Setup, the Library Name automatically entered will be "Setup Library ([Installation ID])," where the Installation ID is that ID you entered when first starting the Weatherization Assistant (see "Starting the Weatherization Assistant," above). If you did not enter an Installation ID, a time stamp will take its place in this library name. You should rename this library to make it easily identified by you and any others who might receive data from you. Your state may suggest that the name include an abbreviation of your agency to allow them to identify it. The Agency to which the library is assigned should already be the name you provided in first visiting the Agency Main Menu item (see "Entering Your Agency Information," above).

If this is not the library automatically presented, see if you can find it in the Setup Library find box in the lower left corner of the form. As shipped, this find box will display only setup libraries for the agency last visited on the Agency Main Menu item. So, if it does not display the desired library, exit Setup and go to the Agency Main Menu item and call up your agency, then re-visit the Setup Main Menu item and look for your agency’s Setup Library again in the find box.

The program’s recommendations are based on individual energy efficiency measures’ savings to investment ratios (SIRs). These SIRs strongly depend on the measure implementation costs and fuel prices in your area. Under the Library Measures tab of your Setup Library, enter estimated measure implementation costs for those measures that your agency performs by clicking on the Costs button to the right of each measure. DO NOT ZERO OUT ANY MEASURE COSTS, even if you do not plan to implement the measures. You may also choose which measures are to be considered for your program (normally decided upon with assistance from the State) by checking the "Active." check box for each such measure. The assignments of measures to a default contractor or default cost center are optional features in the program of use only if you plan to use the Weatherization Assistant to generate work orders.

Under the Fuel Costs tab, enter the fuel prices (often time averages) prevalent in your location. In case you have more than one fuel supplier or electric utility servicing your area, you may define as many sets of fuel prices as are necessary.

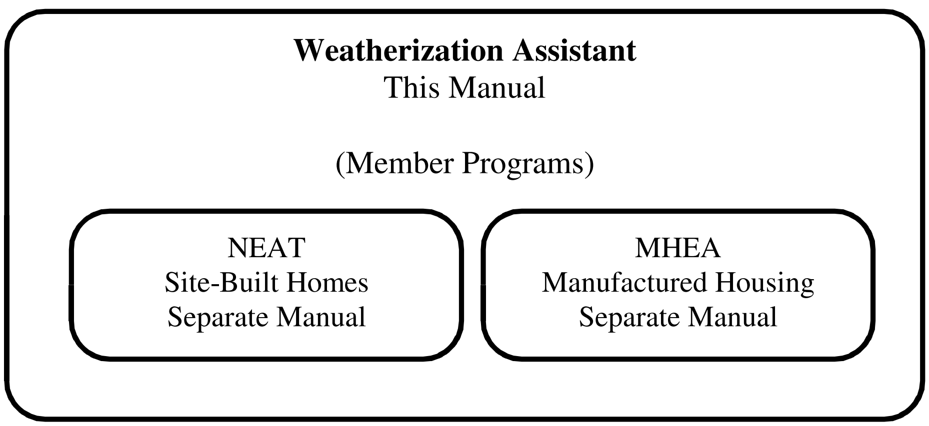
Samples

By selecting the "Sample Agency" using the Agency Record Navigation Block on the Agency Main Menu item, you may view samples of Client entries and associated Audits. Default Work Orders have also been created for each client. The "Sample Setup Library" contains some examples of User-Defined Measures and the "Sample Supply Library" contains an example inventory of items. The use of an inventory is an optional feature of the Weatherization Assistant used in conjunction with work orders. The feature allows you to track use of inventoried items as they are assigned to various work orders.

Chapter 2

The Weatherization Assistant is software for personal computers that was developed for use by local and state agencies of the Department of Energy's (DOE's) Weatherization Assistance Program. It assists states and agencies select energy efficiency measures that meet government criteria for cost-effectiveness that can be installed in homes of low-income families enrolled in the program.

The Weatherization Assistant is actually a package of individual measure selection programs covered by an umbrella of additional features, mostly optional, which further address common activities of a Program agency.



The National Energy Audit Tool (NEAT) is designed specifically for single family site-built homes, although it can also be used with some limitations for small multifamily residences. The Manufactured Home Energy Audit (MHEA) is similarly designed for manufactured (or mobile) homes. Installation of the Weatherization Assistant Version 8, described in Chapter 3 of this manual, *Installing and Starting the Weatherization Assistant*, provides you with both measure selection programs as well as the umbrella functions. This manual, however, addresses only the later. Separate manuals are available for the NEAT and MHEA measure selection programs.

2.1 Hardware Requirements

The analysis engines (NEAT and MHEA) are written in the programming language "C" with a user interface and data storage format using Microsoft's Access.

The two are linked by C++ and Visual Basic programs. However, the Weatherization Assistant requires no software associated with any of these languages or applications for normal use. The program needs only a Windows operating system (Win95, 98, NT4.0, Win2000, or XP), which normally comes with the purchase of a computer. NT4.0 and Win2000 must have at least the service pack 2 (SP2) upgrades, available through Microsoft, in order to insure proper operation of the program.

The Weatherization Assistant Version 8 runs on any IBM-compatible computer having at least 64 mega-bytes (MB) of free random-access memory (RAM). Installation requires at least 35 MB of available hard disk space. Your graphic card and monitor should be able to produce a display with a minimum resolution of 1024x768 pixels in order to allow windows to be seen without scrolling. All files necessary to run the program can be stored on a single CD, including weather files for over 200 cities in the continental United States and bordering provinces of Canada. Only files necessary for the optional mapping feature of the Weatherization Assistant are not available on CD. They must be downloaded for each U.S. state individually.

The Weatherization Assistant uses your existing Windows printer setup to both display and print results and reports. Thus, even though you may not have a printer physically attached to your computer, you must have an acceptable printer driver loaded and selected as default in order to display the results. Output produced by the program is stored in the audit database and displayed in rich-text format from within the program. In addition, the program provides a standard ASCII formatted file of the output for the most recent run, which is readable by any word processor or text editor and can be viewed in DOS.

Version 8 of the Weatherization Assistant utilizes a commercially produced database software, Microsoft Access, to store the information you provide and the results of running the program. Older versions of NEAT and MHEA used separate files to store the audit inputs and resulting reports associated with each dwelling. Now, all information for all homes is stored in a single file, the "mdb" database file. Within this file, information is stored in linked tables, each table composed of as many "records" as is required to store the information required. When you enter information on a new client by filling in data on a form, you are adding a new record to the client table. Information is retrieved simply by requesting to view different records in the database. Users of other software products based on Microsoft Access may already be familiar with the concept of tables, records, and forms.

With data stored in Access tables, users experienced in Access can retrieve the information and import it to other Access applications without having to re-enter data.

In addition, new to Version 8, the program will produce and read "comma separate value" (csv) files containing data, which provides an additional mechanism for data transfer between computer applications.

2.2 The Expanded Features of Version 8

The expanded features of Version 8 in the Weatherization Assistant were incorporated into the program in such a way as to allow the measure selection programs, NEAT and MHEA, to still be used almost as stand-alone programs, if users are not interested in using the other features. Separate buttons on the Main Menu of the program take a user directly to either NEAT or MHEA. The expanded features have also been added mostly independent of one another, allowing the user to pick and choose which he/she desires to use or to incorporate their use in a phased approach.

Some of the features added to Version 8 include expanded client data collection capabilities. Though optional, the added data will likely cover all information normally collected and stored, perhaps in paper form, for an agency's clients. In addition, user-generated surveys can be developed, with the responses from each individual client stored and retrieved in reports.

A relatively extensive client status tracking system has been incorporated, allowing an agency to track progress of a client's application, file, audit, as well as the work orders, inspection, and payments by the agency related to each client.

Work orders may be automatically generated by the execution of either NEAT or MHEA, or manually, for example, from a pre-defined priority list, or a combination of the two. The work orders may contain as much detail as the user desires and may utilize materials the user has entered in the program's optional inventory feature. Use of an item in a work order automatically subtracts the item from the inventory.

Implementation of measures may be assigned to any cost center (funding source) the user has defined. If desired, source funding balances will be automatically updated as work orders including measures funded by a particular source are completed.

Digital photos taken at any stage of the weatherization process or scans of additional documents can be stored with data for each client. Also, the new Geographic Information System (GIS) allows mapping of a single client's location or any group of clients at once. This could assist in scheduling efforts or in creating summary reports be geographic location.

These, and other features added, should benefit the agency in performing their most important task of assisting the nation's low-income families better afford their energy costs. The prospect also exists in formalizing the storage of all weatherization program data into state-wide or nationwide databases which could then be used in program evaluation or lead to better implementation processes.

Chapter 3

Version 8 of The Weatherization Assistant includes the two measure selection programs, NEAT for site-built homes, and MHEA for mobile homes, as well as an umbrella of optional features addressing other tasks performed by agency personnel as part of the weatherization process. The following instructions will install all of these tools onto your computer. They assume you have an IBM-compatible computer with the hardware requirements outlined in Section 2.1. Installation adds a new directory tree to your hard drive at a location you specify as well as several Windows components to your operating system's folder.

The Weatherization Assistant will execute on a variety of platforms, including Windows 95, 98, 2000, NT4.0, and XP. The following instructions will cover all platforms with only minor modifications. Windows 2000 and NT4.0 users must have at least those platforms' Service Pack 2 (SP2) installed. These updates to your operating system are available over Microsoft's web site.

3.1 Program Installation

The procedure used to install the Weatherization Assistant onto a computer uses the standard Windows process for the platform you are using. Close any applications currently open. If you are installing the program from a CD, place the CD in your CD ROM drive and insure that you know the drive letter assigned to the drive on your computer. If you are installing from a downloaded file, note the location of the file on your computer.

Installation is initiated by executing the file "waxxxx.exe," either from the CD or from the download location, where the "xxxx" represents the version number, for example "8276." This may be done in any of the ways your Windows installation provides. Most all Windows platforms have a My Computer icon with which to locate the installation executable. Once found, double click on the executable file to run it. Or, you may use Windows Explorer, or the Browse window under the Start/Run option. The Control Panel of Windows versions also has an "Add and Remove Programs" entry from which the file can be executed. Refer to your Windows manual or consult with your system administrator.

Note that some computers are configured to allow only certain users, normally a system administrator, to install software. If yours is such a computer, this user will have to be contacted in order to install the program. If you should attempt installation under such circumstances without proper authorization, you will receive messages indicating either the need for "administrative privileges" or that you do not have "write access" to certain locations on your computer.

The installation procedure will present you with the license agreement. Read the agreement and click your mouse on the "I Agree" button if you agree with its contents. Otherwise, click on Cancel to abort the installation process. Any time you choose to Cancel the installation, you will be asked to confirm this choice. If you choose to proceed, you will be presented with the "Welcome" screen giving you a further opportunity to either go to the "Next" screen or "Cancel" the process.

The release version number contains four digits (e.g., "8276"). Any installation having a version number which differs in any of the first three digits from a previously installed version is considered a new installation, i.e., a major version change. However, if the first three digits are the same as an existing version on your machine, the installation is considered an "upgrade." Thus, if you were installing a version 8278 and already had installed version 8276, the installation would be an upgrade. Under such conditions, the installation procedure will present you with the "Upgrade or Install" form. The form gives details on the former installation as well as the version you are now asking to have installed. It then indicates, "To upgrade your existing version, accept the default installation path name on the next dialog. To perform a new installation, choose a different installation path name on the next dialog." Normally, if you receive this message, you will be upgrading your software, unless you have specific reasons for wanting more than one installation of the same major version. An upgrade will not affect any of your settings or data already entered. It will only affect the operation of the program. A new installation will provide you with a completely separate program with a new basically empty data set and default settings. The new installation, however, will not affect your previous installation. In this instance, following this new installation, there will be two icons for this version of the program on your computer, each taking you to the different installations. This form is only informational, but still gives you an opportunity to continue with installation by choosing "OK" or exit the process by selecting "Cancel."

The next screen in the installation process allows you to select the location on your computer to which the program files will be copied, the "Destination Directory." If you have not previously installed this major version, the default location will be "c:\Program Files\Weatherization Assistant xxx," where "xxx" stands for the major version number being installed. If you have installed this major version before, the location displayed will be where ever you chose to have the program installed on the previous installation. This is why the instruction was given on the prior form (discussed above) to "accept the default installation path name" in order to "upgrade." If this default location is satisfactory, choose Next. Otherwise click on the "Browse" button and select the preferred location from the drives (bottom) and folders (middle) sub-windows presented. The destination field at the top of this window will change in response to your selections. You may also modify the entry in this destination field directly to make your selection. If your entry does not correspond to an existing location, you will later be asked if you wish to have the location created. If it corresponds to an existing installation, you will be ask to confirm installation into this existing directory. Click on OK to accept your location specification or Cancel if you wish to return to using the default or previously accepted location. When you are satisfied with the selection as displayed in the box containing the Browse button (which will be the default location if you have not selected to Browse to a new location), click on the Next button to continue. Note that this screen will also display the "Free Disk Space" available on the drive selected as well as the expected remaining "Free Disk Space After Installation."

The next screen summarizes the version being installed, the date of installation, and your choice of the destination directory. If the summary is correct, choose Next to continue the installation. Otherwise, choose Back to return to the previous screen to modify your selections or Cancel to exit the installation process without having installed the program. Any time you choose to Cancel the installation, you will be asked to confirm this choice.

If your selection of destination directory does not exist on your computer, a screen will appear notifying you of this situation. You must click the OK button to confirm receipt of this notification. You will next see a window with a bar which meters the progress of installing the necessary files. Concluding this process, you will be presented with the "Installation Completed" notice from which you are given the choice of finishing the installation with or without viewing the "User Notes." If you choose to view these notes, they will be presented in a Notepad window. It may be helpful to select the File, Print menu item in this window to print the notes for future reference. It may contain notes available at the time of release of the program but not contained in this manual. After installation, this file will be available from the Weatherization Assistant destination directory you have selected (e.g., c:\Program Files\Weatherization Assistant xxx). Exit the notes when you have finished by selecting File/Exit or clicking on the Windows close window box [X] in the note pad window. The installation is now complete. Close any other windows associated with the install procedure and return to your normal desktop.

The above described installation process will automatically place the Weatherization Assistant icon on your desktop, containing the version number in its name.

The installation process will copy a file into the Weatherization Assistant destination directory you chose above. This file will eventually contain all data that you input to the program. The name of the file will reflect the version of the Weatherization Assistant with which it is to be used, (e.g., "wa827.mdb"). Though not necessary, it is recommended that your system administrator make a copy of this file before you begin using the program. See the introduction to Chapter 12, *Data Link - Database Linking, Importing and Exporting Data*, for additional details.

3.2 Network Installation

One advantage of using a standard database environment is that standard multi-user features are available. If you are familiar with Microsoft Access, you may be aware of the strategy where the "front-end" interface (the forms and reports) is separate from the "backend" database (just data tables). The Weatherization Assistant uses this design strategy to allow it to be operated on networks. The front-end, located in the "wa.mde" file, can be installed on each client’s computer while the backend, located by default in the "wannn.mdb" file (where nnn is the version number), can be installed in a shared folder on a network.

The front-end can connect (or link) to any backend file located anywhere on the client computer's file system including shared network drives. Below are some installation instructions that might be suitable for your situation:

CASE 1) Multiple users on different computers on a local area network need to share data

(1) Install the Weatherization Assistant using the installation executable file on each of the client computers (see Section 3.1 above).

(2) Install the Weatherization Assistant using the installation executable file on the server computer OR copy the "wannn.mdb" file from one of the client computers to a shared folder on the server. Make sure that shared folder has no read or write security restrictions.

(3) Run the Weatherization Assistant on each client computer and use the Data Link feature (see Section 12.1, *Currently Linked Backend Data File*) on the Main Menu to link each client computer to the shared "mdb" file on the server.

(4) (Optional) You may want to erase the "mdb" files on each of the client computers to avoid any confusion.

CASE 2) Multiple users, some with portable computers used in the field for data collection

(1) Follow all the steps for CASE #1 above.

(2) Install the Weatherization Assistant using the installation executable on each portable computer. Do NOT link to the "mdb" file on the server. Each portable then has an independent "mdb"backend file. Auditors with portable computers should use the Import/Export feature under the Data Link Main Menu item to move jobs manually to/from their computer. (See Section 12.3, *Data Transfer – Import/Export via Database Files*)

Client records created on different computers linked to a shared backend database file will not conflict. However, if several client computers linked to the same backend database file attempt to access the same client record, conflicts could arise. Microsoft Access handles these conflicts with "record locking." The first person to open a record ‘wins’, and the second person is locked out of editing (the computer just beeps whenever attempts to change a locked field are made) until the first person is finished editing the record. So, if you are sharing a backend, there is a very important rule to follow: *Always finish edits to unlock the record for other users. Never leave edits in process for extended periods* since the record (and potentially some adjacent records) will remain locked for other users. To finish your edits, just change tabs, or back out of the form you are working on. This writes the record to the backend database and unlocks the record for other users. A limitation of Access is that it may lock more than just the one record you are editing (it may include some adjacent records as well). Given this limitation of Access record locking, the rule for sharing backend database files is that much more important.

If all users install the Weatherization Assistant software and do NOT link to a shared database, then there will be independent backend database files, each with their own set of client records and its own Agency record on each machine.

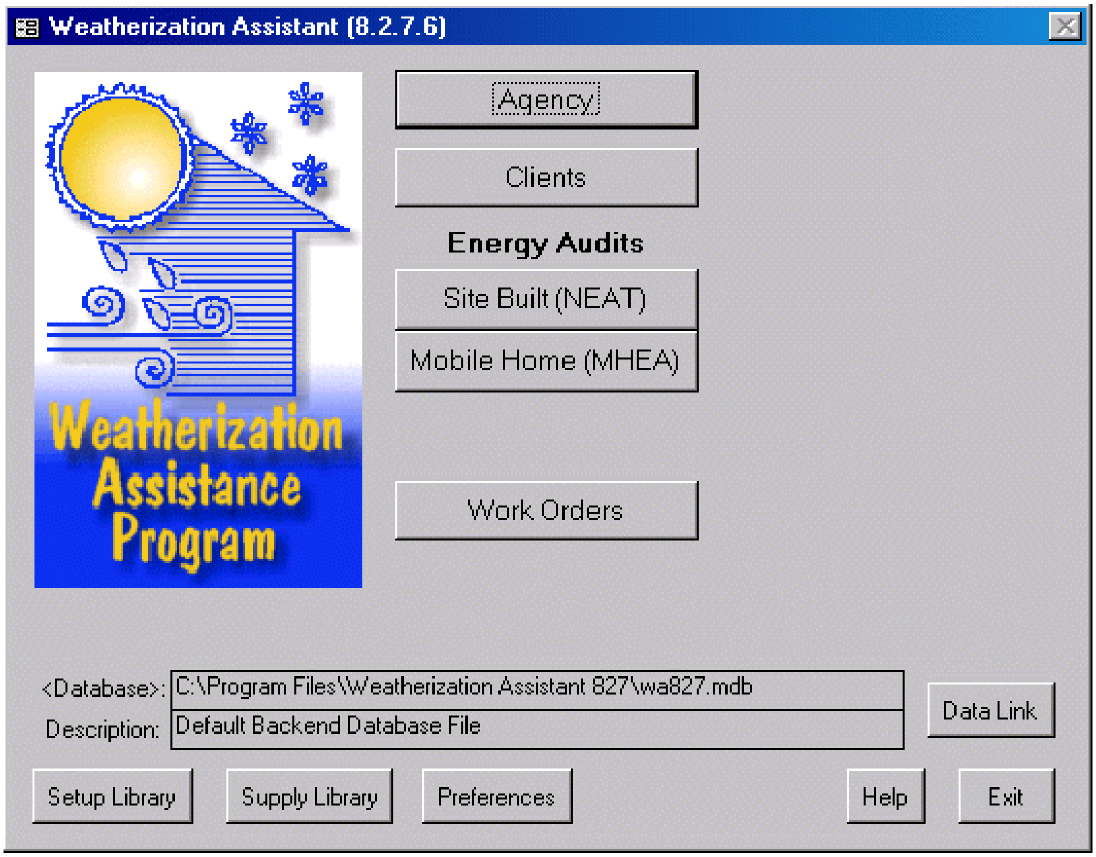
3.3 Starting the Weatherization Assistant

Click on the Weatherization Assistant icon displayed on your desktop to start the program. Any other means of attempting to open the program will likely fail. The icon has specific instructions in opening the Weatherization Assistant needed for successful operation.

The first time you start the Weatherization Assistant, an "Installation ID" form will be displayed. This form allows an optional entry identifying this specific installation of the program. This identification will be useful if your agency will have several installed copies of the Weatherization Assistant software and you plan to share data between them. The ID is used in the default name given to a new Setup or Supply Library (see Section 9.1, *Setup Library Information* and 10.1, *General Information (Supplies)*). If left blank, these default naming conventions will use the record's time of creation instead.

If during installation you chose to install the Weatherization Assistant into a location on your computer other than the default location (c:/Program Files/ Weatherization Assistant xxx), the first time you open the program, it will tell you that it must connect to the back-end database. Click on the OK to continue. You will then be asked to confirm that the linking was successful. A similar process will be performed for a reporting module.

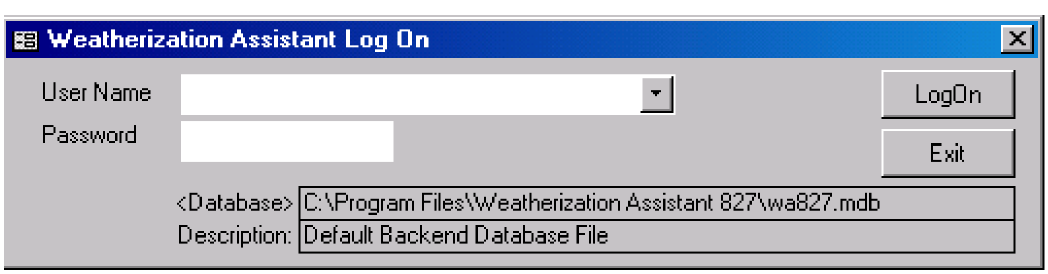
Subsequent initiations of the Weatherization Assistant will take you immediately to an introductory banner indicating that the Weatherization Assistant has been developed for the Department of Energy and giving a version number and release date. This screen will automatically disappear once the program has fully loaded and will be followed by the Main Menu for the Weatherization Assistant. It is from this form that you will access all of the functions included in the program. Present on the form are buttons taking you to all of the major functions: your Agency description, Client data, the Site Built (NEAT) and Mobile Home (MHEA) audits, the development of detailed Work Orders, as well as tailoring the program to your agency via the Setup Library, permitting you to enter your inventory in the Supply Library, and alter Preferences for program operation. The Data Link button takes you to forms which allow you to link to different databases and share information with other program installations. The remaining chapters of this manual each discuss one of these major functions.



The Weatherization Assistant Main Menu

3.4 The User Logon Form

If you have instituted use of the User Logon feature of the program (see "User logons with user names and passwords from the Agency/ Contacts/ Passwords tab" in Section 11.4, *Features*), each time you initiate the program you will be presented with the Weatherization Assistant Log On form.



This feature requires users of the program to be registered and have passwords assigned before they can access the program. These User Names and Passwords are designated in the Agency Contacts tab of the program (see "Change LogOn Group and Password" in Section 5.2, *Contacts (Agency)*). The user name is an abbreviated (possibly initials) designation for each user. A list of currently registered users is displayed from the User Name combo box list on the form. Also displayed with each user in the list are the user's full name, group (indicating privileges), agency, and state (of agency). Choose a user from the list and enter the password assigned to that user as assigned in the above reference. Only after successfully logging on will the Main Menu become available.

Chapter 4

Versions 7 and 8 of the Weatherization Assistant use the graphic user interface (GUI) provided by Microsoft's Access 97. The Weatherization Assistant uses all the standard Access forms, controls, and the concept of records contained in this software. Thus, if you are familiar with Access, you are probably already proficient with the mechanics of entering data into the program. Otherwise, the following chapter will supply you with the basics needed for this task.

4.1 Record Navigation

Data entry in the Weatherization Assistant uses forms, each form containing information related to a specific topic, such as Client Information or an Agency Contact. The term "record" refers to the information contained on a specific form. Often the terms "record" and "form" may be used interchangeably, keeping this somewhat subtle difference in definition in mind.

On a given form, there are several different ways to navigate to the record you are interested in. Described below are some of the most common techniques you can use.

The Audit Record Navigation Block

Use the controls in the Record Navigation Block located in the lower left corner of each form to find records of the type indicated in the upper left border of the block. If applicable, the find combo boxes included in the block may include listings of these records arranged in alphanumeric order "by" various identifying fields. For example, to find Audit records, you may search by the Audit Name, Client Name, etc. Clicking your mouse on any item listed in the combo box list will position you to that record.

Use the navigation buttons at the bottom of the Record Navigation Block to move to a particular record number, the first or last record, or , respectively, or the next or previous record, or , respectively. Records are stored in alphabetical order by one of the identifying fields (the Audit Name for example).

Use the new record button, ,in the navigation block to create a new blank record, or the "Copy" button to copy the currently accessed record.

The "Del" button deletes the currently accessed record.

<Client ID>	Client Name	Alt. Client ID	Last Edited
House with crawl space	Crawlspace, Joe		7/13/2005
House with finished attic	Tallhouse, Ann		7/13/2005
One-story ranch	RanchOwner, Bob		7/13/2005
Single wide mobile home	Doe, John		7/6/2005

The Client tab under the Agency Main Menu Item

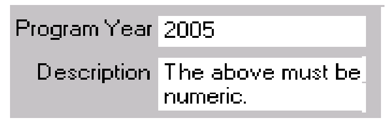
For Clients, Audits, and Work Orders, you can also locate a desired record by accessing the Navigation Data Sheet View for that type of record (see Section 4.8, *Data Sheet and Form Views of Records*). This is done by selecting the Clients, Audits, Work Orders tab under either the Agency or Client Main Menu items. These tabs are meant only for navigation and to provide a relatively condensed view of all records of the type selected. Information under the tabs cannot be altered. You are reminded of this by the forms having a light blue border.

This data sheet view displays the available records in a spread sheet format. Double click on the record name you desire, and the program will take you there. This procedure works for any record type whose name in the header for that column is in angle brackets (< >).

If you have enabled the Bookmarks feature under Preferences (see "Bookmarks" in Section 11.4, *Features*), then whenever you select any of the Main Menu items, the program will automatically return you to the same record you were last working on when you exited that record type. This applies to Agency, Client, Audit, Work Order, Setup Library, and Supply Library Main Menu items.

Data for a record are loaded into your computer's temporary memory (not on disk) when you start filling in data on a blank form or modify data on an existing form. When you exit that form or try to navigate to a new record, the record you were working on gets saved to the database file in your computer's permanent memory, the "disk." There are a number of range and completeness checks as well as relational integrity checks performed by Access when the record is being saved to disk. This is why you can get warning and error messages when you try to leave a form or navigate to a new record.

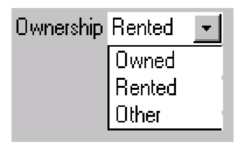
4.2 Entering Data into the Weatherization Assistant



Two fields, one requiring a numeric entry

Forms contain three types of controls which accept input from the user: the field, the combo box, and the check box.

Fields allow you to type in entries from the keyboard and are not restricted to any pre-selected set of responses. However, they often must satisfy certain conditions to be acceptable. For example, a field expecting a number cannot contain an alphabetic character.



A combo-box with item list visible

Combo-boxes look like fields except that they have a square with a downward pointing arrow to the right of the field. Entries into these controls may be restricted to one of several prescribed responses. The selection may be made in several ways:

- Left click the mouse on the box with the arrow, then click on the desired response from the combo box list which will appear.

- Having navigated to the control, press the [Alt-Down Arrow] key combination to display the combo box list, use the [Up Arrow] and [Down Arrow] keys to highlight the desired response, then press [Enter] or [Tab] to make the selection.

- Or, whenever the entire field is selected (in reverse video), you may begin to type in one of the acceptable responses. As soon as the characters you type uniquely match one of the acceptable responses, the remainder of the field will be automatically filled in.

Most combo boxes are restricted to the list of predefined entries and you must make a selection from that list. The exceptions are the combo boxes for the Existing Refrigerator and Water Heater Manufacturer and Model under the Audit Baseloads tab as well as the combo boxes designating the location of zonal pressure and pressure pan readings under the Ducts and Infiltration tab of the audits. These combo boxes do not restrict the entry to an item in the list. In these cases, the combo box can behave as a regular text entry field. However, you will obtain the data from the data base of refrigerators and water heaters only if your entry matches one that is in the data base.

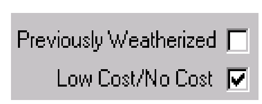
A green shaded combo box indicates that the selection is being made from a library of entries, normally from your Supply Library (see Chapter 10, *Supplies*). In such circumstances, your selection includes not only what will appear in the combo box, but most often additional data associated with the selection.

In all of the cases above, navigating to a new control completes the selection. You will not be allowed to exit a combo-box control unless an acceptable response has been provided, or you press the [Esc] key to back out of your changes.

When the characters in a field or combo-box are highlighted (displayed in reverse video), the control is said to be in ‘overwrite’ mode. Any characters that are highlighted in a control will be replaced by keystrokes you enter. Any number of characters can be highlighted by left clicking the mouse while dragging it across those you wish highlighted. To switch to ‘insert’ mode, position the mouse pointer to a location within the field and left click. This will allow you to insert characters between existing ones.

While in insert mode within a field, the [Left Arrow], [Right Arrow], [Home], [End], [Backspace], and [Delete] keys retain their traditional functions of positioning the cursor within the field. Single character highlighting (replacing only individual characters) can be obtained by pressing the [Insert] key on your keyboard.

The check box is a small white box in which a check mark may or may not be visible. If a check is visible, it implies a yes response to the question associated with the box. You may change the response in a check box either by left clicking the mouse on the box or pressing the [Space] key whenever the box has been selected (indicated by a dotted rectangle around the control name).



Two check-boxes, the bottom one with a “Yes” response

4.3 Navigating Between Controls

You can use either the mouse or keyboard to navigate around the controls on forms. Typically you will use a mixture of the methods. The mouse is most intuitive for navigating between forms, menus, and tabs, but you may find the keyboard [Tab] or other keys to be quite handy as well, especially during lots of data entry where constantly moving between the mouse and keyboard can be tedious. Experiment and see what methods are most comfortable for you.

1. You can point and click the left mouse button on the field or combo box you want to edit or the check box you want to select. Accessing a field or combo box in this manner will automatically put you into "insert" mode within the control, a vertical line indicating where the next keyboard character will be inserted.

2. You can use the [Tab] and [Shift-Tab] keys to cycle through the controls in forward or reverse order, respectively. These keys will place you in overwrite mode within a field or combo-box, highlighting its entire contents. In most cases, the [Enter] key will act in the same manner as the [Tab] key. One exception is when positioned in a comment field. Here, the [Enter] key is reserved for moving the cursor to a new line within the comment.

3. The [Up Arrow] and [Down Arrow] keys will work the same as the [Shift-Tab] and [Tab] keys unless you are in the insert mode within a field, during which the keys will be inoperative.

4.4 The Escape Key

The Esc key is a useful way to back out of your changes. It is similar to an "Undo" command. If you have made changes to a field but have not yet left the field, pressing the [Esc] key restores the value that was in the field prior to your change. Two consecutive [Esc] keys (or only one [Esc] if you are not in a field) will back out of all changes you have made to all the controls on a form since entering it. Once leaving a form and navigating to another, the changes in the former are saved and cannot be reversed. Thus, if you have doubts whether many changes you will make to a record are desired, you might consider making a copy of the record prior to initiating the changes.

4.5 Required Versus Optional Fields

Required fields have a single solid border. If you try to exit a form with a required field blank, you will be reminded to complete all fields and the cursor will be positioned to the first missing field. If you decide NOT to save the record, you can use the [Esc] key to cancel your changes.

Fields without the solid line border are not necessary for the program to execute or to allow saving the information on the form. However, the data may be necessary for clarity, record keeping requirements, or simply identification purposes.

4.6 Field Defaults

Although not as numerous outside the Audit portions of the program, most numeric fields have a user adjustable default value which can be set in Preferences. This field default value is displayed in the lower left portion of the screen in the status bar when you enter a field. If you leave a required field by using the Enter or Tab keys without having supplied a value, the default value will be automatically applied.

You can edit the field default values on the Range Check and Default Value tab on the Preferences main menu form (see Section 11.2, *Range Check and Default Values*).

4.7 Field Range Checking

Numeric fields have range checks applied as soon as you exit the field. There are two ranges that are checked. The Acceptable range determines which number values will be acceptable to the analysis engine. All numeric entries must fall within the acceptable range. When you enter a number outside the field's acceptable range, you get an error message and are forced to change the data in that field. Remember that you can use the [ESC] key to back out of field and record changes.

The Reasonable range can be overridden or changed by the user. The minimum and maximum values are displayed in the status bar in the lower left corner of the screen when you enter the field. When you enter a value outside the reasonable range, you get a warning message that you can override. Be sure to check the accuracy of the value you entered if you choose to override. Use the Range Check and Default Values tab on the Preferences main menu form to alter reasonable ranges for individual fields (see Section 11.2, *Range Check and Default Values*).

4.8 Data Sheet and Form Views of Records

One of the useful features of the Microsoft Access User Interface is the ability to display different views of your records. For many of the forms, you can select the view that best suits your needs. Though more common in the energy audit portions of the program (see specific users' manuals for NEAT and MHEA), these alternate views also exist in the umbrella functions of Agency, Client, Work Order, Setup Library and Supply Library. There are three basic views supported. You can edit the data in two of the three views.

- Standard Form View: The Form View is the most common view, allowing you to see and edit all of the information for a particular record. The controls on the form may be arranged or grouped in ways which will contribute to your understanding of the information requested. Most of the forms allow this view. In those instances when a form has sub-forms, it is normally only in this view that all of the sub-form information can also be viewed.

- Navigation Data Sheet View: This view displays a listing of all records of a particular type in a spread sheet format. Data in these displays cannot be altered. The form is used primarily to provide a summary of records of a particular type and to navigate to the record you choose. Forms of this type are accessed from tabs on the Agency and Client Main Menu items. (See also relevant discussion under Section 4.1, *Record Navigation*.) The forms are distinguished from the Editable Data Sheet View forms by a light blue border around the outside of the form. They also do not have Standard Form View equivalents.

- Editable Data Sheet View: In the Editable Data Sheet View, ALL of the records of a given type are displayed in a spread sheet format. All entries for a given field of data from all records of a given type are in the same column in the spread sheet. In the Editable Data Sheet View, you can see all records, but typically, the number of fields is too wide to fit on one screen, so you must scroll horizontally to view all of the available fields. However, even with scrolling, in some instances, this display may not allow access to all the fields for a given record type. You should view records in both the Standard Form and Editable Data Sheet Views until you become familiar with the contents of each record type before using the Editable Datasheet View exclusively.

Most record types can be viewed in the Standard Form View, except those using the Navigation Data Sheet View. The Form View is the default view when first using the program.

The Navigation Data Sheet View is displayed under the Clients, Audits, Work Orders, and Libraries tabs in the Agency Main Menu item and the Audits and Work Orders tabs of the Client Main Menu item.

For other forms (and some sub-forms) the Editable Data Sheet View is available. These alternate views are available for the Contacts and Cost Centers tabs of the Agency Main Menu item, the Contacts tab for the Clients Main Menu item, and the Measures tab under the Work Orders Main Menu item. For information on the use of this alternate view in the Audit Main Menu items, see the users' manual for the audit of interest, NEAT or MHEA.

For these forms, it is often helpful to temporarily switch from Form View to Data Sheet View to see all of your records for a given type. To switch from Form View to Data Sheet View, right click anywhere on the form. A rectangular "Subform Datasheet" pop-up window will appear. Left click on the rectangular window and the view will change to the Data Sheet View.

To change back to form view, position your cursor on the record you are interested in seeing in form view, then right click your mouse. The same "Subform Datasheet" window will appear. Left click on the rectangular window and you will be taken to the Form View for that particular record.

Some additional features of the Data Sheet View may prove to be helpful. The Data Sheet View allows you to easily change all the entries in a given control. For example, if you wished to change the Cost Center assigned to all of the measures of a given work order, place the Measures tab under Work Orders into the Data Sheet View, locate the Cost Center column, then simply use the down arrow key to travel down the column, typing the first letter of the desired cost center (provided you do not have more than one cost center beginning with the letter) in each field, allowing the automatic fill feature of the combo-box control to complete the entry. Or, instead of entering the first letter of the cost center, insure the entry is correct in the first record, then in subsequent records, use the [Ctl-‘] (control-apostrophe) key combination that copies the contents of the same field from the previous record, which, in the Data Sheet View, is the field immediately above.)

The Data Sheet View is also handy for sorting the list of records shown. To sort, select the column of data by which you wish to sort by clicking your mouse on the title header for that data type. The entire column should then be displayed in reverse video. Then select either the "A-Z" or "Z-A" buttons on the main application tool bar at the top of the application's window. Selecting multiple adjacent columns in the data sheet (clicking and dragging in the column header) allows the sorting to operate on multiple key fields (in order of the position of the selected columns, left to right). The ordering of columns can be changed by highlighting a column(s) then clicking and dragging the column to a new position. Several of the left most columns cannot be re-ordered since they are considered as identifying information for the records. Column widths can be adjusted by dragging the column header borders. All column width and position settings affect only the current Data Sheet View. When you close the form, the original column widths and order will be restored.

You may also "filter" the records when displayed in Data Sheet View. Filtering forces the display of only those records which have a specified value for a given data item. For example, if one of the fields displayed was the city in which the clients dwelt, you could choose to display only records for clients who lived in one specified city. To do so, click your mouse on any city entry of the particular city you are interested in, then click on the filter button at the top of the window, . Your display will then include only those clients from the city selected. Be careful when using filtering. If you forget that your display of records is filtered, you may wonder what happened to some records you would otherwise expect to see in the display. To cancel filtering, select the remove filter button,  .

4.9 Copying and Pasting Data

Data records are normally copied using the Copy button in the Record Navigation Blocks (see Section 4.1, *Record Navigation*). When this technique is used to create a copy of a record, you will be placed immediately into the Form View for the new record. Most often, records have a data field that must be unique amongst all of the records of the specific type, i.e. Agency, Client, etc. Whenever the Copy button is used to copy such a record, your cursor will be positioned at the field which must be unique, with the field in reverse video, indicating the expectation that you will be entering a new unique value.

This mode of copying records has one significant advantage. Even though the program expects you to enter new values for the data items that must be unique in each record, this copy process will provide you with default unique entries for these data items. Thus, if you wished to create three copies of a record, you could do so by selecting the Copy button in the Record Navigation Block three times in succession.

Three copies would be quickly made. You may then modify the records in any manner you wish, most likely changing the default unique entries supplied.

The process of copying a record when in the Editable Data Sheet View is different. In this view, you must first select the record you wish to copy. To select a record, press the record selection box on the left of the record you wish to copy. The entire row of data will then be displayed in reverse video, indicating its selection. Copy the information in this record to a temporary location (referred to as the "clipboard" in most computer applications) by either (1) entering the [Ctrl-C] key combination, (2) selecting the Edit / Copy menu items from the menu bar at the top of the application window, or (3) selecting the Copy button (displayed as two small overlapping sheets of paper) from the toolbar, also at the top of the application.

The record data copied to the clipboard must next be "pasted" into a blank record. To do so, select the blank record by pressing the record selection box with an asterisk in it. This will place the entire blank data row into reverse video. Paste the data by then (1) entering the [Ctrl-V] key combination, (2) selecting the Edit / Paste menu items from the menu bar, or (3) selecting the Paste button (displayed as a clipboard with a small sheet of paper) from the toolbar.

This method of copying records does not provide you with default unique entries for those fields which must be unique. Therefore, immediately after pasting the new record of data, you must provide the new unique entry yourself before proceeding.

Data in the Data Sheet View, or any similar tabular format, in the Weatherization Assistant can be copied, then pasted, either into an equivalent data range within the program or into another application. An example of this is seen in copying the fuel prices from one library to another. To do this, go into the Fuel Costs tab of the Setup Library you wish to take the fuel costs from, click your mouse on the Unit Cost column header. The entire column will become displayed in reverse video. Use one of the techniques described above to copy this data to the clipboard. Then, go to the Fuel Costs tab in the Setup Library into which you want the costs inserted. Select the Unit Costs column as before and use one of the techniques for pasting data, also described above. The fuel costs will be replaced with those you copied. Care must be taken to always copy and paste the same amount and type of data.

Since the interface is Microsoft Access, data transfer between it and another Windows application is also possible. An example of this might be used to print out the entire material cost table from a Setup Library. This is particularly easy if you have Microsoft’s spread sheet application, Excel, since it and Access are most compatible. Go to the Library Measures tab in the Setup Library from which you wish to print the costs. Select the "All Library Measure Costs" button in the lower right of this form. The entire material cost table will then appear in spread sheet format. Select the columns you wish to be printed (likely beginning with the Description and ending in the Unit$ columns) and copy the data into the clipboard. Open the Excel application and position your cursor in the cell where you want the upper left corner of the data to be located. A single paste instruction will paste the entire copied data into the spread sheet. You may need to adjust column widths to properly display the data, following which you can print the data from Excel.

A single field of data may also be copied and pasted, but only from one field to another of the exact same type. To select a field, click and drag the mouse over the contents of the field or [Tab] to the field. Either way, the contents of the field will become highlighted and selected. If the field has only one word in it, you can simply double click on the field to highlight and select it. Then use the copy and paste techniques described above to complete the process.

You can also use the [Ctrl-‘] (control-apostrophe) key combination when you are in a field to copy the contents of the same field from the previous record. This is particularly useful in the Data Sheet View when you just want to make a copy of the field directly above the current field in the same data sheet column.

4.10 Deleting Data

Once you have become familiar with all the techniques of selecting data described in the previous section, Section 4.9, *Copying and Pasting Data*, deleting data becomes relatively simple. Select the data you wish to delete, then either (1) press the [Delete] key on your keyboard, (2) select the Edit / Cut menu items from the menu bar, or (3) select the Cut button (displayed as a pair of scissors) from the toolbar. Any deletion of data from a combo-box must be replaced by another selection available from the combo box list. An example of deleting data from a field would be to delete a lengthy comment. Position your cursor at the beginning of the comment, then drag the mouse with the left button depressed across all the text to be deleted. Release the mouse button. The text will be displayed in reverse video. Then delete the text selected using one of the three methods described above.

To delete an entire record while in form view, use the "Del" button in the Record Navigation Block. This will delete the entire record currently accessed and of the type indicated by the navigation block. Caution: if you delete a record, you automatically delete all of the records which fall under it. For example, deleting a Client record deletes all Audits, Work Orders, and Reports associated with that

Client. Access will prompt you to make sure you really intend to delete the record. A special case occurs in deleting Setup or Supply Libraries. The program will not allow you to delete any library that is referenced by any agency, client, or work order. You would first have to reassign any of these references to another library before successfully deleting it.

To delete a record while in the Data Sheet View, first press the record selection box on the left of the record you wish to delete. The entire row of data will be displayed in reverse video, indicating its selection. Then use one of the three techniques described above to delete the data.

You can use the Data Sheet View to delete multiple records. Use the sorting features of this view to make those records you wish to delete appear together. Select multiple records by moving the cursor to the record selectors on the left side of the datasheet. The cursor will change to a right arrow. Then click and drag the mouse across the record selectors until the records you want to delete are all highlighted. Now press the [Delete] key, or one of the other methods of indicating deletion described above. The program will ask you if you are sure you want to delete the number of records selected.

4.11 Entry Errors

Following an entry or when you have selected the run button, the database may detect an error in the input. These errors may take on several forms. For combo-boxes, the most common is "The text you entered isn't an item in the list," indicating that you did not select one of the pre-designated items from the combo box list. Another possible entry error message is "The value you entered isn't valid for this field." This would most likely occur if a numeric entry was expected and you, instead, had an alphabetic character in the entry.

Occasionally even though the entire error message may not be completely understood, it will contain a reference to a "table" followed by the program's name for the entry in question. This name will lie in single quotes and begin with "tbl" followed by a name which can be recognized as a specific entry. For example, .tblAgency' refers to the Agency input field on the General Information form. In such instances, locate the entry and examine its contents for conformity with the requirements given in this manual.

4.12 Getting Help

You can get help by pressing the [F1] key anywhere in the program. If you press [F1] having selected a specific data item (field, combo-box, or, check box), you will see help material specific to that item. If help material for that specific data item is not available, the program will display help material for a more general topic, such as the Client Main Menu item tabs.

The title of the help material is always shown at the top left of the help screen. Tabs are also available which allow you to "Print" the material in the displayed help topic and, if you have searched multiple topics, go "Back" to previous topics.

Every help screen also contains a "Contents" tab at the upper left corner. To view a listing of all topics available in Help, click on the Contents tab. From here, you can choose topics by browsing through the expandable Contents tree (double clicking on a topic in the tree will reveal any sub-topics associated with it) or use the Find feature to search for a particular topic. Type a word in the field supplied and the program will search for all occurrences of that word in the help material.

Hypertext items are the highlighted help text you see in a different color. If you move the mouse cursor to the highlighted word(s) and press the left mouse key, you will see more information on that topic or word.

You can leave the help form and return to the main program at any time by pressing the [Esc] key, clicking on the close button [X] in the upper right corner, or choosing File, Exit on the help menu bar.

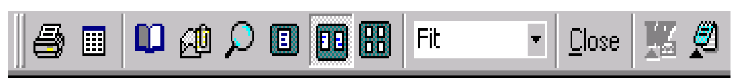
4.13 The Report Block

The Report Block from the Client Information Form

The Report Block appears in the lower right corner on the Information tabs of most of the Main Menu items: Agency, Clients, Energy Audits (NEAT and MHEA), and Work Orders. It would also appear on the Information tabs for the Setup Library and Supply Library if reports were defined for these program segments. As of the first release of Version 8 of the Weatherization Assistance, reports for these two Main Menu items would have to be defined by the user since none exist as standard reports in the program (see Appendix B, *Weatherization Assistant Customized Reporting Feature Reference Document*).

The "Select Report" combo box in each Report Block gives you access to any reports available for the program segment you are currently accessing. Examples of all of the standard reports are displayed in Appendix A. Choose the report desired using the standard mechanics for combo boxes (see Section 4.2, *Entering Data into the Weatherization Assistant*).

The "Preview" button in the Report Block displays the selected report as it would appear if printed. A standard Access toolbar will appear at the top of this display. Among the buttons on the toolbar are those which allow you to display varying numbers of pages of the report. Each look like a single dark colored rectangle with light colored pages in it. A single page indicates viewing one page at a time, two pages side by side allows you to view two pages at one time, and the button with four small pages in the button allows you to choose from an additional six predefined layouts. Depending on the resolution you have chosen for your graphics, many of these displays will not have large enough text to read. Clicking the mouse while positioning your cursor at a location on the display will enlarge the view about that point.



Access report toolbar

Also on the toolbar is a printer button, normally at the extreme left of the toolbar. Selecting this button will send a copy of the report to your default printer. You may also use the [Crtl-P] key combination to display the Windows Print screen and print the report from there. This form allows you to select other printers you may have installed, choose which pages to print, as well as other options.

The right-most button on the toolbar is the "Output to Notepad" button. Selecting this button will export the report to a pure ASCII text file and display it in Notepad (a Windows application). From there, the file may be saved to any location on your computer with any file name you wish. It may also be edited as any other text file or attached to e-mails, etc.

Close the report display using the "Close" button on the toolbar. The standard Windows closure X box in the upper right of the display may also be used for this purpose, but care must be taken to select the closure X box associated with the report display, since other windows may also be open at the same time with their own closure X boxes.

The "Print" button on the Report Block acts the same as the "Preview" button except it automatically presents you with the Windows Print screen in addition to displaying the report.

The "Snapshot File" button also opens the report display, but after creating a snapshot file and indicating the location where the file was placed on your computer (e.g., "Snapshot output file created: C:\Program Files\Weatherization Assistant 827\output\NAuOut-01.snp"). The filename is a default name which you may change using standard Windows procedures. A "Snapshot" file is a file formatted specifically for the "Snapshot" computer application. If you do not have this software on your computer, this option may not be of much use to you.

Chapter 5

The Agency is the highest level record type within the Weatherization Assistant program. Thus, all other records (Clients, Audits, Work Orders, etc.) must be associated with an Agency level record.

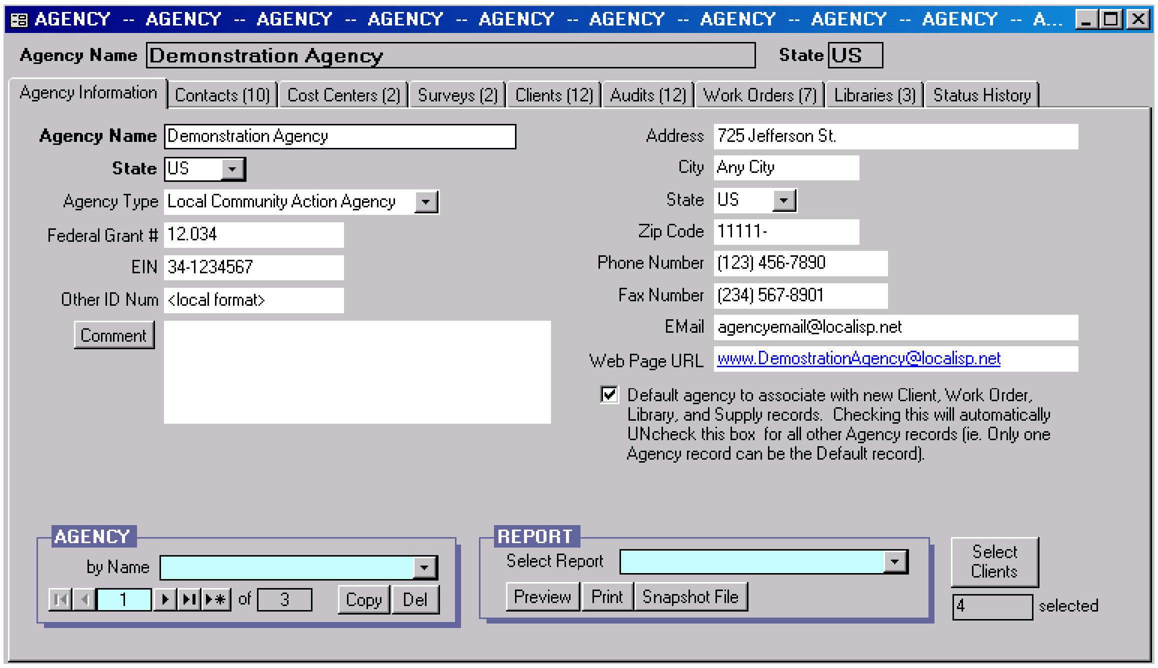
Information related to your agency is accessed from the Agency Main Menu item button. When first installed, the program has two agencies already defined, a Sample Agency and the "Your Agency Name" agency. You may verify this by revealing the combo box list in the Agency Record Navigation Block combo-box. The Sample Agency contains example records of all types to assist you in becoming familiar with the use of the program. The second is intended to be renamed to be your agency.

Although the minimum agency information necessary to operate the Weatherization Assistant program is already supplied at installation, it is highly recommended that even this information be tailored to your agency and additional information be supplied before substantial use of the program. Change the "Your Agency Name" Agency Name to be the name of your agency. Directly below this information, choose the correct state in which you work. The only other agency level information required is the name of at least one auditor or crew chief to whom responsibility for performing audits can be assigned. This data will be discussed in Section 5.2, *Contacts (Agency)*).

The remainder of this chapter will contain data item descriptions divided by the tabs displayed under the Agency Main Menu item: Agency Information, Contacts, Cost Centers, Surveys, Clients, Audits, Work Orders, Libraries, and Status History. Note that all but the first and last of these tabs have numbers in parenthesis displayed on them following the tab name. This indicates the number of entries defined for this particular record type for your agency.

5.1 Agency Information

The Agency Information form allows you to enter general information about your agency. This form displays the Agency Record Navigation Block that would allow you to view and navigate to other agencies (e.g., the Sample Agency) if others exist in your database. The form also contains the Report Block in the lower right corner for accessing agency level reports.



The Agency Information form

Below are brief comments regarding the individual data items and controls on this form:

Agency Name – Enter the name of your agency. The entry is one of only two required data items on the Agency Information Form. The entry may be up to 80 characters in length. Required.

State – Select the state in which your agency resides from the entries in the combo box list. Required.

Agency Type – Select the entry which best describes the type of your organization. The choices are: (1) Local Community Action Agency, (2) Tribal Organization, (3) Unit of Local Government, or (4) Other. Optional.

Federal Grant # – Enter the Federal Grant Number under which you perform your Weatherization Assistance Program work, as seen on the DOE Program Application Forms. Optional.

EIN – Enter your Federal Employer Identification Number assigned by the U.S. Internal Revenue Service, as entered on the Financial Status Reports of the DOE Program Application. Optional.

Other ID Num – Enter any additional identification descriptor (numbers and/or letters) which may be of use to you or your state. The entry must be 50 characters or less. Optional.

Comment – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Agency Comment is not displayed anywhere else in the program or in any pre-defined reports. However, you may wish to include the comment in a user-designed report. Optional.

Address, City, State, Zip Code – Enter the complete mailing address for your agency. (Note, express mail will normally not deliver to Post Office Boxes.) Optional.

Phone/Fax Numbers – Enter a phone and fax number through which you would prefer having others contact your agency. Numbers for individuals in your organization may be separately recorded under the Contacts tab (see Section 5.2, *Contacts (Agency)*). Optional.

E-Mail – Enter an e-mail address through which others may contact your agency. The Weatherization Assistant has the ability to e-mail client records from within the program. Setting up this feature will require you to enter this or another agency e-mail address. See Section 13.4, *E-Mailing from Within Weatherization Assistant*. Optional.

Web Page URL – If your agency has set up a web site, enter the URL in this field. Optional.

Default Agency – If selected, this check box indicates that the agency described on the remainder of the form is to be automatically associated with new Client, Work Order, Setup Library, and Supply Library records. Only one agency can be selected as the "Default Agency." Thus, selecting this check box on any Agency Information Form will automatically un-check it on all other Agency records.

Agency Record Navigation Block – The Agency Record Navigation Block may be used to find and access existing agency descriptions or create new agencies, although this would not be a common activity. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks.

Agency Report Block – The Agency Report Block provides you with access to all reports available at the Agency level. See Appendix A, *Sample Reports*, for examples of these reports and forms. As of the initial release of Version 8, the following Agency level reports were available: the Unit Production portion of the DOE Quarterly Report, Scheduled Audits (for NEAT and MHEA), Open Work Orders, and an Economic Summary by Client. See Section 4.13, *The Report Block*, for assistance with the mechanics of using the Weatherization Assistant's Report Blocks. A method to create reports tailored to your needs and whose selection could be made in the report blocks has been made available. See Appendix B, *Weatherization Assistant Customized Reporting Feature Reference Document*, for more details.

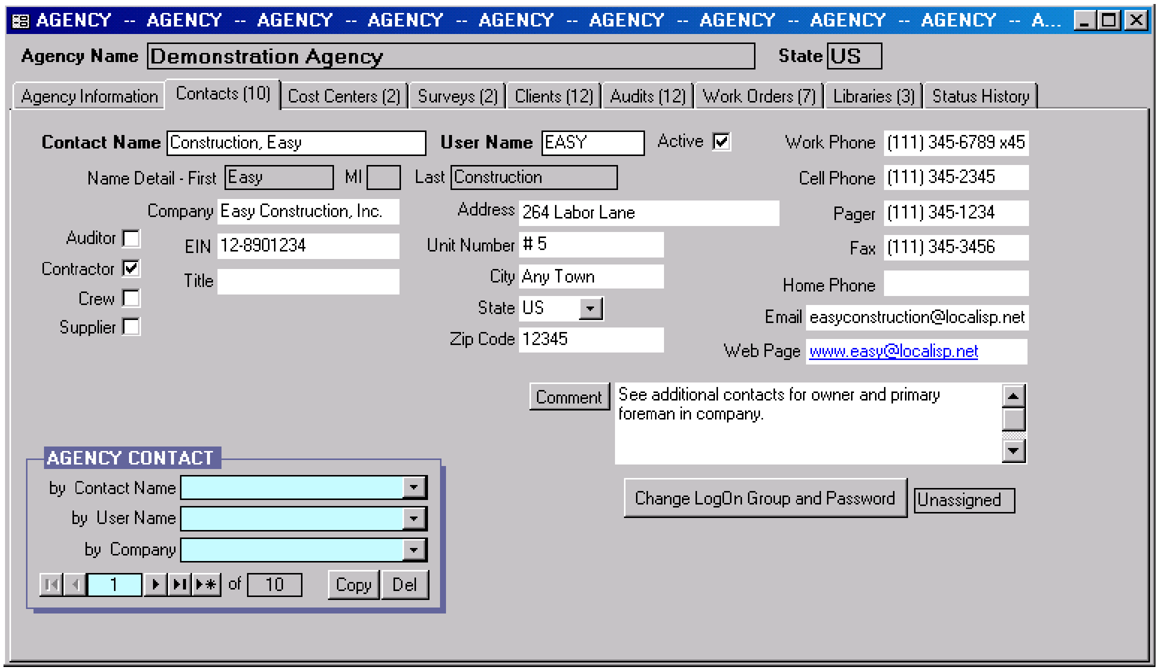
Select Clients – Should reports selected in the Agency Report Block require defining a specific range of clients to be included in the report, the forms accessed from the Select Clients button would be used to make this specification. However, none of the pre-defined reports in the initial release of Version 8 require such a definition. Should a user-designed report require client selection, the forms accessed from this button would be used for that purpose. Transfer of client data between computers requires this same client selection process. See "Selecting Client Records" in Section 12.4, *Data Transfer - Import / Export via Text Files*, for use of the Select Clients feature.

An additional use of the Client Selector form, accessible from the Select Clients button, is available if the Geographic Information System (GIS) has been implemented. From this form, you may select a group of clients whose home locations may be displayed on a map. For additional information on this feature, see the above reference on "Selecting Client Records" as well as Section 13.2, *Graphic Information System (GIS)*.

5.2 Contacts (Agency)

This tab allows you to store information on all of the people associated with your agency, including auditors, contractors, crew members, and suppliers. If you have enabled the User Logon feature (see "User logons with user names and passwords from the Agency/ Contacts/ Passwords tab," Section 11.4, *Features*), then any contact in this list with a user name and a password can log on the Weatherization Assistant. If your database is shared over a network (see Section 3.2, *Network Installation*), this contact list serves as the central list of all users. If you wish to track work orders by contractor or add suppliers to your supply libraries, you must enter these contacts as well. Be sure to use short User Names (initials perhaps) to make forms and reports more readable.

As many contacts as are required may be entered. Use the Agency Contact Navigation Block at the lower left of the form to initiate new contacts or locate and access previously entered contacts. The form may be viewed and edited in Data Sheet View, providing a summary of all contacts already entered or allowing quick changes to multiple entries.



The Contacts form

Below are brief comments regarding the individual data items and controls on this form:

<u>Contact Name</u> – Enter the name of the contact. You may enter the name with either the given or surname first. However, if the surname is entered first, place a comma between it and any given names which follow. The un-editable Name Detail fields will show you how the program sees the name you have entered. If you are entering a company, such as a supplier of materials, you likely still have a person who is your primary contact within that company. Enter that person's name. Then provide entries for User Name and Company. Suppliers and contractors listed in combo boxes in other parts of the program are identified by these data, allowing you to recognize them without having a Contact Name associated with them. The entry must be unique. Required.

<u>User Name</u> – Enter a short User Name, possibly initials, which can be used to identify the contact. In some lists and reports, space does not permit displaying the full Contact Name and the list or report will use the User Name to identify the contact. If the User Logon feature (see "User logons with user names and passwords from the Agency/ Contacts/ Passwords," Section 11.4, *Features*) is enabled, a valid

User Name and password will be required to use the Weatherization Assistant software. The entry must be unique. Required.

Company – Enter the company for whom the contact person works. The entry is optional. However, combo box lists of contractors and suppliers used elsewhere in the program will identify the contact by the Company entry, as well as User Name and/or Contact Name. Optional.

Active Check box – Only contacts who are indicated as being "Active" will appear in lists of appropriate combo boxes through out the program. See also the description for the Auditor, Contractor, Crew, and Supplier check boxes, below.

Auditor, Contractor, Crew, Supplier Check boxes – Indicate whether the contact person holds any of the positions indicated. Contacts who are Auditors will be included in the combo box list for the Assigned To field on the Audit Information tab under the Audit Main Menu items (NEAT / MHEA) (see Section 7.1, *Audit Information*). Contractors and Crews may be assigned to Work Orders (see "Contractor/Crew" in Section 8.1, *Work Order Information*) and Suppliers may be listed as sources of inventoried items in the Supply Library (see "Supplier" in Section 10.2, *Common Entries on MaterialsForms*). These listings will occur only if a particular contact is declared as "Active."

EIN – Enter the Federal Employer Identification Number of the company with whom the contact is associated, as assigned by the U.S. Internal Revenue Service. Optional.

Title – Enter any title which may help describe the contact, such as "manager," "crew chief," or "monitor." This title will not appear in lists of contacts used through out the program. Optional.

Address, Unit Number, City, State, Zip Code – Enter the complete mailing address of the contact. Optional

Work, Cell, Pager, Fax, Home Phone – Enter any of the indicated phone numbers for the contact person. Optional.

E-Mail – Enter an e-mail address for the contact person. The Weatherization Assistant has the ability to e-mail client records from within the program. Entering an e-mail address on the Contact tab will automatically enter this contact and his e-mail address in the Address Book of this feature. See Section 13.4, *E-Mailing from Within Weatherization Assistant*. Optional.

Web Page URL – If available, enter the URL for this contact's web site. This could be particularly useful, for example, if the contact is a supplier and his web site contains a catalogue of available items. The web site may be accessed directly from the Contact tab by clicking your mouse on the address. Optional.

The User Group and Password form

Change LogOn Group and Password – If the User Logon feature (see "User logons with user names and passwords from the Agency/ Contacts/ Passwords tab," Section 11.4, *Features*) has been enabled in Preferences, only Agency Contacts who have been assigned LogOn passwords will be able to open the Weatherization Assistant software. Use the form available from selecting the "Change LogOn Group and Password" button to provide this information. Assign the Contact a User Group, either "User" or "Admin." Contacts who are Users will be able to create new records and edit existing ones, but not be allowed to delete Client, Audit, or Work Orders records. In addition, the User Group cannot change the settings under the Features tab of Preferences. Contacts in the Admin group have full capabilities, including deletion of all records. If the contact has not previously had a password, enter a new password with confirmation only. Otherwise, enter the existing password before assigning a new one. Select the "Apply New Password" button to complete the process. Note: If the User Logon feature is not turned on, there are no restrictions enforced and every user is considered to be in the "Admin" User Group.

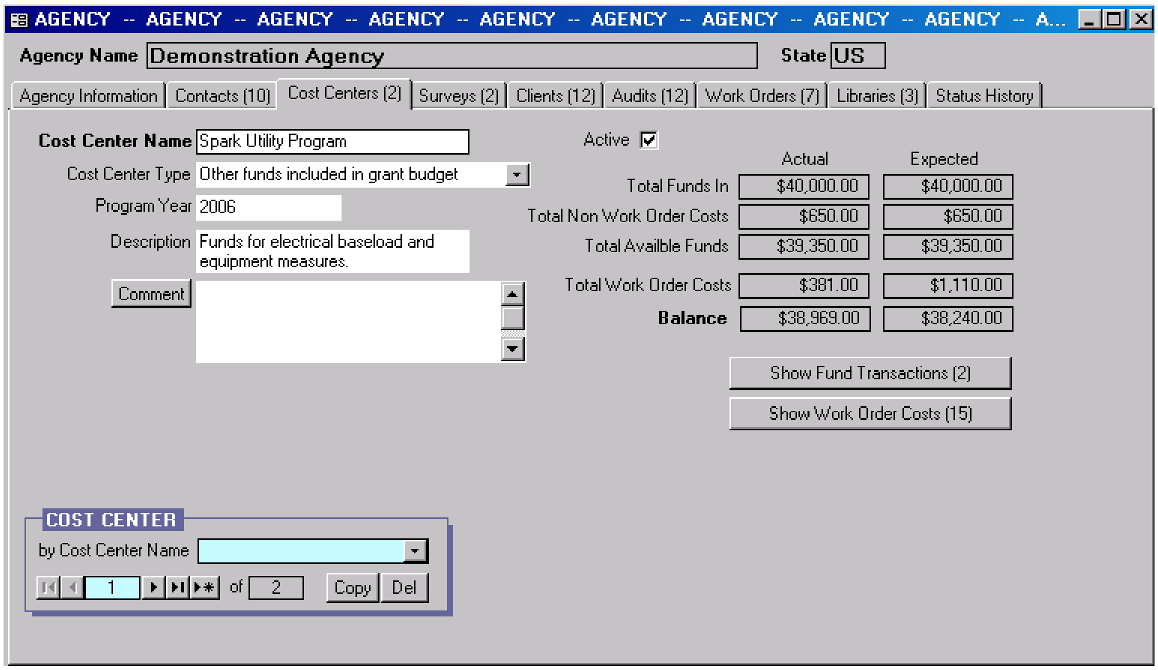
Comments – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. Agency Contact Comments are not displayed anywhere else in the program or in any pre-defined reports. Optional.

Agency Contact Record Navigation Block – The Agency Contact Record Navigation Block may be used to find and access existing agency contacts or initiate new contacts. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks.

5.3 Cost Centers

Beginning with Version 8 of the Weatherization Assistant, the user has the option of assigning individual measures to different cost centers (funding sources).

Summaries of expenditures by cost center are then available as well as the balance of funds remaining for each cost center, if the user has also entered the funding allocations for each.



The Cost Centers form

Below are brief comments regarding the individual data items and controls on this form:

<u>Cost Center Name</u> – Enter the name of the cost center from which funds are to be available. Undoubtedly, the DOE Weatherization Program will be one of them. You may also include LIHEAP, PVE, utility program funds, etc. Required.

<u>Active</u> Check box – Indicate whether the Cost Center is currently available to fund work. If not Active, a cost center will not appear in the combo-boxes which assign measures to cost centers, found elsewhere in the program.

<u>Cost Center Type</u> – Indicate the type of funding source: (1) DOE, (2) Other funds included in grant budget, or (3) Other funds not included in grant budget. Optional.

<u>Program Year</u> - Enter the program year for which the funding is being tracked. Optional.

<u>Description</u> – Enter any additional description you may need to identify this cost center. Optional.

<u>Cost Center Financial Summary</u> - Un-editable fields are displayed on the Cost Center tab which summarize the income and expenditures for each cost center. Two

columns of numbers exist, the "Actual" and the "Expected." "Actual" debits or credits are those which have been declared "Cleared" under the Show Fund Transactions button (see below) or which are listed as "Actual" from work orders. "Expected" values include the above "Actual" values but add to them those which have been entered into the Transactions form but have not yet been "Cleared" and "Estimated" costs from active work orders which haven't yet been declared "Actual" (see "Quantity" and "Unit Cost" "(Actual)" under "Materials/Labor Details Sub-Form" in Section 8.3, *Measures (Work Order)*).

The first two rows of entries in this summary list the total income for the funding source and the total non work order related costs for the funding source, i.e., any costs that may be considered overhead or administrative (such as T&TA) which will never be accounted for in work orders of individual audits. The individual entries which make up these two totals are entered under the Show Fund Transactions button (see below). The third row of entries is simply the difference between the total income and the total non work order related costs. The fourth (next to last) row of entries list the total costs from all un-canceled work orders. The individual entries which make up this total may be viewed under the Show Work Order Costs button (see below). The last row of entries displays the Balance for the funding source, having subtracted the Total Work Order Costs from the Total Available Funds.

Show Fund Transactions – The individual entries which comprise the Total Funds In and the Total Non Work Order Costs in the cost center financial summary are displayed and edited under the Show Fund Transactions button.

Cost Center Funds (Spark Utility Program)

Date	Description	Credit	Debit (non-Work Order)	Cleared	<Comment>
5/2/2005	Utility allotted funding	$40,000.00	$0.00	☑	
6/3/2005	Admin for paper work	$0.00	$650.00	☑	
		$0.00	$0.00	☐	

Fund Transactions table under the Agency / Cost Centers tab

Enter the date of the transaction in the first column and some description of the transaction in the second. Credits (income) are entered in the third column while non-work order related debits (costs) are entered in the fourth column. Anticipated credits and debits may be entered. However, they will only affect totals under the "Expected" column on the financial summary until the Cleared check box has been selected. Enter any comments associated with the transaction. Double clicking on the Comment field will bring up the Comment Editor permitting entry of extended length comments, if necessary. No standard Form View is available for individual entries of this table. However, entries may be copied and deleted using the conventions applicable to Data Sheet Views.

Show Work Order Costs – An itemized listing of work order costs which comprise the Total Work Order Costs in the financial summary are displayed under the Show Work Order Costs button.

Work Order Measure Costs, READ ONLY (Spark Utility Program)

<Client>	<Work Order>	Order	<Measure>	EstCost	ActCost
05_348	WO/05_348/EASY/1	1	Install exhaust fan	$306.00	$306.00
05_348	WO/05_348/EASY/1	3	High Eff Furnace	$1,800.00	
05_348	WO/05_348/EASY/1	4	Low Flow Showerheads	$20.00	
05_348	WO/05_348/EASY/1	5	DWH Pipe Insulation	$15.00	

Work Order Costs table under the Agency / Cost Centers tab

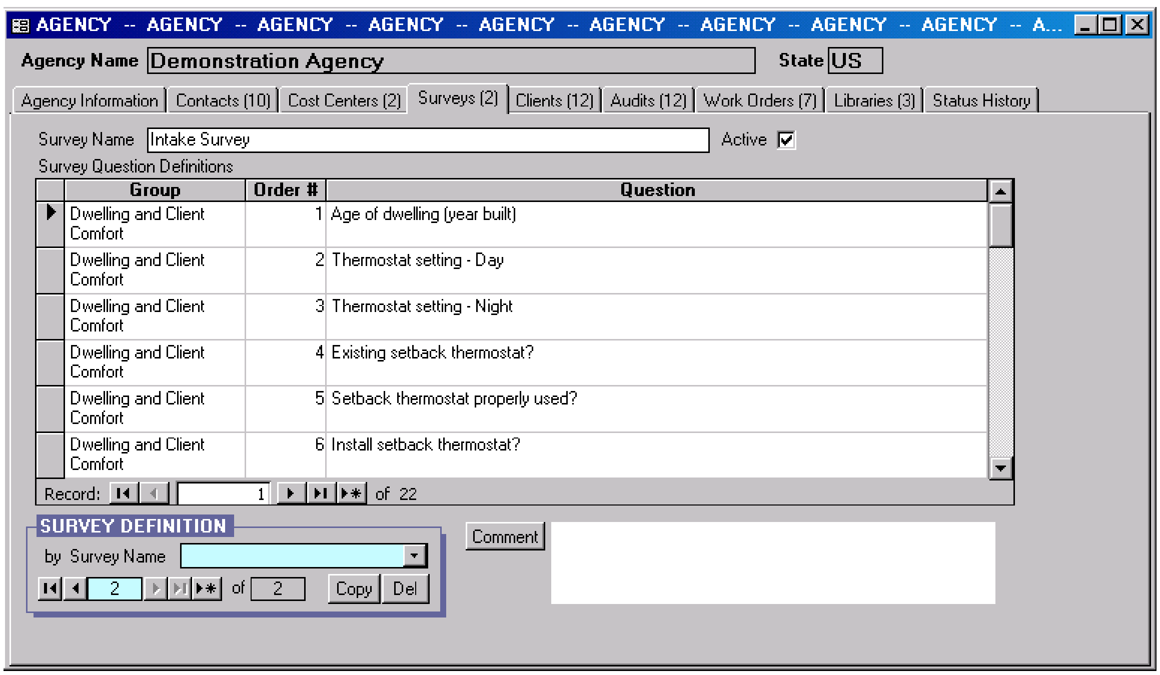
Shown in their respective columns of entries are (1) the Client ID of the client for whom the work is being performed, (2) the specific Work Order under which the cost was incurred, (3) the measure within the Work Order whose cost is being listed, preceded by the order number of the measure within the work order, (4) the estimated cost for the measure, and (5) the actual measure cost, if one has been determined. The "ActCost" entries on this form are included in both the "Actual" and "Expected" entries of the financial summary, where as the "EstCost" costs are included in only the "Expected" totals of the summary.

The form is "READ ONLY." No entries can be edited. Modifications to the entries can only be made in the respective work orders which generated the costs. However, note that the headers for Client, Work Order, and Measure are in angle brackets (<>). This implies that the actual Client, Work Order, or Measure within a work order may be accessed directly by double clicking on the record's entry in the table. If this technique of editing any of these records is used, it is highly recommended that the form be closed out when you have completed the modifications. Having too many inter-related forms open at the same time in Access can confuse the software and result in abnormal behavior and warnings.

Cost Center Record Navigation Block – The Cost Center Record Navigation Block may be used to find and access existing cost centers or create new cost centers. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks.

5.4 Surveys (Agency)

The Surveys tab under the Agency Main Menu item is used to define custom surveys for your agency to collect additional information on your clients or their households. Surveys need not be limited to questions asked of the client, but could also be used to document other information related to the clients collected by the agency, such as income, social security numbers, etc. You can setup any number of surveys, give each a name, and then define groupings of questions under each survey. The surveys are filled out for individual clients under the Client Main Menu item (see Section 6.7, *Surveys (Client)*). Choose an existing survey to edit or begin defining a new survey by using the Survey Definition Record Navigation Block in the lower left corner of the Surveys form (see Section 4.1, *Record Navigation*). Then use the fields described below to modify or define your survey.



The Surveys Definition form

<u>Survey Name</u> – Enter a Survey Name by which the survey will be identified in the Survey Definition Record Navigation Block and later in the Client Main Menu item. Required.

<u>Active</u> – Indicate whether the survey is considered "Active," or in use. Only Active surveys will be available at the Client level.

Comment – Supply any comment you wish that applies to the entire survey. Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. Optional.

Use the items in the Survey Question Definitions sub-form to define the questions to be included in the survey. A new question may be initiated by either positioning the cursor at the first blank record or by selecting the new record icon, ▶*. Be careful to distinguish between the new record icon associated with the question sub-form as opposed to new record button in the Survey Definition Record Navigation Block. The latter would initiate a whole new survey, not a new question within the existing survey. The entries in the sub-form are copy/paste friendly from both the Weatherization Assistant program and other text or word processing software. The multiple columns of the sub-form may be copied to a spread sheet, such as Microsoft Excel, for printing, or print a yet empty survey from the Client Information Form of the Client Main Menu item after associating it with a Client (see "Client Report Block" in Section 6.1, *Client Information*).

Group – The assignment of each question to a group is optional. You could use the Group designation to sort the questions on the sub-form, using standard Data Sheet View sorting techniques. The entry is limited to 50 characters. Optional

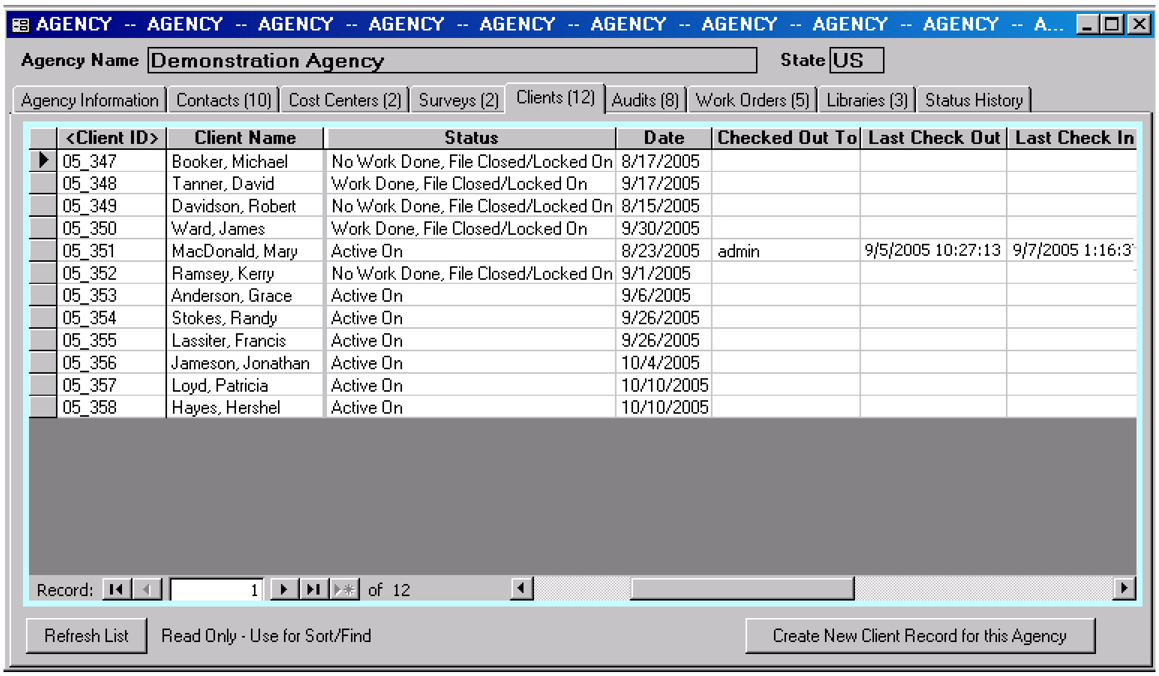
Order # – Select the order the questions will appear on the Survey Report by assigning order numbers. Optional.

Question – Enter the statement of the question to be asked the client. Each question may be 255 characters or less.

5.5 Clients

The Clients tab of the Agency Main Menu item is a Navigation Data Sheet View showing all client records associated with the current agency. The tab is used primarily for navigation to the individual client records and for creation of new blank client records. The light blue border of the data sheet on this tab is the visual indicator that this data sheet is used for navigation rather than data entry. Entries under column headings which are in angle brackets (<>) can be double clicked with the mouse to navigate to the associated record. Like any data sheet, the sorting can be changed by highlighting a column and pressing one of the sort buttons in the tool bar.

The Client ID, Agency State, Client Name, and Alt. Client ID entries are those given on the Client Information form of the Client Main Menu item for each of the clients listed (see Section 6.1, *Client Information*). Some of these columns of data may be collapse by default and require double clicking the mouse near the column borders in the header to have them expanded. Note that you may need to use the horizontal scroll bar to display all fields. The remaining data entry items and controls visible on the form are described below:



<Client ID>	Client Name	Status	Date	Checked Out To	Last Check Out	Last Check In
05_347	Booker, Michael	No Work Done, File Closed/Locked On	8/17/2005			
05_348	Tanner, David	Work Done, File Closed/Locked On	9/17/2005			
05_349	Davidson, Robert	No Work Done, File Closed/Locked On	8/15/2005			
05_350	Ward, James	Work Done, File Closed/Locked On	9/30/2005			
05_351	MacDonald, Mary	Active On	8/23/2005	admin	9/5/2005 10:27:13	9/7/2005 1:16:3
05_352	Ramsey, Kerry	No Work Done, File Closed/Locked On	9/1/2005			
05_353	Anderson, Grace	Active On	9/6/2005			
05_354	Stokes, Randy	Active On	9/26/2005			
05_355	Lassiter, Francis	Active On	9/26/2005			
05_356	Jameson, Jonathan	Active On	10/4/2005			
05_357	Loyd, Patricia	Active On	10/10/2005			
05_358	Hayes, Hershel	Active On	10/10/2005			

The Clients table
Note: Columns not displayed include "Alt. Client ID" (not used in example)," Agency," "Agency State," "Last Edited," and those related to exporting client records.

<u>Last Edited</u> – Gives the date (and time, if expanded) of the last change made to this client record from the Client Main Menu item tabs.

<u>Status</u> – Gives the latest client status for each client, as set on the Status tab under the Client Main Menu item for the client. See Section 6.2, *Status (Client)*.

<u>Date</u> – Gives the Date this latest status was set.

<u>Refresh</u> – With the possibility that any of the information displayed on the form and sub-form has been changed since the last time this form was opened, the Refresh button can be used to update the information displayed to reflect these changes.

<u>Create New Client Record for this Agency</u> – You may use this button to initiate entry of data for a new client. Selecting the button will take you to the Client Information Form under the Client Main Menu item, where descriptive data for the

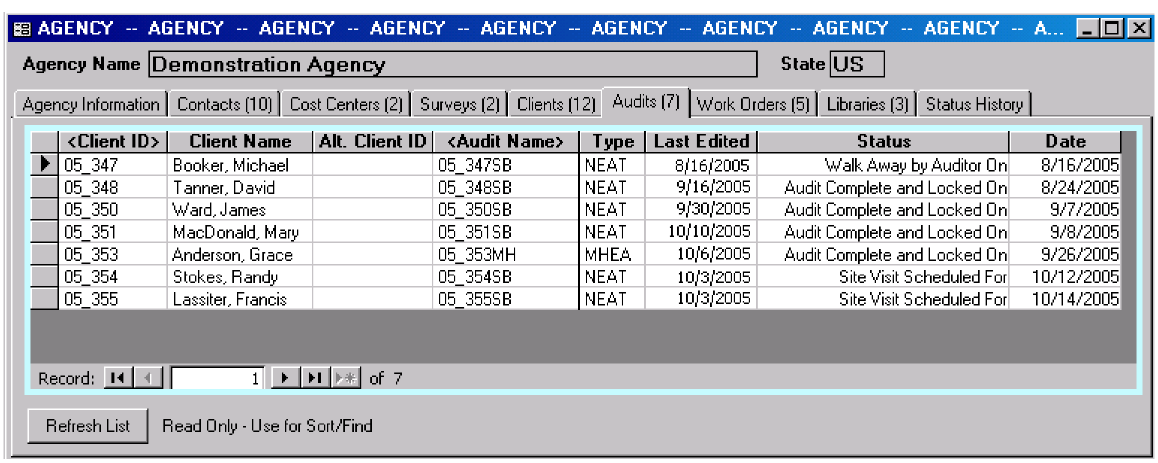
new client may be entered. Following entry of this data and closing the Client window, you will be returned to this Client tab under the Agency Main Menu item. The new client should already be added, but if in doubt, you may use the Refresh button on the form.

Some additional data items, normally hidden, may appear on the form, which are random long integers generated by Access for its own record identification purposes. If these data columns become visible, they may have their column widths collapsed to zero in order to hide them.

5.6 Audits (Agency)

The Audits tab of the Agency Main Menu item is a Navigation Data Sheet View showing all audit records associated with the current agency. The tab is used primarily for navigation to the individual audit records. The light blue border of the data sheet on this tab is the visual indicator that this data sheet is used for navigation rather than data entry. Entries under column headings which are in angle brackets (<>) can be double clicked with the mouse to navigate to the associated record. Like any data sheet, the sorting can be changed by highlighting a column and pressing one of the sort buttons in the tool bar.

Normally there would be only one audit record for each client. However, the Weatherization Assistant does allow you to create and execute more than one audit per client. This might be useful if you desire to see the effect of some modification in the building description on the recommendations of the audit, or update or correct an existing audit without loosing the original description. However, care must be taken to insure only one set of active work orders exists for the client, else confusion and double accounting of costs are likely to occur.



The Audits table

The Client ID, Client Name, Alt. Client ID, Audit Name and Type entries are those given on the Audit Information form of either Audit Main Menu items (NEAT or MHEA) for each of the audits listed (see Section 7.1, *Audit Information*). The remaining data entry items and controls visible on the form are described below. Note that you may need to use the horizontal scroll bar to display all fields.

Last Edited – Gives the date (and time, if column is expanded) of the last change made to this audit record from the Audit Main Menu items tabs.

Status – Gives the latest audit status for each audit, as set on the Status tab under the Audit Main Menu item for each audit displayed. See Section 7.2, *Status (Audit)*.

Date – Gives the Date this latest status was set.

Refresh – With the possibility that any of the information displayed on the form and sub-form has been changed since the last time this form was opened, the Refresh button can be used to update the information displayed to reflect these changes.

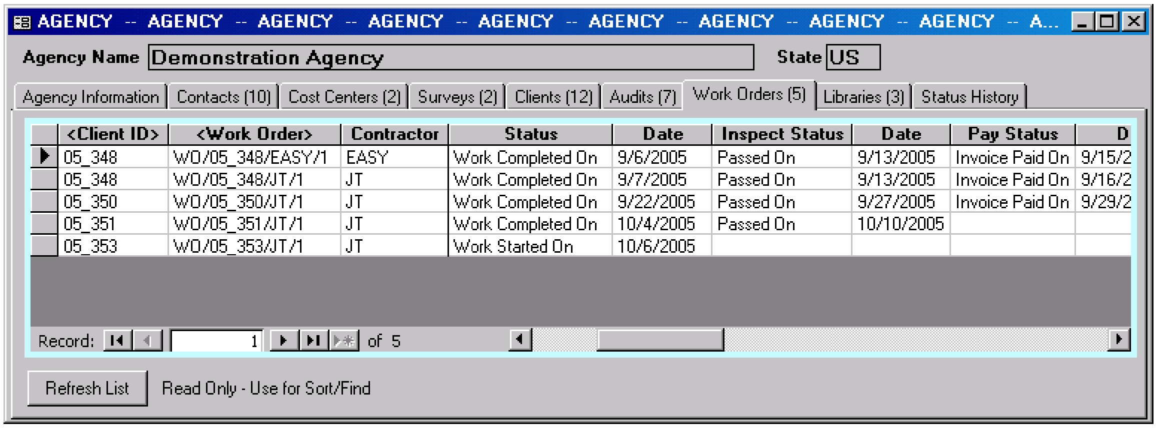
Some additional columns of data, normally hidden, may appear on the form, which are random long integers generated by Access for its own record identification purposes. If these data columns become visible, they may have their column widths collapsed to zero in order to hide them.

5.7 Work Orders (Agency)

The Work Orders tab of the Agency Main Menu item is a Navigation Data Sheet View showing all work order records associated with the current agency. The tab is used primarily for navigation to the individual work orders. The light blue border of the data sheet on this tab is the visual indicator that this data sheet is used for navigation rather than data entry. Entries under column headings which are in angle brackets (<>) can be double clicked with the mouse to navigate to the associated record. Like any data sheet, the sorting can be changed by highlighting a column and pressing one of the sort buttons in the tool bar.

Displayed on this form may be more than one work order per client, if more than one contractor is assigned work for a client. The work orders may have been generated from the Measures tab on the Audit form (see "Create Work Orders"in Section 7.9, *Measures (Audit)*) or manually, directly under the Work Orders Main Menu item (see "Work Order Record Navigation Block" under Section 8.1, *Work Order Information*).

The Client ID, Work Order, Agency Name, and State entries are those associated with the work order, as prescribed when generating the work order. The Agency information columns are collapsed, by default, and may require double clicking on the column border in the header to expand them. The remaining data entry items and controls visible on the form and sub-form are described below:



The Work Orders table
Note: "Last Edited" column not displayed.

<u>Contractor</u> – The Contractor assigned the work. This entry may be blank if none has been assigned. Contractors are defined on the Contacts tab under the Agency Main Menu item (see Section 5.2) and assigned each measure either by default in the Setup Library (see Section 9.5), at initiation of work orders from the Measure tab under the Audit Main Menu item (see Section 7.9), or in the Work Order Main Menu item itself (see section 8.1). See the respective sections of this manual for more information on defining and assigning contractors.

<u>Last Edited</u> – Gives the date (and time, if the column is expanded) of the last change made to this work order record from the Work Order Main Menu item tabs or the date the work order was generated from the Measures tab of the Audit Main Menu item, if no other modifications have been made.

<u>Status</u> – There are three categories of Status specifications for a Work Order: a general status, an inspection status, and a payment status. Each status category has its own column in the Work Orders sub-form, with corresponding dates each status was changed. The work order status' are changed under the Work Order Main Menu item for each individual work order. See Section 8.2, *Status (Work Order).*

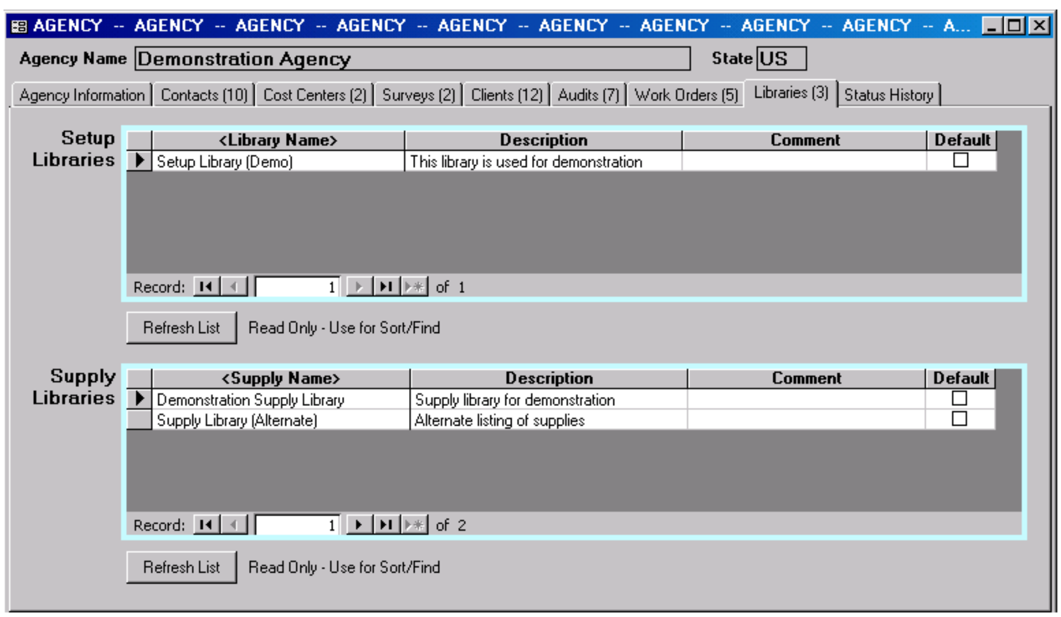
<u>Date</u> – Gives the Date this latest status was set for each work order status category.

<u>Refresh</u> – With the possibility that any of the information displayed on the form and sub-form has been changed since the last time this form was opened, the Refresh button can be used to update the information displayed to reflect these changes.

Some additional data items, normally hidden, may appear in the sub-form, which are random long integers generated by Access for its own record identification purposes. If these data columns become visible, they may have their column widths collapsed to zero in order to hide them.

5.8 Libraries

The Libraries tab of the Agency Main Menu item is a Navigation Data Sheet View showing all Library records associated with the current agency. Two separate listings occur, one for Setup Libraries (see Chapter 9, *Setup*) and another for Supply Libraries (see Chapter 10, *Supplies*). The tab is used for reference and navigation purposes only. The light blue border of the data sheets on this tab is the visual indicator that these data sheets are used for navigation rather than data entry. However, the Setup and Supply Libraries may be directly accessed from the table by double clicking the mouse on the library name of interest. Like any data sheet, the sorting can be changed by highlighting a column and pressing one of the sort buttons in the tool bar.



The Libraries tables

The Library Name, Description, Comment, and Default status entries are those given to each library under their respective entries from the Setup or Supply Library Main Menu item.

With the possibility that any of the information displayed on the form and sub-form has been changed since the last time this form was opened, the Refresh buttons can be used to update the information displayed to reflect these changes.

Some additional columns of data, normally hidden, may appear in the form, which are random long integers generated by Access for its own record identification purposes. If these data columns become visible, they may have their column widths collapsed to zero in order to hide them.

5.9 Status History

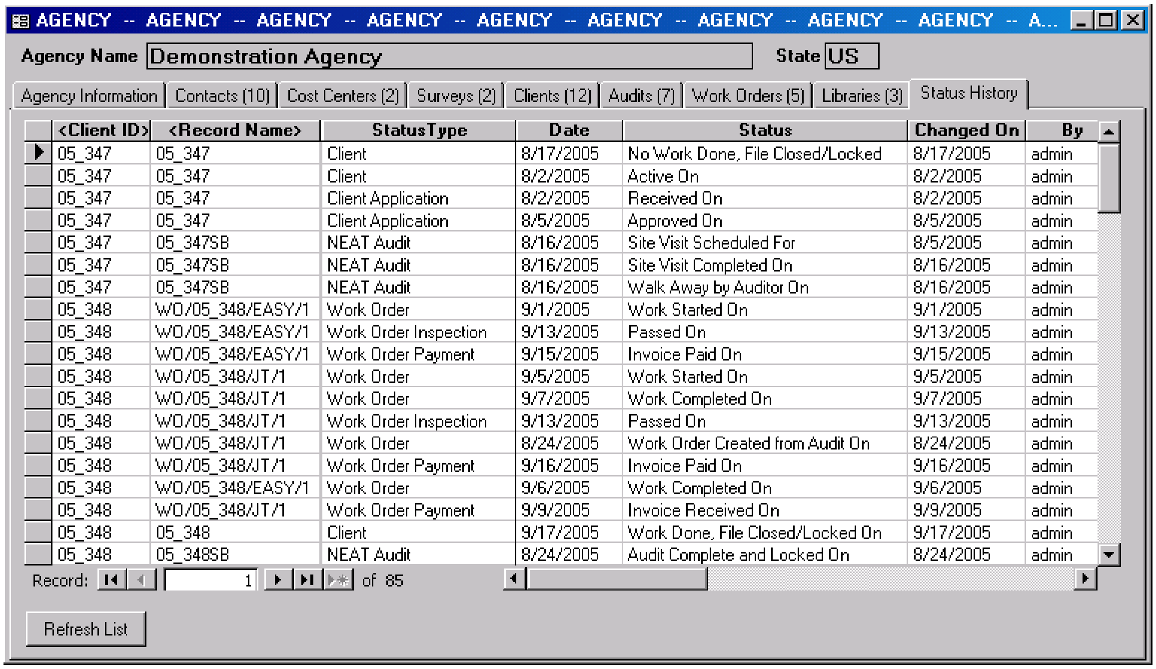
The Status History tab of the Agency Main Menu item lists the current status and the entire history of status changes for all status categories for all clients belonging to the current agency. The status categories tracked are:

Client Level	Audit Level	Work Order Level
General	NEAT	General
Application	MHEA	Inspection
		Payment

This form is used to review the history of status changes, not to edit individual records in the history. Changes in status should be made under the Status tabs of the respective Client (see section 6.2), Audit (see Section 7.2), or Work Order (see Section 8.2) Main Menu items. Section 13.3, *Status Tracking*, displays all of these categories and the possible settings for each. Entries in the table under column headings which are in angle brackets (<>) can be double clicked with the mouse to navigate to the associated record. Thus, the record whose status listing is being viewed on this form may be quickly accessed.

The history retains all settings. If you make a mistake in setting a status, correcting it will still leave the old setting in the history. Even though you cannot edit status records from the Status History form, entire status records can be deleted using the form. Thus, the form is a good location to detect mistaken entries and delete them. Use the same technique you use to delete any records from a Data Sheet View form (see Section 4.10, *Deleting Data).*

Combining the use of the filter and sort features in this form can produce a useful display (see the discussion of filtering and sorting in Section 4.8, *Data Sheet and Form Views of Records*). If you first filter the entries by a specific client, then sort by date, you will receive a chronological listing of all activities associated with a specific client. A similar display can also be produced by selecting the "Overall Client Status History"button of the Client Status tab (see section 6.2, *Status (Client)*), then sorting on date.



<Client ID>	<Record Name>	StatusType	Date	Status	Changed On	By
05_347	05_347	Client	8/17/2005	No Work Done, File Closed/Locked	8/17/2005	admin
05_347	05_347	Client	8/2/2005	Active On	8/2/2005	admin
05_347	05_347	Client Application	8/2/2005	Received On	8/2/2005	admin
05_347	05_347	Client Application	8/5/2005	Approved On	8/5/2005	admin
05_347	05_347SB	NEAT Audit	8/16/2005	Site Visit Scheduled For	8/5/2005	admin
05_347	05_347SB	NEAT Audit	8/16/2005	Site Visit Completed On	8/16/2005	admin
05_347	05_347SB	NEAT Audit	8/16/2005	Walk Away by Auditor On	8/16/2005	admin
05_348	WO/05_348/EASY/1	Work Order	9/1/2005	Work Started On	9/1/2005	admin
05_348	WO/05_348/EASY/1	Work Order Inspection	9/13/2005	Passed On	9/13/2005	admin
05_348	WO/05_348/EASY/1	Work Order Payment	9/15/2005	Invoice Paid On	9/15/2005	admin
05_348	WO/05_348/JT/1	Work Order	9/5/2005	Work Started On	9/5/2005	admin
05_348	WO/05_348/JT/1	Work Order	9/7/2005	Work Completed On	9/7/2005	admin
05_348	WO/05_348/JT/1	Work Order Inspection	9/13/2005	Passed On	9/13/2005	admin
05_348	WO/05_348/JT/1	Work Order	8/24/2005	Work Order Created from Audit On	8/24/2005	admin
05_348	WO/05_348/JT/1	Work Order Payment	9/16/2005	Invoice Paid On	9/16/2005	admin
05_348	WO/05_348/EASY/1	Work Order	9/6/2005	Work Completed On	9/6/2005	admin
05_348	WO/05_348/JT/1	Work Order Payment	9/9/2005	Invoice Received On	9/9/2005	admin
05_348	05_348	Client	9/17/2005	Work Done, File Closed/Locked On	9/17/2005	admin
05_348	05_348SB	NEAT Audit	8/24/2005	Audit Complete and Locked On	8/24/2005	admin

The Status History tables
Note: "Comment" field not displayed.

Chapter 6

Since Audits and Work Orders are organized under clients, the first task in using the Weatherization Assistant for a new client is to enter identifying information about the client under the Client Main Menu item. You may wish to enter minimal information about several clients into this portion of the Weatherization Assistant at one time, before proceeding further with audit information, recommendations, or work orders.

You may open a new client record in either of two ways: (1) by selecting the Client Button on the Main Menu, then selecting the new record button, ▸*, from the Client Record Navigation Block; or (2) enter the Agency Main Menu item, select the Client tab on the Agency form, then click on the "Create New Client Record for this Agency" button. Either method will take you to a blank Client Record.

You may also edit any existing clients, accessing the client data in two ways, analogous to those for new clients above: (1) select the Client Button from the Main Menu, then use the Client Record Navigation Block combo box list to locate the client and access the data, or (2) enter the Agency Main Menu item, select the Client tab on the Agency form, then double click your mouse on the Client ID corresponding to the client of interest.

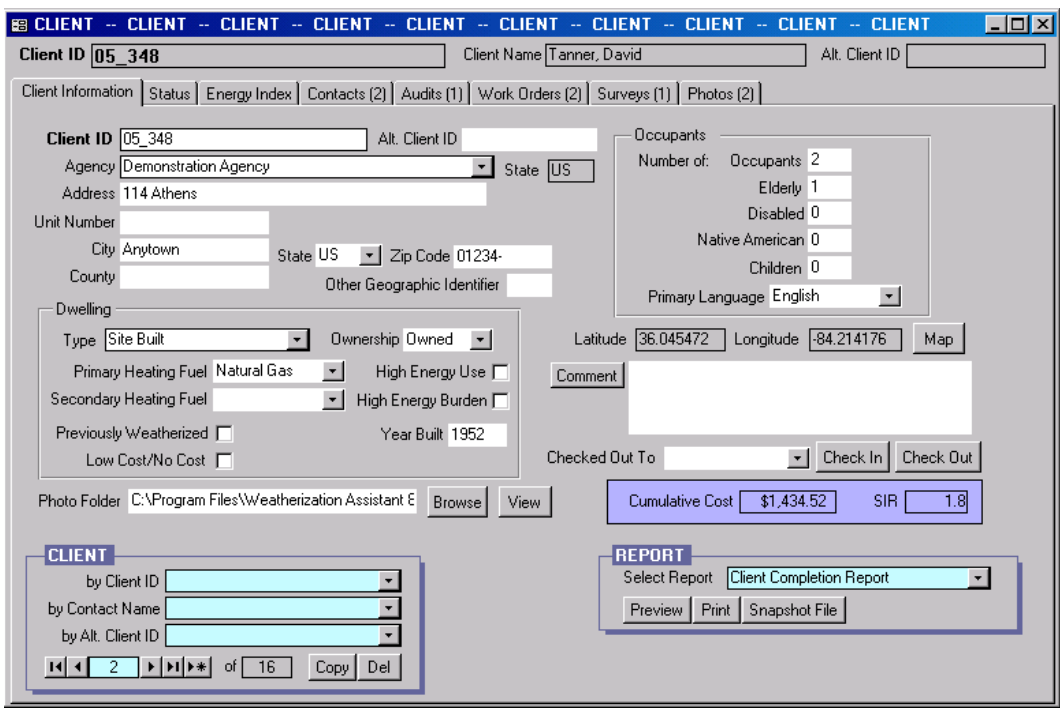
In each of the cases above, the first of the methods will likely be the more common, since it saves having to pass through the Agency form and allows Access to operate with less open forms.

The minimal information required for a specific Client is a Client ID, the Agency handling the client (normally automatically entered for you), and the type of dwelling, all entered on the Client Information tab under the Client Main Menu item. However, you may store additional client data in case you are using the Weatherization Assistant as the main repository of client information. The remainder of this chapter will be divided into descriptions of data entry items on each of the tabs seen under the Client Main Menu item: Client Information, Status, Energy Index, Contacts, Audits, Work Orders, Surveys, and Photos (if the pathname method of photo storage has been activated in Preferences (see Section 11.4, *Features*)). All but the first three of the tabs identifying these sub-categories will have a number in parentheses on the tab following the category name. These numbers indicate the number of entries which are defined for this particular record type for the client currently being considered.

6.1 Client Information

This form asks for general information relating to a specific client and the client's dwelling. All of the data on this form are optional except the Client ID, the Agency, and the Dwelling Type. However, optional data may still be used elsewhere in the program or in reports that you may generate. For example, the majority of information in the Dwelling and Occupants blocks of data are used to generate the Unit Production portion of the DOE Quarterly Report, accessed from the Report Block under the Agency Main Menu item (see Section 5.1, *Agency Information: Agency Report Block*).

The form displays the Client Record Navigation Block that allows you to view and navigate to other clients, if others exist in your database. The form also contains the Client Report Block in the lower right corner for accessing the client level reports.



The Client Information form

Shows all options (including both photo options, normally mutually exclusive)

Below are brief comments regarding the individual data items and controls on this form:

Client ID – This data item is designed to be the key parameter identifying this client to you and to the computer. As such, it must be unique. Although the identifier could be a name of an individual, most agencies have alternative designations to identify their clients and the Weatherization Assistant has other locations in which to enter the client's name(s). Examples of possible Client IDs include entries containing location (county abbreviations), dates (of acceptance into program), or the number of the client for a particular program year. The Client ID is one of several fields by which you may search to locate information on an existing client. The entry must be 50 characters or less. However, report footers can only report the first 20 characters. The Client ID must be unique. Required.

Alt. Client ID – If in your agency you have multiple means of identifying a client, the Alternate Client ID field allows you to assign a second identifying parameter to each client. The Client Record Navigation Block can search for a client by this designation as well as the Client ID. The entry must be 50 characters or less. However, report footers can only report the first 20 characters. Optional.

Agency – This field displays the agency to which the client has been assigned. A new client will automatically be assigned the Default agency (see "Default Agency" in Section 5.1, *Agency Information*). In order to be assigned a client, an agency must first be defined under the Agency Main Menu item. Changing the agency a client is assigned to is not recommended if there are already audits and/or work orders associated with that client. Information in these program segments would have to be re-entered to retain consistency with the new agency assignment. Required.

Address, Unit Number, City, County, State, Zip Code – Enter the address of the dwelling to be weatherized. This address may or may not be the same as any address you may supply for contacts associated with the client (see Section 6.4, *Contacts (Clients)*). However, it is the address which the Geographic Information System (GIS) will use to plot the location of the dwelling, if you are using this feature (see Section 13.2, *Geographic Information System (GIS)*). Optional.

Other Geographic Identifier – Your agency may use an additional geographic identifier associated with each client, such as the congressional district or plotting coordinates. Enter this alternate identifier in this field. The entry may be 20 characters or less. Optional.

Dwelling Data Block

The following data items are included in the Dwelling data block on the Client Information form. The data are primarily used to allow automatic creation of the Unit Completion portion of the DOE Quarterly Report. Definitions of the items should be consistent with use in this report, and/or as given in the DOE guidance and 10 CFR Part 440. Entry is optional for all but the Dwelling Type.

Type – Choose from the combo box list the type which best describes the dwelling: (1) Site Built, (2) Mobile Home, (3) Duplex, (4) Triplex, (5) Fourplex, (6) Multifamily (5 or more units per building), (7) Shelter,and (8) Other. Required.

Ownership – Indicate whether the occupants own or rent their dwelling. If "Other" you may wish to specify details in the Comment field. Optional.

Primary Heating Fuel – Choose the fuel that provides the most space heat in the home: (1) None, (2) Natural Gas, (3) Oil, (4) Electricity, (5) Propane, (6) Wood, (7) Coal, (8) Kerosene, and (9) Other. If "Other," specify in the Comment field. Optional.

Secondary Heating Fuel - If more than one fuel is used to provide space heat to the home, enter the next most used fuel. The selections are the same as for the primary heating fuel. Optional.

High Energy Use – Select this check box if the dwelling is considered a high energy user, i.e., "a low income household whose residential energy expenditures exceed the median level of residential expenditures for all low-income households in the State." Optional.

High Energy Burden - Select this check box if the energy use of this dwelling is considered a high burden for the occupants, i.e., "a low-income household whose residential energy burden (residential [energy] expenditures divided by the annual income of that household) exceeds the median level of energy burden for all low-income households in the State." Optional.

Previously Weatherized – Select this check box if the dwelling was previously weatherized, defined consistent with use in the Unit Completion portion of the DOE Quarterly Report.

Low Cost/No Cost – Select this check box if the work performed on the dwelling may be considered Low Cost/No Cost, defined consistent with use in the Unit Completion portion of the DOE Quarterly Report. Normally this would be a home in which a maximum of $50 materials were expended.

Year Built – Enter an estimate of the year the dwelling was built.

Occupants Data Block

The following data items are included in the Occupants data block on the Client Information form. The data are primarily used to allow automatic creation of the Unit Completion portion of the DOE Quarterly Report. Definitions of the items should be consistent with use in this report, and/or as given in the DOE guidance and 10 CFR Part 440. Entry of all items is optional.

Occupants – Enter the total number of occupants living in the dwelling. Although optional, this entry is also used in the audit portion of the program to estimate water usage and modify the minimum leakage rate for a house. A default value is used if no entry is made. Optional.

Elderly - Enter the number of elderly who live in the dwelling, those 60 years of age or older. Optional.

Disabled - Enter the number of disabled who live in the dwelling, as defined in 10 CFR Part 40. Optional.

Native American - Enter the number of occupants who are members of an Indian tribe. Optional.

Children - Enter the number of dependents in the dwelling who do not exceed 19 years of age, unless otherwise defined in your State Plan. Optional.

Primary Language - Select the category which best describes the primary language spoken by the occupants: (1) English, (2) Spanish, (3) Other European Language, (4) Other Asian Language, and (5) Other. If "Other," you may specify details in the Comment field. Optional.

Comment – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Client Comment is displayed in a variety of reports and forms including the Client Information Report and the NEAT/MHEA Data Collection Form (Client Specific), available from the Client Main Menu item and the Audit Input Report from the Audit Main Menu item. You may wish to include the comment in a user-designed report. Optional.

Cumulative Cost and SIR – The Economic Summary Block located below the Client Comment field contains these two un-editable fields. Entries in the fields are based on the total Actual Costs and Savings as determined in the Work Orders associated with the client. See "Quantity (Actual)" and "Unit Cost (Actual)" in "The Materials/Labor Details Sub-Form" in Section 8.3, *Measures (Work Order)*).

Client Record Navigation Block – The Client Record Navigation Block may be used to find and access client descriptions or initiate new clients. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record

Navigation Blocks. The combo box lists will display only the clients associated with the Agency currently selected (bookmarked) on the Agency Information tab under the Agency Main Menu item. Normally the agency selected on this tab is your agency, so the combo box lists will display only your agency's clients. If you have more than one agency defined in your database (e.g., your agency and the Sample Agency) and you want the combo box lists to display clients from all defined agencies, un-check the "Use the last bookmarked Agency record to filter find record lists," feature 9 from the Preferences / Features tab (see the indicated entry in Section 11.4, *Features*).

Client Report Block – The Client Report Block provides you with access to all reports available at the Client level. See Appendix A, *Sample Reports*, for examples of these reports and forms. As of the initial release of Version 8, the following Client level reports were available: Client Completion Report, Client Information Report/Form, NEAT/MHEA Data Collection Forms, and Client Surveys Report. Reports display information already gathered while Forms are blank forms to be used to gather the information. The NEAT and MHEA Data Collection forms may be printed with general client information pre-entered or completely blank. See Section 4.13, *The Report Block*, for assistance with the mechanics of using the Weatherization Assistant's Report Blocks. A method to create additional reports tailored to your needs and whose selection could be made in the report blocks has been made available. See Appendix B, *Weatherization Assistant Customized Reporting Feature Reference Document*, for more details.

If you have selected the third party photo browser check box, (feature 2) on the Preferences/ Features tab, a Photo Folder field will appear on your Client Information form just below the Dwelling data block. Use the Browse button to the right of this field to locate and select a location on your computer in which you have stored digital photos for this specific client. Once selected, this location will be displayed in the Photo Folder field and remain there for all subsequent visits to this client's data. Selecting the View button will present you with a photo browser in which you may view and edit these photos. See Section 13.1, *Digital Photos* for more information on viewing and editing photos. Note that the ability to store digital photos also exists at the Audit and Work Order levels. You should develop a consistent policy regarding where you store reference to your photos.

If you are utilizing the Graphic Information System (GIS), two un-editable fields, Latitude and Longitude, and a Map button will appear on the Client Information form just below the Occupants data block. If the address entered in the address entries on the Client Information form can be recognized by the system as a location, the fields will display the indicated data and the Map button will take you to a map showing this location. See Section 13.2, *Graphic Information System (GIS)* for more details.

The Checked Out To, Check In, and Check Out data items will appear on the Client Information form only if you have chosen to use the Check-in / Check-out feature of the Weatherization Assistant (see "Check-in / Check-out client records" in Section 11.4, *Features* as well as "Checking Clients In and Out" in Section 12.3, *Data Transfer - Import / Export via Database Files*). If the client you are currently referencing has been checked out, the User Name (see "User Name" in Section 5.2, *Contacts (Agency)*) of the user who checked out the record will appear in the Check Out To combo box field. If the client has been checked out, you may check the record back in by selecting the Check In button, regardless of who had previously checked the record out. Thus, if there are multiple users who may check records in and out, you will need to coordinate this practice.

You may either initialize the checking out of a record or change the user assigned to the check-out by using either the combo box list or the Check Out button. From the combo box list, you may chose any user to be recorded as the user having checked out the record, or, using the Check Out button, you may check the record out to the current user who is logged on, presumably yourself.

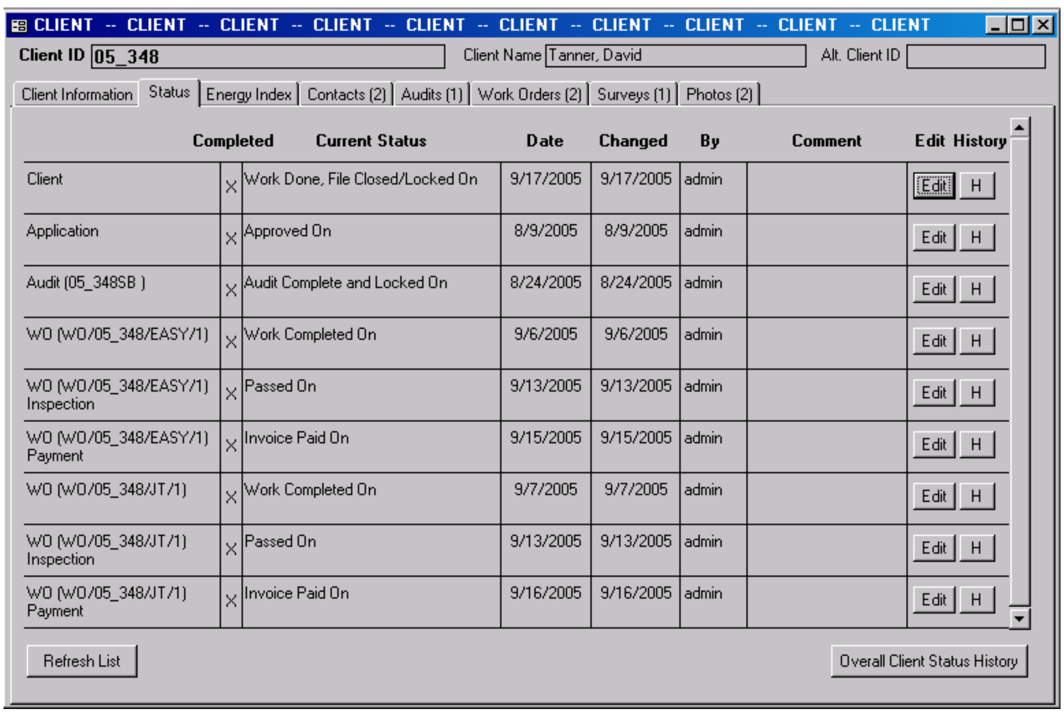
6.2 Status (Client)

If you use the status tracking feature of the Weatherization Assistant, you may view all of the current status category settings associated with a given client on the Status tab under the Client Main Menu item. These include the general and application client level status settings; the audit status; and the general, inspection, and payment work order level status settings. Entries will be visible for only those categories for which a status has been set or for which a setting is possible. Since each work order has separate status tracking for the overall work, inspections, and payment, you may need to scroll the form on this tab to see all the status settings if multiple work orders exist.

The Client level status settings available are:

General	Application
Active On	Received On
Work Done, File Closed/Locked On*	Eligibility Verified On
No Work Done, File Closed/Locked On*	Approved On*
File Locked On	Referred On*
Delayed On	Denied On*
Other	Delayed On
	Other

See the Status topics for Audit and Work Orders for settings available in these categories (sections 7.2, *Status (Audit)*, and 8.2, *Status (Work Order)*) or Section 13.3, *Status Tracking* for all possible status settings for all categories.



The Status form

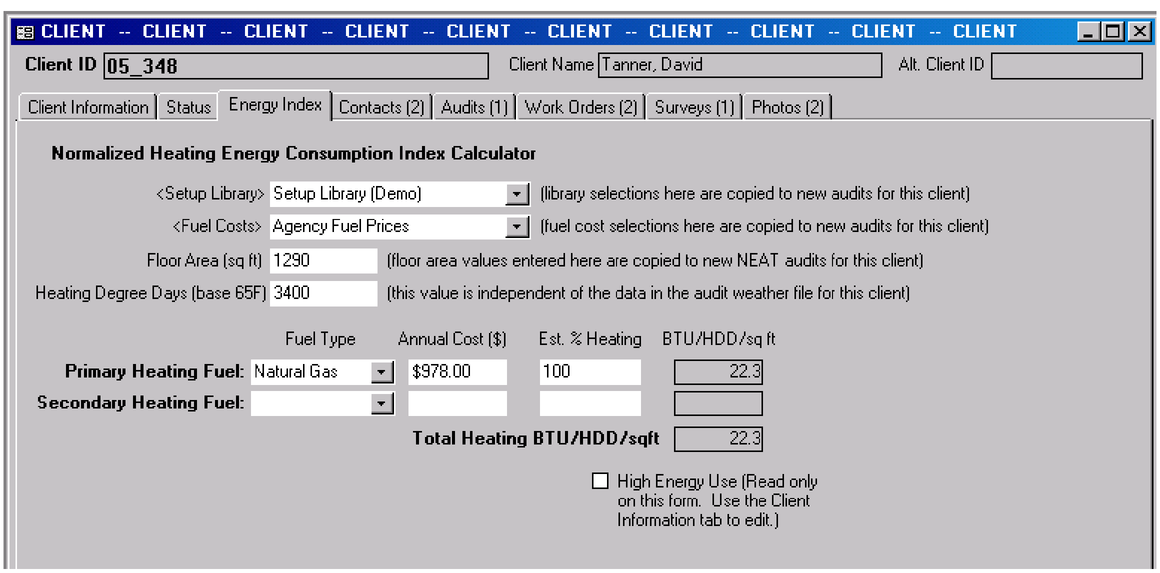
The Status tab displays not only the current status, but the date the status became effective, the date it was last changed, and who changed it. You are also shown any comment which has been appended to this current status setting. A Completed column on the form will display an asterisk (*) when a status setting indicates completion or closure of the activity associated with the status category.

Status settings are changed by selecting the Edit button in the row of the setting category you wish to change. You will be presented with the Status Editor form.

Choose the "H" button to see a history of all settings for a specific status category for the current client. Use the Refresh List button on the Status form to insure that any status changes which may have been made since opening the form are reflected in the display. The Overall Client Status History button at the bottom right of the Client Status form presents you with a Data Sheet View of all status categories for the client. Use of the Sort feature (see Section 4.8, *Data Sheet and Form Views of Records*) while viewing this form can insure entries are arranged in a desired order (e.g., by date). See Section 13.3, *Status Tracking* for additional information on the Status tabs and changing status settings.

6.3 Energy Index

The energy index tab is used to compute an overall energy index in units of BTU per heating degree day per square foot as a measure for determining the potential to save energy by weatherizing a client's dwelling. The value can be used to compare dwellings or possibly rank them in relation to their potential benefit from weatherization. Use of the form is totally optional. Since the form is based on heating degree days, it is of most use only in heating climates. The Energy Index calculation on this tab is independent of the detailed energy audit consumption estimates.



The Energy Index form

Below are brief comments related to each individual entry. All entries except those for the secondary fuel type are required if the program is to obtain an energy index. However, none are considered required for form completeness. Thus, you could enter partial data, then return at a later time to complete the data entry.

Setup Library – In order to translate an Annual Cost of energy in dollars into units of energy consumption, the program requires the fuel prices paid by the client. The program acquires these prices from the Fuel Cost tables in the Setup Library used for this client. In the Setup Library field, use the combo box list to choose the Setup Library which contains the Fuel Cost table appropriate for this client. The selection here will change the default Setup Library assigned to any new audit which may be initiated for this client. Of course the setting may be changed when the audit is performed, but there would then be the possibility that the Energy Index computed on this tab would no longer be applicable since the fuel prices used may differ from those used in the audit.

The program uses this selection of Setup Library in other optional features of the program related to the Client, for instance, in Work Orders. Thus, it is highly recommended that an entry be made here, whether or not any other entries are to be made under the Energy Index form.

Fuel Costs – Having selected the Setup Library used for this client in the field above, the Fuel Costs entry simply designates which fuel cost table within this setup library contains the fuel prices used by the client. Use the combo box list for this field to locate and select the entry. If you have only one Setup Library with a single fuel cost table, this will be a trivial choice. The selection here will change the default Fuel Costs assigned to any new audit which may be initiated for this client. Of course the setting may be changed when the audit is performed, but there would then be the possibility that the Energy Index computed on this tab would no longer be applicable since the fuel prices used may differ from those used in the audit.

Floor Area (sq ft) – Enter the floor area of the client's dwelling. This is living space floor area, not foot print area. Thus, a two story home with 1200 square feet per story would have a floor area of 2400 square feet. An entry here will automatically populate the Floor Area field in any future audit building description initiated for the home. This automatic entry may, however, be replaced when the audit is actually performed, if necessary.

Heating Degree Days (base 65F) – Enter the number of annual Heating Degree Days (HDD) at base 65 F for the location of the dwelling. The most accurate estimates of the energy index would result from using the annual degree days corresponding to the same period as the annual energy cost entered below. However, if these are not available, values used here for various locations should at least come from a consistent source. These values do not need to be those used by the Weatherization Assistant audit analyses. Those listed in the NEAT User's Manual are averages over a 30 year span and are actually Heating Degree Hours divided by 24, so they may differ somewhat from other sources. Other listings may be available through NOAA (the National Oceanic and Atmospheric Administration) or ASHRAE (The American Society of Heating, Refrigeration, and Air Conditioning Engineers).

The next three fields exist for both a Primary and a Secondary Heating Fuel. Enter information into the fields for the Secondary Heating Fuel only if more than one fuel is used to supply space heat to the dwelling, such as having an electric space heater in a bedroom when the remainder of the house is heated by a gas furnace.

Fuel Type – Select the fuel type which is being described as providing space heat.

Annual Cost ($) – Enter the dollars spent annually on fuel bills for the fuel specified. The entry may be taken from utility bills for a year prior to the audit, if easily obtainable. If you are using the audits' optional billing data adjustment features (see the individual NEAT and MHEA User's Manuals), these bills will have to be obtained eventually.

Est % Heating - Enter an estimate of the portion of the fuel specified that is used for space heating, as opposed to water heating, cooking, etc. Default values based on the fuel type will be automatically entered, but you should modify these if they are found unrepresentative of the actual conditions in the home.

Following entry of the above data, the program will compute and display the BTU/HDD/sqft contributions from the primary and secondary fuels and the combined value for both fuels. This latter value is the energy index for the home, a measure of the home's energy efficiency. To be of use, it should be compared to values from other homes, giving you a comparative feel for its energy use compared to the others. Note, however, that the energy index may be significantly affected by the life styles of the occupants, regardless of the home's construction characteristics, since it is based on actual energy consumption, .

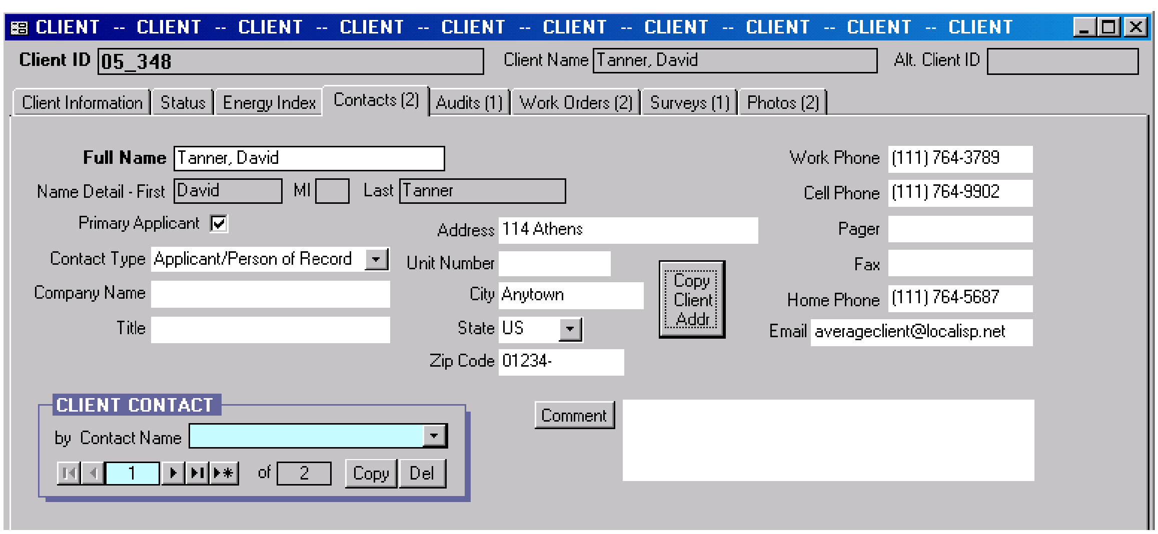
High Energy Use – This read-only check-box is a reminder of your entry on the Client Information tab for this same data item (see Section 6.1, *Client Information*). Although DOE's definition of this parameter is not directly linked to the Energy Index for a home, consistent use of the Energy Index and designation of homes as high energy users, will likely reveal some correlation.

6.4 Contacts (Client)

This tab allows you to enter information on all people associated with a client. The occupant requesting weatherization assistance will be at least one, if not the only, contact. However, others may include responsible relatives of elderly individuals who should be consulted, utility representatives from whom billing data is to be obtained, or suppliers of materials or work specific to this client. If the dwelling is a rental unit, the landlord or owner of the building could be one of the contacts. Multifamily buildings may have a superintendent or maintenance person assigned who could be a valuable contact.

As many contacts as are desired may be entered. Use the Client Contact Record Navigation Block at the lower left of the form to initiate new contacts or locate and access previously entered contacts. The form may be viewed and edited in Data Sheet View, providing a summary of all contacts already entered or allowing quick changes to multiple entries.

Client contacts are reported on the Client Completion Report, the Client Information Report, and the Client Survey Report, all accessible from the Report Block of the Client Main Menu item.



The Contacts form

Following are brief discussions of the individual entry fields and controls on the Client Contacts form:

<u>Full Name</u> – Enter the name of the contact. You may enter the name with either the given or surname first. However, if the surname is entered first, place a comma

between it and any given names which follow. The un-editable Name Detail fields will show you how the program sees the name you have entered. If you are entering information about a company, you likely still have a person who is your primary contact within that company. Enter that person's name. Then provide the company name in the Company Name field. The name must be unique. Required.

Primary Applicant – Indicate with this check box whether the individual being entered will be the primary name under which the application will be filed. Others may be associated with the application, but if paperwork were being filed by a person's name, this would be the name used. This is also the "Client Name" which will appear above the tabs on the Client Main Menu item when this particular client is accessed. Reports will also display this individual as the Client. Only one contact can be declared as the Primary Applicant for the client. If the check box is check for a particular contact, it will automatically be unchecked for whomever had previously been declared the Primary Applicant. Changing the contact designated as the Primary Applicant is not recommended when other windows displaying this information are open.

Contact Type – Select from the combo box list the Contact Type which best applies to the contact. The choices are: (1) Applicant/Person of Record, (2) Non-Applicant/Person of Record, (3) Other Contact for Applicant, (4) Landlord/Owner, (5) Superintendent, (6) Maintenance Staff, and (7) Other. Unless you wish to place a different interpretation on the terms, normally the "Primary Applicant," as indicated in the check box above, will be the "Applicant/Person of Record." The "Non-Applicant/Person of Record" is intended for use mainly with the small multifamily module to the program, to be introduced in a subsequent version of the Weatherization Assistant. It designates the occupant of a unit in a multifamily building who can have weatherization work performed on his unit only because the required fraction of other units in the building qualify. The entry will default to "Applicant/Person of Record" for a new contact record. Optional.

Company Name – If applicable, enter a Company Name associated with the contact. Remember, however, that the contacts being entered here are for a specific client, not for your agency in general. Thus, companies you use as suppliers or contractors would likely be more appropriately entered on the Contacts from under your Agency Main Menu item, unless this company supplied a specific need for this client alone. Optional.

Title – If applicable, enter a title associated with the client. This entry could alternately be used to enter a position or relation of the contact to a primary applicant. Optional.

Address, Unit Number, City, State, Zip Code – Enter the mailing address of the contact. If the address is the same as the address of the dwelling (entered on the Client Information form), use the "Copy Client Addr" button to copy this address from the Client Information form to this contact form. Optional.

Work, Cell, Pager, Fax, Home Phone – Enter any of the indicated phone numbers for the contact person. Optional.

E-Mail – Enter an e-mail address for the contact person. Only e-mail addresses of contacts listed under the Agency Main Menu item will be entered automatically in the Address Book of the e-mail feature of the Weatherization Assistant. See Section 13.4, *E-Mailing from Within Weatherization Assistant*. Optional.

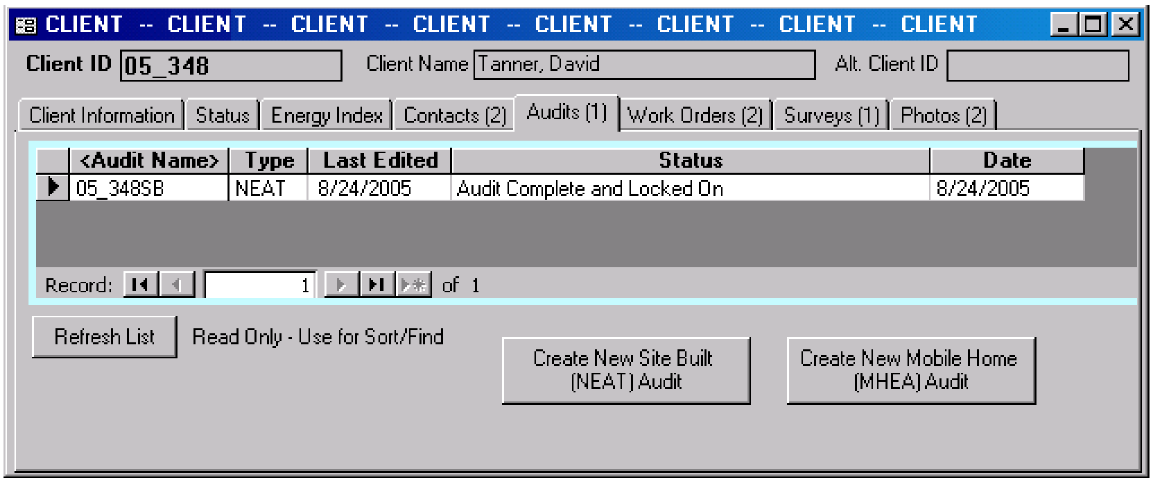
Comment – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. Client Contact Comments are displayed on the Client Completion, the Client Information, and the Client Surveys Reports. If a contact other than the Primary Applicant is considered the "Primary Contact" this might be entered here in the Comment block, perhaps in all capital letters to make it stand out on these reports and forms. Optional.

Client Contact Record Navigation Block – The Client Contact Record Navigation Block may be used to find and access existing client contacts or initiate new contacts. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks.

6.5 Audits (Client)

The Audits tab of the Client Main Menu item is a Navigation Data Sheet View similar to the Audits tab on the Agency Main Menu item. It displays all audit records associated with the current client. The tab is used primarily for navigation to the individual audit records. The light blue border of the data sheet on this tab is the visual indicator that this data sheet is used for navigation rather than data entry. Entries under column headings which are in angle brackets (<>) can be double clicked with the mouse to navigate to the associated record. Like any data sheet, the sorting can be changed by highlighting a column and pressing one of the sort buttons in the tool bar.

Normally there will be only one audit record for each client. However, the Weatherization Assistant does allow you to create and execute more than one audit per client. This might be useful if you desire to see the effect of some modification in the building description on the recommendations of the audit. Or, you may wish to update or correct an existing audit without loosing the original description. However, care must be taken to insure only one set of active work orders existed for the client, else confusion and double accounting of costs are likely to occur.



The Audits table

The Audit Name and Type entries are those given on the Audit Information form of either Audit Main Menu items (NEAT or MHEA) for each of the audits listed (see Section 7.1, *Audit Information*). The remaining data entry items and controls visible on the form are described below:

<u>Last Edited</u> – Gives the date (and time, if column in expanded) of the last change made to this audit record from the Audit Main Menu items tabs.

<u>Status</u> – Gives the latest audit status for each audit, as set on the Status tab under the Audit Main Menu item for each audit displayed (see Section 7.2, *Status (Audit)*).

<u>Date</u> – Gives the Date this latest status was set.

<u>Refresh</u> – With the possibility that any of the information displayed on the form and sub-form has been changed since the last time this form was opened, the Refresh button can be used to update the information displayed to reflect these changes.

<u>Create New Site Built (NEAT) / Mobile Home (MHEA) Audit</u> – Select these buttons if you wish to initiate a new NEAT or MHEA audit for this client. The program will create a new audit and provide an initial default audit name whether or not an existing audit has been entered for the client. The Client ID and Agency Name

and State fields on the new Audit will also be automatically entered, but all other information will be blank. If no other entries are made on this new Audit form, you may immediately exit the form without adding any further information. However, the audit will be recorded for future reference but with blank status. In this manner, you may enter multiple clients and initiate audits for them without actually having to enter the audit information at that time.

Following entry of any additional information on the newly created audit form, the program will begin examining for required data entries and not allow you to exit the form until you have provided these, or erased the added information by entering two consecutive [Esc] keys.

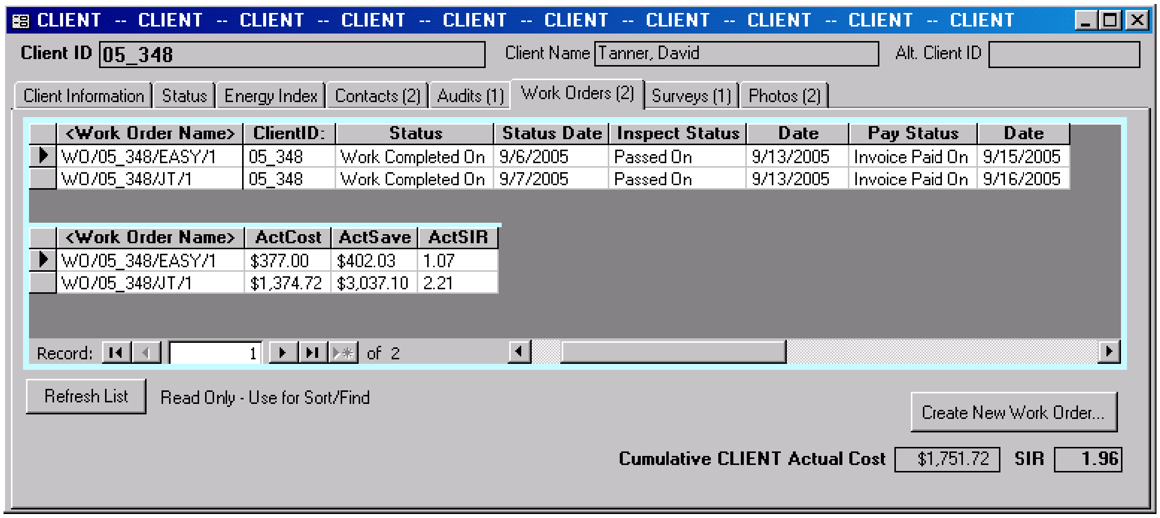
Some additional data items, normally hidden, may appear in the sub-form, which are random long integers generated by Access for its own record identification purposes. If these data columns become visible, they may have their column widths collapsed to zero in order to hide them.

6.6 Work Orders (Client)

The Work Orders tab of the Client Main Menu item is a Navigation Data Sheet View similar to the Work Orders tab under the Agency Main Menu item. It displays all work order records associated with the current client. The tab is used primarily for navigation to the individual work orders. The light blue border of the data sheet on this tab is the visual indicator that this data sheet is used for navigation rather than data entry. Entries under column headings which are in angle brackets (<>) can be double clicked with the mouse to navigate to the associated record. Like any data sheet, the sorting can be changed by highlighting a column and pressing one of the sort buttons in the tool bar.

Displayed on this form may be more than one work order for the client, if you have divided the work on a client's home into more than one work order, normally because more than one contractor is assigned the work. The work orders may have been generated either using the Measures tab on the Audit form (see "Create Work Orders" in Section 7.9, *Measures (Audit)*) or manually directly under the Work Orders Main Menu item (see "Work Order Record Navigation Block" under Section 8.1, *Work Order Information*).

The Work Order Name is the name associated with the work order, as prescribed when it was first generated. The remaining data entry items and controls visible on the form are described below. Note that you may need to use the horizontal scroll bar to display all fields.



The Work Orders table
Note: the table has been displayed wrapped since scrolling would normally be necessary to see all columns.

Last Edited – Gives the date (and time, if column is expanded) of the last change made to this work order record from the Work Order Main Menu item tabs or the date the work order was generated from the Measures tab of the Audit Main Menu item, if no other modifications have been made.

Status – There are three categories of Status specifications for a Work Order: a general status, an inspection status, and a payment status. Each status category has its own column in the Work Orders form, with corresponding dates each status was changed. The work order status' are changed under the Work Order Main Menu item for each individual work order (see Section 8.2, *Status (Work Order)*).

Date – Gives the Date this latest status was set for each work order status category.

ActCost – If any Actual Costs for the performance of the activities listed on a work order have been entered (see "Quantity (Actual)" and "Unit Cost (Actual)" under "The Materials/Labor Details Sub-Form" in Section 8.3, *Measures (Work Order)*), the total of these costs will be displayed in this column. This entry may not be of much significance until the work order status has been declared "Completed" (see Section 8.2, *Status (Work Order)*).

ActSave – If energy savings are associated with any of the activities included in a work order, this field will display the total actual life cycle savings (over the life of the measures) for all such activities in the work order. The actual savings reflects the "Actual/Estimated Adjustment Factors" imposed on the savings for the measure (see discussion of this topic in Section 8.3, *Measures (Work Order)*). This field may not be of interest on the work order level and may be "collapsed" by default. If not visible, double click your mouse while positioned just to the right of the line between the ActCost and ActSir column headers.

ActSIR – If energy savings are associated with any of the activities included in a work order and Actual Costs for these activities have also been entered, the ActSIR field will display the corresponding savings-to-investment (SIR) for the work order as a whole. The value is the ratio of the ActSave to the ActCost entries above. This entry may not be of much significance until the work order status has been declared "Completed" and all costs have been declared "Actual." (see Section 8.2, *Status (Work Order)*).

Refresh – With the possibility that any of the information displayed on the form and sub-form has been changed since the last time this form was opened, the Refresh button can be used to update the information displayed to reflect these changes.

Create New Work Order – Selecting this button will take you directly to the Work Order Information tab under the Work Order Main Menu item. The program will initiate a new work order for the client currently being accessed. A default Work Order name will be supplied together with the Client ID of the current client and the Agency Name and State of the agency assigned to that client. If an audit has been entered for the client, the name of the audit will also be automatically entered. However, this may be altered (if more than one audit has been performed for the client) or deleted, if the activities to be assigned this work order come from some source other than either the NEAT or MHEA audits (such as in the case of a priority list).

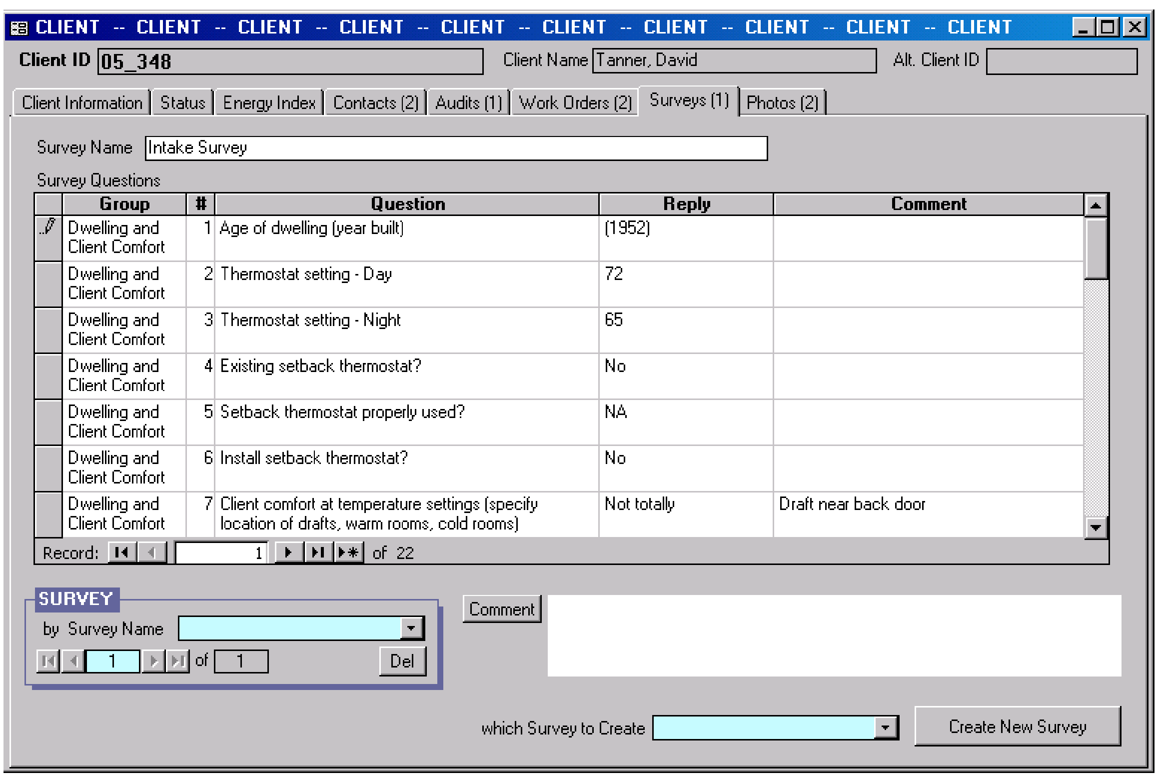
Cumulative CLIENT Actual Initial Cost – If Actual Costs (see "ActCost" above) are associated with any of the work orders for the currently accessed client, this un-editable field will add all of these costs together to give a cumulative cost for all work orders for the client. If accurately tracked, this entry would eventually equal the total actual costs of all work performed for a client.

Cumulative CLIENT Actual Initial SIR – This un-editable field will display an SIR for all work performed for the client from all work orders displayed on the Work Order tab. Actual Costs must have already been assigned to at least some of the activities of the work orders for the client (see "Quantity (Actual)" and "Unit Cost (Actual)" under "The Materials/Labor Details Sub-Form" in Section 8.3, *Measures (Work Order)*). The entry may not be of much significance until the work order status for all work orders associated with the client have been declared "Completed" (see Section 8.2, *Status (Work Order)*).

Some additional data items, normally hidden, may appear in the sub-form, which are random long integers generated by Access for its own record identification purposes. If these data columns become visible, they may have their column widths collapsed to zero in order to hide them.

6.7 Surveys (Client)

The Surveys tab under the Client Main Menu item is used to copy blank pre-defined surveys (see Section 5.4, "*Surveys (Agency)*") to the client record for completion during a client interview. You may associate as many pre-defined surveys to the client as you wish. A survey is associated with the client by first using the "which Survey to Create" combo box list to select the survey you wish to create, then selecting the "Create New Survey" button on the lower right of the form to actually create and display the blank survey. The Survey Name will appear in the field at the top of the form. Caution, the program will allow you to create more than one copy of the same survey for the same client, possibly creating confusion. Unwanted copies of surveys may be eliminated using the Del button on the Survey Record Navigation Block.



The Surveys form

Once a survey has been created for a client by copying it from the pre-defined surveys, it may be altered by adding, deleting, or modifying questions contained in it. This will not affect the pre-defined blank surveys defined under the Agency Main Menu item. You are even free to pre-define a blank survey for your agency, then copy it to any client and make a survey specific to the client by adding what ever question you like.

Use the abbreviated Record Navigation bar within the Survey Questions table to navigate to a specific question or create a new question. Delete a question by selecting the entire entry for the question (by clicking on the record selection box to the left of the question entry) then pressing your [Del] key. Enter the individual question replies as text entries in the fields indicated. Number replies are seen as text and cannot be used in arithmetic operations. Replies are limited to 50 characters or less. Comments related to each survey question have the same characteristics as those entered for the survey as a whole (see below). Access the Comment Editor for each survey question's comment field by double clicking on the field.

Use the Standard Survey Record Navigation Block to locate or delete entire existing surveys that are associated with the current client.

Enter any Comment which is applicable to the survey as a whole in the Comment block at the bottom right of the form. Comments may be entered directly in the comment field or you may select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. Client Survey Comments are displayed on the Client Surveys Report. Optional.

6.8 Photos (Client)

If you have selected the Pathname method of photo storage (Feature 1) on the Preferences/ Features tab, the Photos tab will appear on the Client form. From this tab, you may select, view, and edit digital photos for the specific client currently being referenced. See Section 13.1, *Digital Photos*, for more information on this feature. Note that the ability to reference digital photos also exists at the Audit and Work Order levels. You should develop a consistent policy regarding where you reference your photos.

Chapter 7

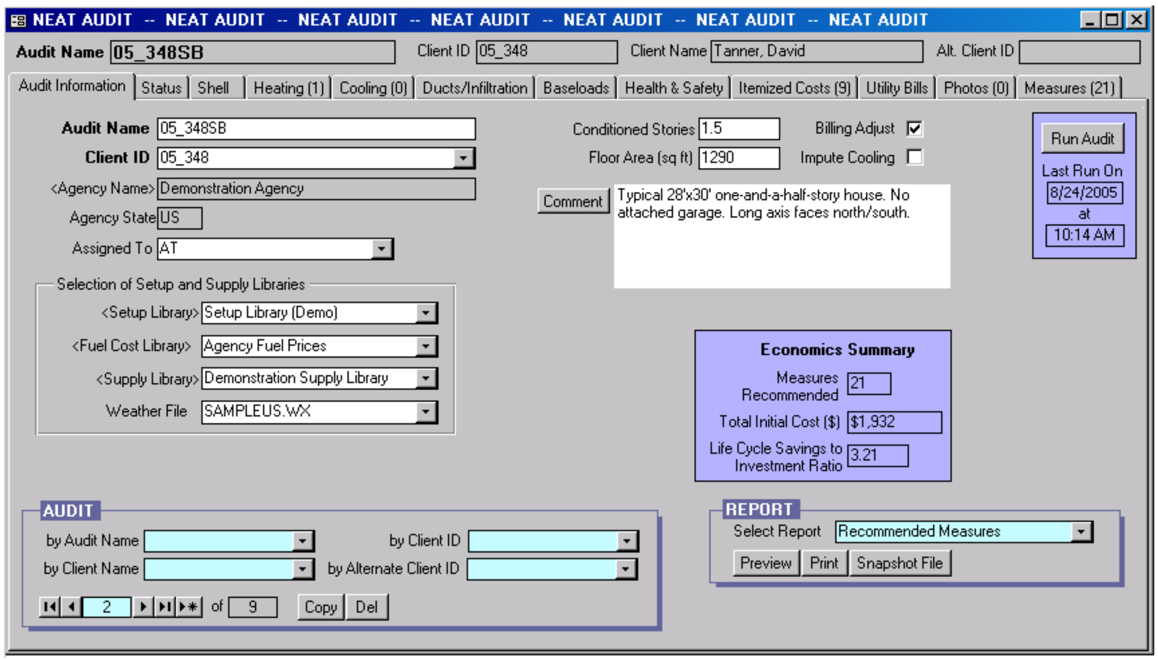
The primary purpose of the Weatherization Assistant is to make energy efficiency measure recommendations applicable to specific homes. This purpose is fulfilled by gathering audit information on each dwelling and entering the information into the program. This descriptive data on each dwelling is entered under one of the Energy Audits buttons from the program Main Menu. For Version 8 of the Weatherization Assistant, the audits available are NEAT for site built homes and MHEA for manufactured, or mobile, homes.

You may initiate a new audit for a previously entered client in either of two ways: (1) by selecting one of the Energy Audit buttons on the Main Menu, then selecting the new record button, ▸*, from the Audit Record Navigation Block (see Section 4.1, *Record Navigation*); or (2) selecting the Client button on the Main Menu, locating the client for which the audit is to be performed, selecting the Audit tab, and then clicking on either "Create New Site Built (NEAT) Audit" or "Create New Mobile Home (MHEA) Audit" (see Section 6.5, *Audits (Client)*), which ever is appropriate for this specific dwelling. Either method will take you to a Audit Information form for the respective audit type.

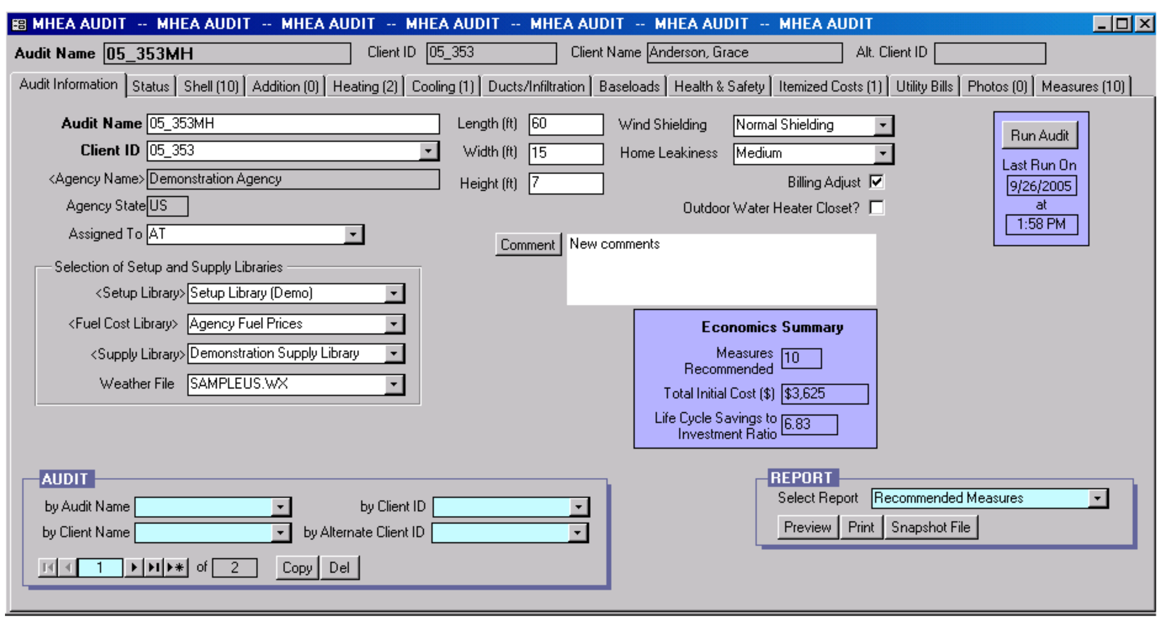
Since descriptive data for a site built home differs from that for a mobile home, most of the fields under these two Audit Main Menu items also differ. It is not the purpose of this manual to detail the home descriptive data necessary to describe each dwelling of these two types. See the existing NEAT and MHEA User's Manuals for this information. This manual will only describe the umbrella of features surrounding the audits themselves, which is common to both audit types. Specifically, common data entry items on the Audit Information tabs and data on the Status, Health and Safety, Photos, and Measures tabs will be described. In addition, some optional entries on the Heating tab and the Water Heaters form under the Baseloads tab will be briefly addressed. Since the Itemized Costs form for Version 8 is considerably different from former versions, it will also be covered in this manual.

7.1 Audit Information

This tab on the main NEAT and MHEA Audit forms is used to enter overall audit information about the house and what libraries to reference for non-house specific data. Data entry items and controls visible on the form and common to both NEAT and MHEA Audits are described below:



The Audit Information form (NEAT)



The Audit Information form (MHEA)

Audit Name – Some convention should be adopted to supply each audit with a unique Audit Name. Most likely, each client will have only one audit associated with it. However, the possibility of multiple audits for a client should be considered. Since the Client ID must be unique for each client, the name of the client’s audit might contain or somehow reference this Client ID. When first initiated, an audit will be given an Audit Name of the form "Audit (#)," where the "#" is a number forcing the name to be unique. You should replace this default name with a name of your choosing. Required.

Client ID – This field will display the Client ID of the client for whom the audit is being performed. If the audit has been initiated using the "Create New Site Built (NEAT) Audit" or "Create New Mobile Home (MHEA) Audit" buttons on the Audits tab of the Client Main Menu item, this field will automatically be filled with that client’s Client ID. If, the audit is initiated using the new record button, ▸*, in the Audit Record Navigation Block on the form itself, the Client ID will remain the same as the Client ID on the form prior to requesting the new audit. In this case, you may have to use the combo box list associated with the Client ID field to choose the correct client from those already in the database. When you do attempt to change the client, you will get a warning, since changing the client associated with an existing audit is not a normal operation. For a new audit, however, it is acceptable. The program simply does not know that this is a new audit. Required.

Agency Name / State – These un-editable fields display the Name and State of the Agency to which the Client whose house is being audited is assigned. The fields will be automatically filled in to correspond to the agency assigned to the Client whose audit is being performed, as displayed in the Client ID field immediately above. Changing the Client ID will immediately update the Agency Name and State, if needed.

Assigned To – Use the combo box list associated with this field to assign the Auditor in your agency who will be responsible for the dwelling. The list will contain only those contacts declared as Auditors on the Contacts tab of the Agency Main Menu item corresponding to the agency responsible for the client. Required.

Selection of Setup and Supply Libraries Data Block

The following four entries tell the program what libraries to reference for non-house specific data used by the audit.

Setup Library – Select the Setup Library from which the audit is to take measure costs, candidate measure information, and other key parameters. See Chapter 9, *Setup*, for additional information on the contents of the Setup Library. When you install the Weatherization Assistant on your computer, the installation routine will automatically copy the default setup library to a library under the "Your Agency Name" agency (which should have been renamed to be the name of your agency). Thus, for this agency, there will be at least one Setup Library to choose from. You may never have need for more than one Setup Library, making this selection a trivial one. However, see Chapter 9 for more information on the use of multiple setup libraries and the need to tailor the Setup Library copied from the default library to reflect your local conditions. Required.

Fuel Cost Library – Select from the Fuel Cost Library combo box the entry which contains the fuel costs to be used by the audit in calculating the dollar value of energy savings. A Fuel Cost Library is a subset of data under the Setup Library. Thus, only those fuel cost libraries under the chosen Setup Library will be available to choose from. If you change the Setup Library to be used by the audit, the Fuel Cost Library field will be automatically deleted, indicating the need to choose another entry, from the new Setup Library. If you have more than one utility supplying a particular fuel in your agency's boundaries, you may need to have more than one fuel cost library associated with your setup library. See Chapter 9, *Setup*, for more details. Required.

Supply Library – Although the Supply Library is used primarily in applying the optional feature of tracking your inventory (applied under Work Orders), the audit uses entries in the Supply Library for replacement refrigerators and water heaters. When you install the Weatherization Assistant on your computer, the installation routine will automatically provide you with an empty supply library. This empty supply library is sufficient to run the audit, although you will have no replacement refrigerators or water heaters to choose from unless you populate the supply library with these items. Unless an unusual situation arises, an agency will probably have only a single supply library. Multiple libraries would make tracking of inventory difficult because manual addition of the supplies in each supply library would be necessary to derive the total items available in the agency's inventory. See Chapter 10, *Supplies*, for more information on supply libraries. Required.

Weather File – The audit must be told what climatic data to use in estimating the energy consumptions for the dwelling. Choose one of the approximately 220 weather cities listed in the combo box. They are listed in alphabetical order, first by state, then by city. You may wish to consider not only those cities in your state, but also cities which lie in another state near a border with your state. Required.

Comment – Audit comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Audit Comment is displayed on the Recommended Measures Report and the Input Report available from the Audit Report Block. You may also wish to include the comment in a user-designed report. Optional.

Economics Summary Block – For audits which have already had NEAT or MHEA produce recommendations, the Economics Summary block of data will display a summary of these recommendations: the number of Measures Recommended, the Total Initial Cost of these recommendations (using the audit's estimated measure costs prior to any modifications made in work orders to reflect actual costs), and the Life Cycle Savings to Investment Ratio (SIR) for all the recommended work on the house. If the audit has not yet been run on the house, the number of Measures Recommended will be "0" and the other fields will be blank. All of the fields within the Economics Summary block are un-editable.

Run Audit Button / Block – After completely describing the house to the audit with data entered under the tabs visible on the main audit forms, use the "Run Audit" button to have the audit perform its calculations and produce energy efficiency measure recommendations for the home. Within the same data block as the Run Audit button are un-editable fields showing the date and time the currently accessed audit was "Last Run On." If the audit has not yet been run for this specific house description, the date field will display "Not Run." An audit on a house may be run any number of times, but the recommendations from any previous runs will be overwritten. If you wish to run an audit on a house again, but save the recommendations from a previous audit on the same house, use the "Copy" button in the Audit Record Navigation Block in the lower left corner of the form to copy the house description. Then, give the new house description a new Audit Name (possibly a variant of the original name), make any modifications to the house description desired, then use the Run Audit button to produce another set of recommendations. The Run Button is available from all Audit forms and may be activated from any of these forms once it has been decided that the building description is complete.

Audit Record Navigation Block – The Record Navigation block in the lower left corner of the form allows you to find, copy, delete, and navigate to existing audits in your database or to create new audits. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. The combo box lists will display only the audits associated with the Agency currently selected (bookmarked) on the Agency Information tab under the Agency Main Menu item. Normally the agency selected on this tab is your agency, so the combo box lists will display only your agency's audits. If you have more than one agency defined in your database (e.g., your agency and the Sample Agency) and you want the combo box lists to display audits from all defined agencies, un-check the "Use the last bookmarked Agency record to filter find record lists," feature 9 from the Preferences / Features tab (see the indicated top in Section 11.4, *Features*).

Audit Report Block – The Audit Report Block located in the lower right corner of the NEAT and MHEA Audit Information forms allows access to the various reports available in the audit: (1) Recommended Measures, available only after an audit has been "Run;" (2) Input Report, summarizing all building description data entered in the audit as well as a summary of the Client data; (3) Heating System Summary, extracting only the Heating System information supplied to the audit; (4) Pressure Diagnostics Report / Form; and (5) the Health and Safety Summary, available if any health and safety issues were identified on any of the audit forms. Appendix A, *Sample Reports*, contains examples of these reports and forms. See Section 4.13, *The Report Block*, for the mechanics of using the Weatherization Assistant's Report Blocks.

If you have selected the third party photo browser check box (Feature 2) on the Preferences/ Features tab, a Photo Folder field will appear on your Audit Information form just below the "Selection of Setup and Supply Libraries" data block. Use the Browse button to the right of this field to locate and select a location on your computer in which you have stored digital photos for this specific audit. Once selected, this location will be displayed in the Photo Folder field and remain there for all subsequent visits to this audit's data. Selecting the View button will present you with a photo browser in which you may view and edit these photos. See Section 13.1, *Digital Photos* for more information on viewing and editing photos. Note that the ability to store digital photos also exists at the Client level. You should develop a consistent policy regarding where you store reference to your photos.

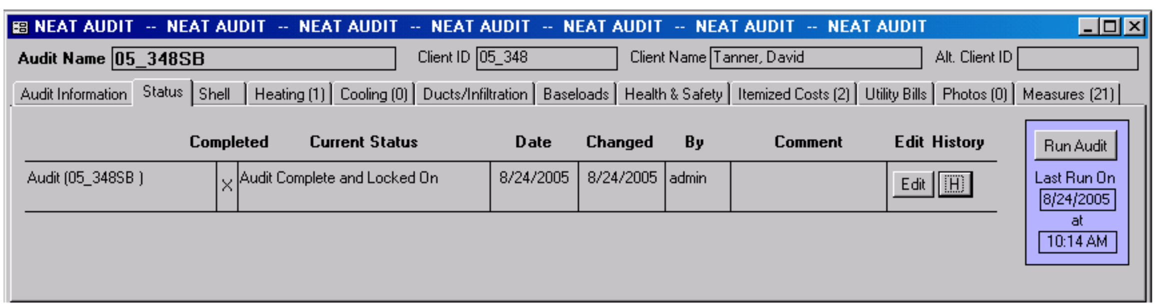
7.2 Status (Audit)

The Status tab under the Audit Main Menu item allows you to view the status of the audit currently being accessed. The setting and tracking of statuses is an optional feature in the Weatherization Assistant.

The Audit level status settings available are:

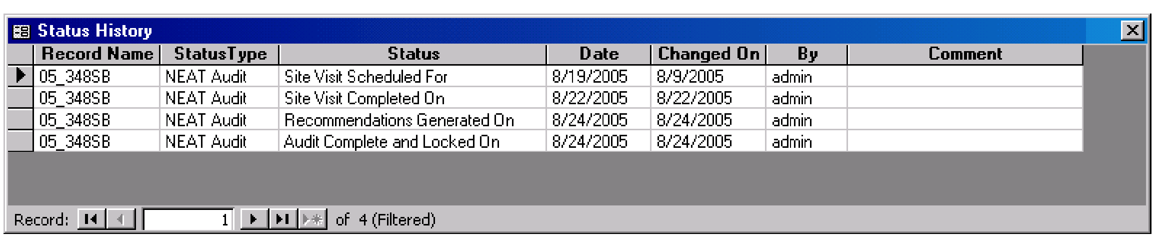
Audit
Site Visit Scheduled For
Site Visit Completed On
Billing Data Collected On
Recommendations Generated On
Audit Complete and Locked On*
Walk Away by Auditor On*
Delayed On
Denied On
Other

The Status tab displays not only the current status of the audit, but the date the status became effective, the date it was last changed, and who changed it. You are also shown any comment which has been appended to this current status setting. A Completed column on the form will display an asterisk (*) when a status setting indicates completion or closure of the activity associated with the status category. For the audit category, this corresponds to those settings followed by the asterisk in the table above.



The Status form

Status settings are changed by selecting the Edit button at the right of the row indicating the current status for the audit. You will be presented with the Status Editor form. Choose the "H" button to see a history of all settings for the current audit.



Status History

Record Name	StatusType	Status	Date	Changed On	By	Comment
05_348SB	NEAT Audit	Site Visit Scheduled For	8/19/2005	8/9/2005	admin	
05_348SB	NEAT Audit	Site Visit Completed On	8/22/2005	8/22/2005	admin	
05_348SB	NEAT Audit	Recommendations Generated On	8/24/2005	8/24/2005	admin	
05_348SB	NEAT Audit	Audit Complete and Locked On	8/24/2005	8/24/2005	admin	

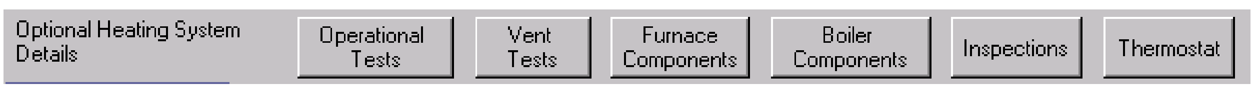
Record: 1 of 4 (Filtered)

The Status History table

See Section 13.3, *Status Tracking* for additional information on the Status tabs and changing status settings.

7.3 Optional Entries under the Heating Form

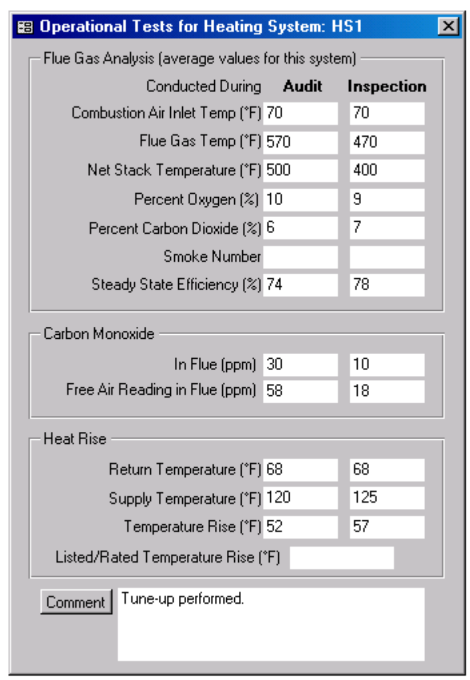
Version 8 of the Weatherization Assistant has added an optional capability of documenting a relatively extensive number of heating system observations which may be encountered during an audit of the dwelling. Some of these items constitute potential health and safety concerns. These details are accessed from buttons lying to the right of the "Optional Heating System Details" title at the bottom of the Heating form under the Audit Main Menu item. You must complete the description of the existing heating system before accessing these optional details. Not all buttons will be applicable to the heating system described on the Heating form. No attempt is made in this manual to describe correct procedures for obtaining the measurements or performing the inspections. You should refer to literature on standard HVAC practices or consult with a qualified HVAC contractor.



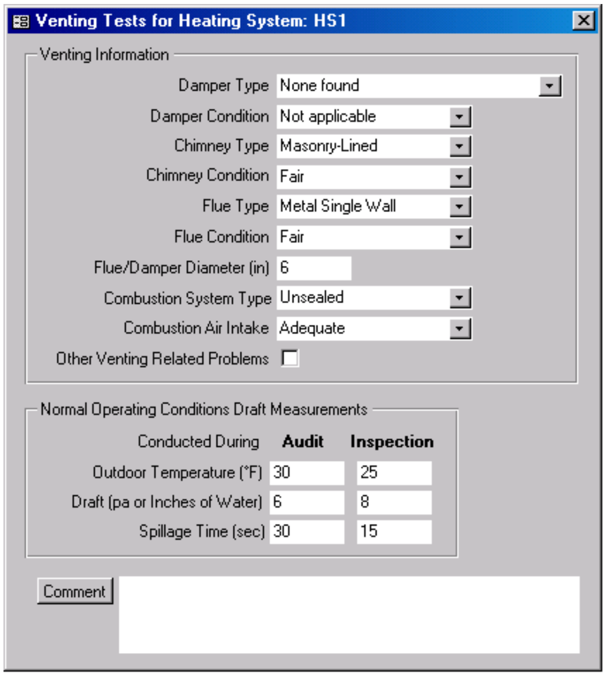
Optional Heating System Details - tests, measurements, and inspections

A summary of the items contained under each of the buttons is given below. Each form allows addition of an extended comment if necessary. Close each form using the customary Windows X box in the upper right corner. Each form must be closed before any other form can be accessed.

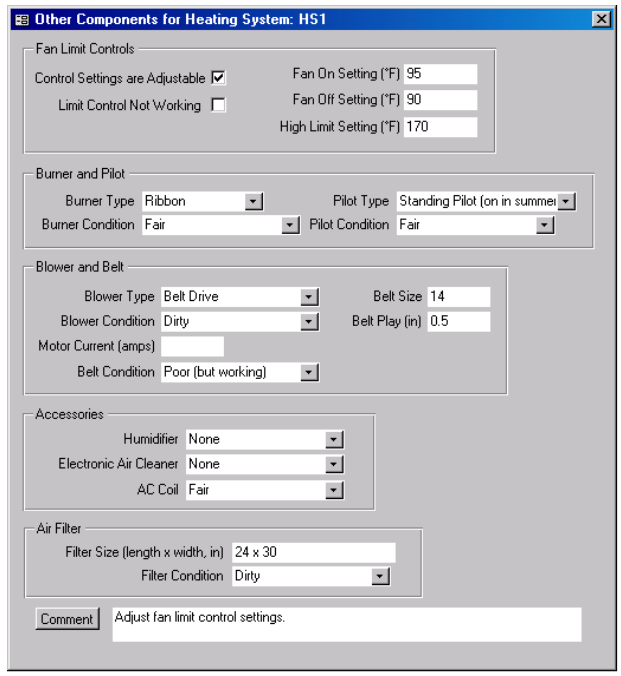
<u>Operational Tests</u> – This form allows recording information resulting from three measurement procedures: (1) flue gas analysis, (2) carbon monoxide measurements, and (3) the heat rise across the heat exchanger. The form allows recording of these measurements before and after work has been performed – "Conducted During Audit" and "Conducted During Inspection," respectively.



Operational Tests form for heating systems



Vent Tests form for heating systems

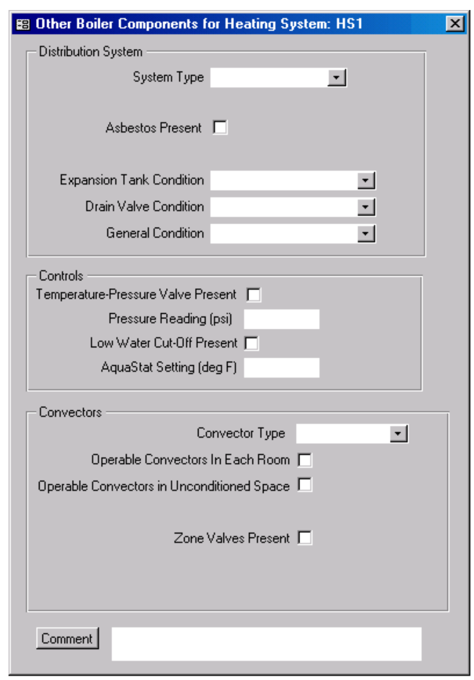


Furnace Components

Vent Tests – Information recorded under the Vent Tests button pertain to the characteristics of the flue and damper as well as before and after draft measurements on the flue associated with the heating system.

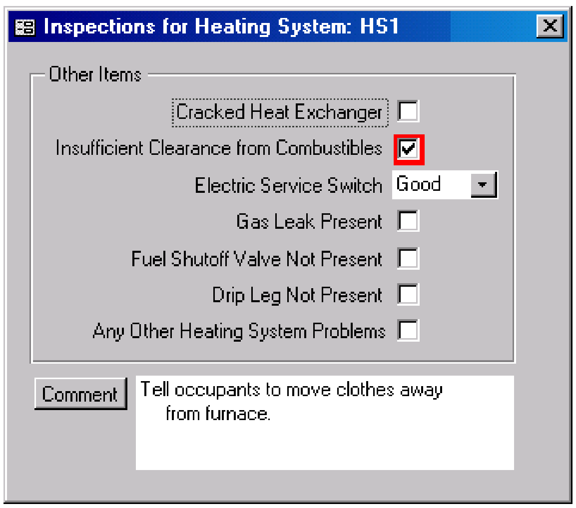
Furnace Components – This form allows entry of characteristics for various furnace components including the fan limit controls, burner, pilot, blower, belts, air filter, and accessories (humidifier, air cleaner, and air-conditioner coil).

Boiler Components – If the heating system is a boiler, this tab allows description of the boiler type, its overall condition, and the condition of the expansion tank and drain valve. Additional information can be entered describing the associated controls and convectors. The presence of asbestos associated with the boiler constitutes a potential hazard and may also be noted. See the

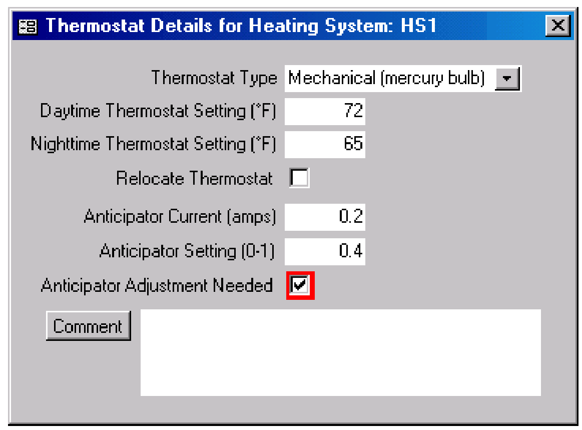


Boiler Components

description under Section 7.6, *Health and Safety*, on how the Weatherization Assistance handles health and safety items.



Inspections for heating systems



Thermostat Details

Inspections – This form contains mostly check boxes identifying potential hazards associated with the heating system, such as a cracked heat exchanger, insufficient clearances, gas leaks, etc. See the description under Section 7.6, *Health and Safety*, on how the Weatherization Assistance handles health and safety items.

Thermostat - Characteristics associated with the thermostat used by the heating system are entered on this form, including its type, set points, and anticipator settings.

7.4 Optional Entries under the Ducts/Infiltration Form

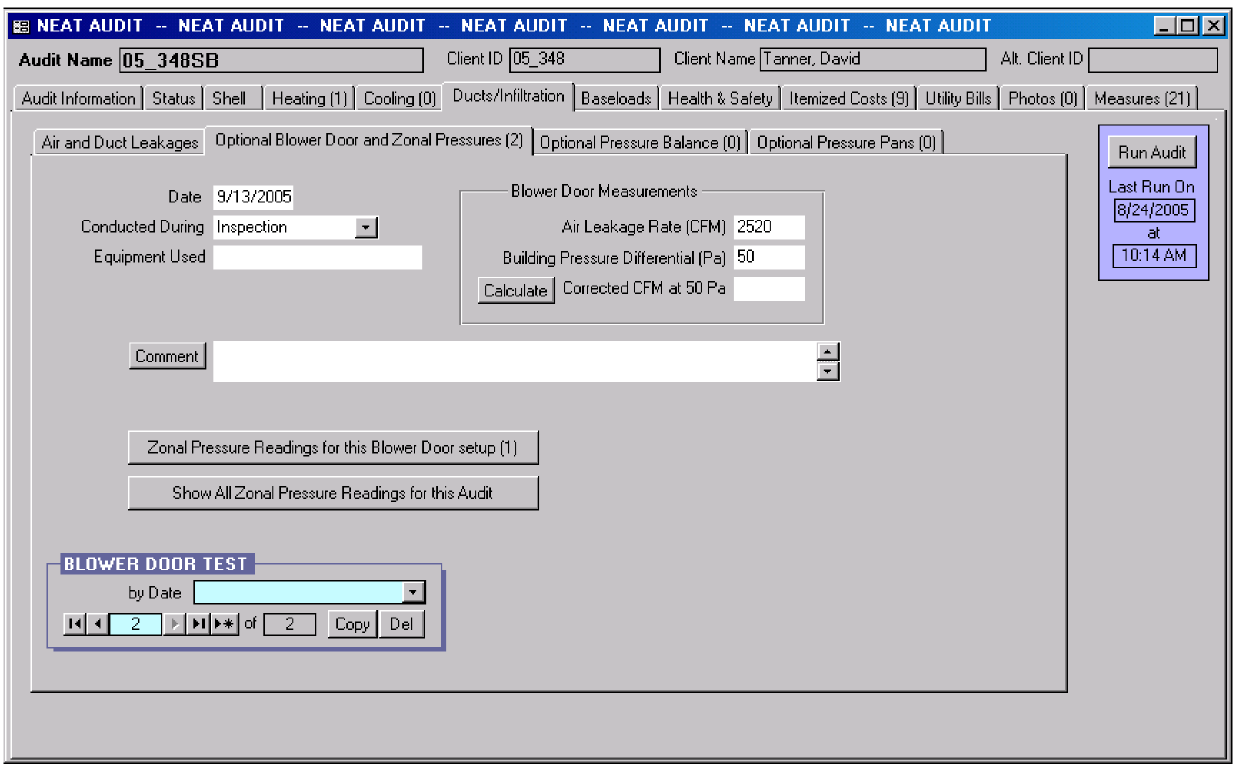
Air and duct leakage measurements used by the NEAT and MHEA audits are entered on the "Air and Duct Leakages" sub-tab located under the "Ducts/Infiltration" tab of these audits. These data include whole house blower-door readings before and after retrofit as well as other blower-door and duct measurements if the Evaluate Duct Sealing check-box is selected. See the respective users manuals of these audits for more information on these entries.

Additional blower-door-related readings may be taken for diagnostic purposes. These optional readings may be recorded under three additional sub-tabs under the "Ducts/Infiltration" tab: "Optional Blower Door and Zonal Pressures," "Optional

Pressure Balance," and "Optional Pressure Pans." The data which may be recorded under each of these sub-tabs will be discussed briefly below.

Optional Blower Door and Zonal Pressures

Blower-door readings other than those used by the audits may be taken to measure the effects of various activities on the infiltration rate (e.g., dense pack insulation installation), during an inspection of the work, or at other times. This sub-tab allows these additional blower-door readings to be recorded as well as zonal pressure readings which might also be taken at the same time. Note that multiple records of data may be entered accommodating any number of sets of readings. All of the entries are optional.



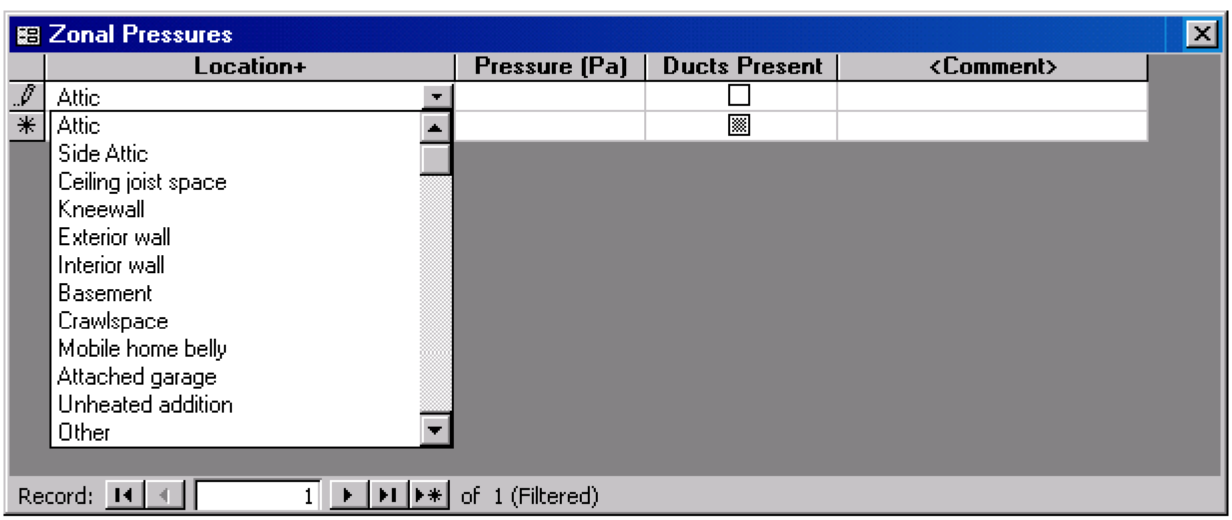
Optional Blower Door and Zonal Pressures sub-form

Entries on this form include a date on which the blower-door readings were taken, the occasion during which they were taken, and the equipment used. The "Conducted During" comb-box items are: "Audit," "Pre-Installation," "During Installation," "Post-Installation," "Inspection," and "Other."

The "Air Leakage Rate (CFM)" and "Building [to outside] Pressure Differential (Pa)" are recorded in the "Blower Door Measurements" block on the form. If the pressure differential is other than 50 Pascal, selecting the "Calculate" button will automatically apply the "Can't Reach 50" factor to provide you with a CFM at 50 Pascal in the adjoining field.

If "Audit" has been selected in the "Conducted During" combo-box, you will be asked on exiting the form if you wish to overwrite any value which might already exist in the "Pre Infiltration Reduction" fields on the "Air and Duct Leakages" form—the values used by the audits in computing energy savings from infiltration reduction efforts—with the leakage rates just entered. Choose "OK" to copy the data to the "Air and Duct Leakages" form or "Cancel" to reject the offer. Data on the "Optional Blower Door and Zonal Pressures" sub-form will be unaffected, regardless of your choice.

Zonal pressures are pressure differences between the main part of the house where the blower-door has been installed and various zones of the house, such as attics, basements, attached garages, etc. These measurements may be made in conjunction with a blower-door measurement for a variety of reasons, such as to help identify the possible location of leakage sites, to locate where the functioning air barrier is, or to identify potential health and safety problems associated with a combustion appliance.



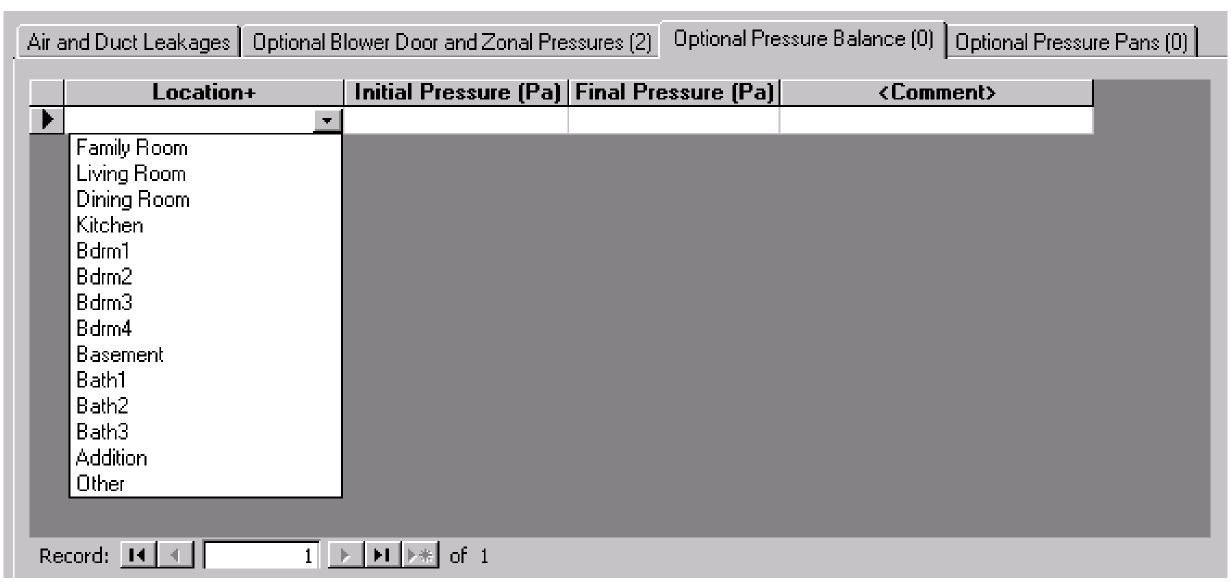
Zonal Pressures form

Zonal pressure readings associated with a specific blower-door setup can be recorded by selecting the "Zonal Pressure Readings for this Blower Door setup" button. This will take you to the Zonal Pressures form in which the readings may be entered. On this form, you may enter the Location of the zone using the choices in the combo-box list or by entering a location of your own if none of the choices meet your needs. Enter the Pressure differential found, in Pascal, and whether any ducts are present in the zone. You may also enter any comment.

Selecting the "Show All Zonal Pressure Readings for this Audit" button will display all zonal pressure readings from all blower-door setups for the audit. The form is the same as the Zonal Pressures form except for an additional column designating your selection of "Conducted During" for each setup. Entries may be altered when viewed from this form.

Optional Pressure Balance

When the air handler of a central forced air furnace or air-conditioner is on, it provides conditioned air to rooms throughout a house. The air that is supplied is intended to be returned to the furnace or air-conditioner through the return registers. If supply air is blocked from reaching a return, pressure differences can be created between the space and the location of the return register(s). This can hinder the supply air from being delivered to the space as well as create a negative pressure in the remainder of the house, increasing infiltration.



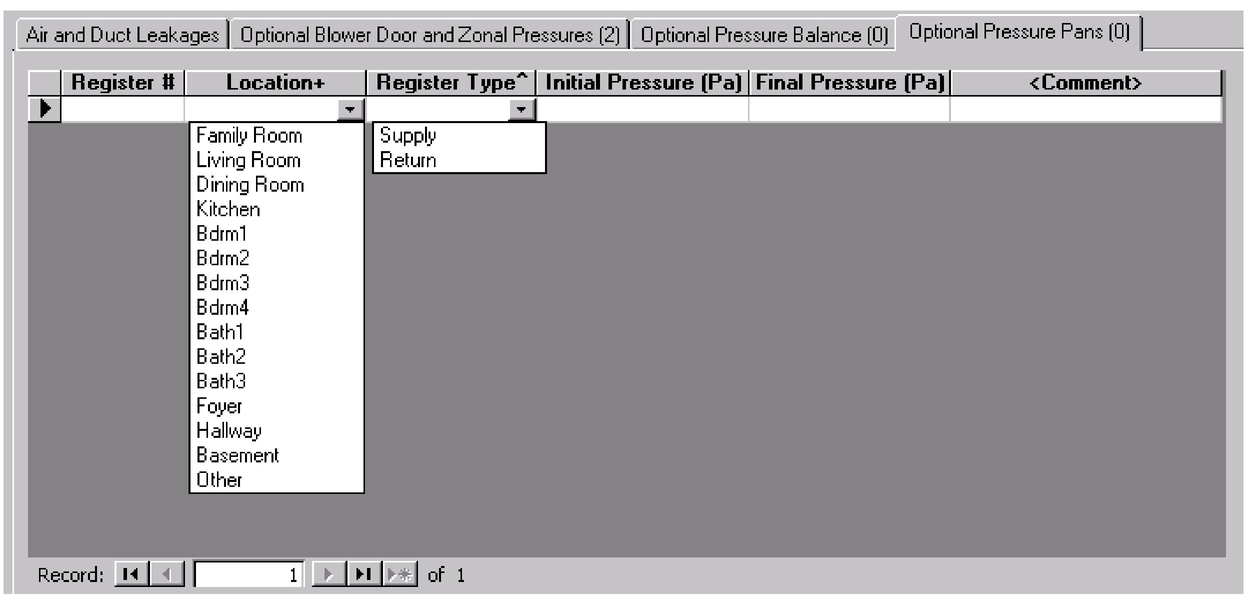
Optional Pressure Balance form

The Optional Pressure Balance form allows you to record pressure differentials between various rooms of the house and the main body of the house (where the return registers exist). The measurements are taken with the air handler operating. The measurements do not involve use of a blower-door.

Enter each Location or room using the choices in the combo-box list or by entering a location of your own if none of the choices meet your needs. Enter the Pressure differential, in Pascal, found, between the room and the location where the return registers exist. Space is provided for you to enter this pressure differential both before and after any efforts to balance the pressure, such as undercutting a door. Comments may be entered for each entry.

Optional Pressure Pan

Pressure pan measurements are taken with a home depressurized to 50 Pascal using a blower-door. A pressure pan which fits snugly over a register and attached to a digital manometer is used to measure the pressure differential at each supply or return register with respect to the home. No pressure difference indicates that the duct leading to the register is at the same pressure as the house and that little or no leaks to the outside exist in that branch of the ducts.



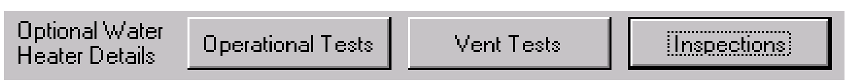
Optional Pressure Pans form

Enter an optional Register # to uniquely identify the register, possibly referenced in a drawing. Then enter the room in which the register is located using the choices in the "Location" combo-box list or by entering a location of your own if none of the choices meet your needs. Next, identify the register as Supply or

Return. Enter the Pressure differential, in Pascal, found, between the register and the home. Space is provided for you to enter this pressure differential both before and after any efforts to seal the ducts. Comments may be entered for each entry.

7.5 Optional Entries under the Baseloads Water Heaters Form

Similar to the feature described above for heating systems, the Water Heaters form under Baseloads also has an optional capability of documenting observations associated with the water heater which may be encountered during the audit. Some of these items may also constitute potential health and safety concerns. These details are accessed from buttons lying to the right of the "Optional Water Heater Details" title at the bottom of the form. You must complete the description of the existing water heater before accessing these optional details. Not all items under these buttons may be applicable to the specific water heater described. No attempt is made in this manual to describe correct procedures for obtaining the measurements or performing the inspections. You should refer to literature on standard HVAC or plumbing practices or consult with a qualified plumber.

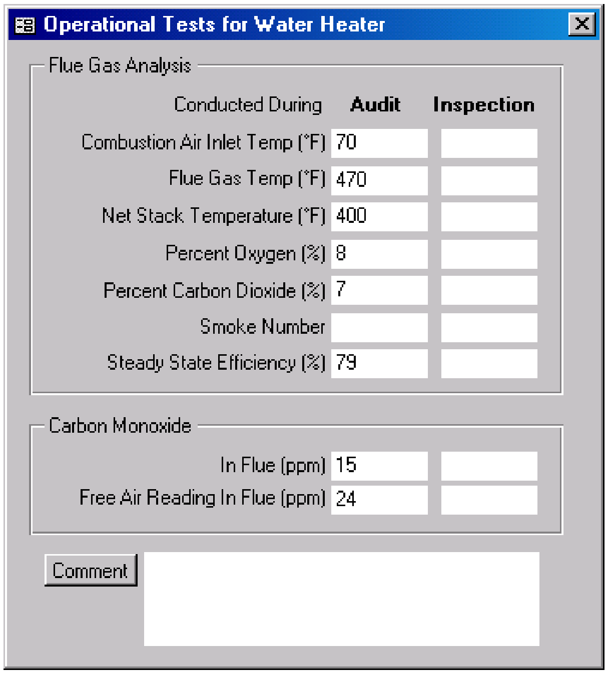


Optional Water Heater Details - tests, measurements, and inspections

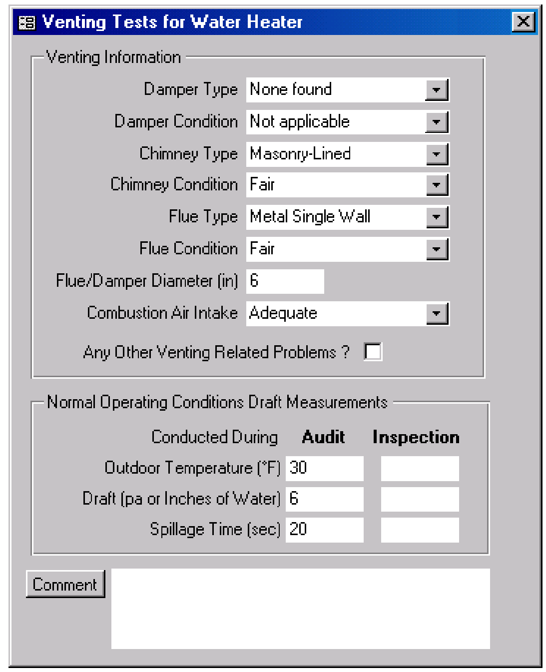
A summary of the items contained under each of the buttons is given below. Each form allows addition of an extended comment if necessary. Close each form using the customary Windows X box in the upper right corner. Each form must be closed before any other form can be accessed.

Operational Tests – This form allows recording information resulting from flue gas analysis and carbon monoxide measurements performed in association with the water heater. The form allows recording of these measurements before and after work has been performed –"Conducted During Audit" and "Conducted During Inspection," respectively.

Vent Tests – The same Vent Tests form is used for both the Heating System and the Water Heater. Information recorded includes characteristics of the flue and damper as well as before and after draft measurements on the flue associated with the water heater.

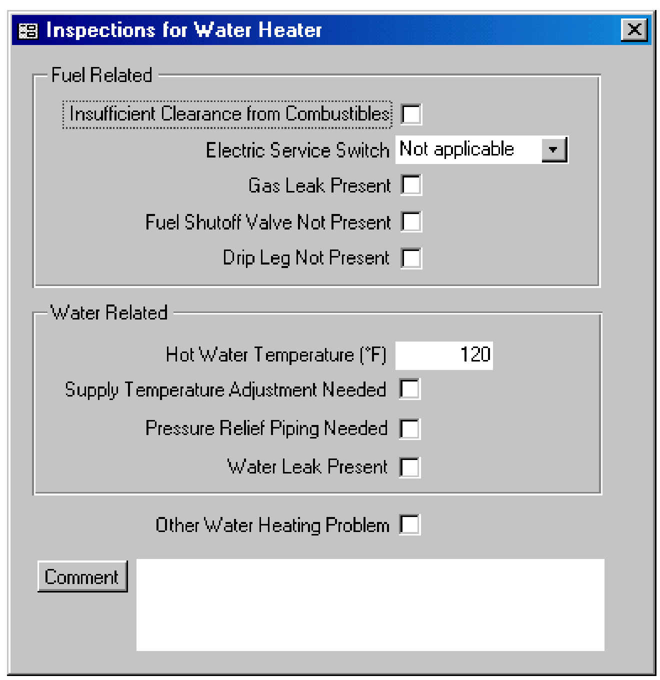


Operational Tests for water heaters



Vent Tests for water heaters

<u>Inspections</u> – This form contains mostly check boxes identifying potential hazards associated with the water heater. Fuel related items include insufficient clearances, gas leaks, and lack of a fuel shut off. Related to the water itself are check boxes regarding the water temperature, pressure relief, and presence of leaks. See the description under Section 7.6, *Health and Safety*, on how the Weatherization Assistance handles health and safety items.

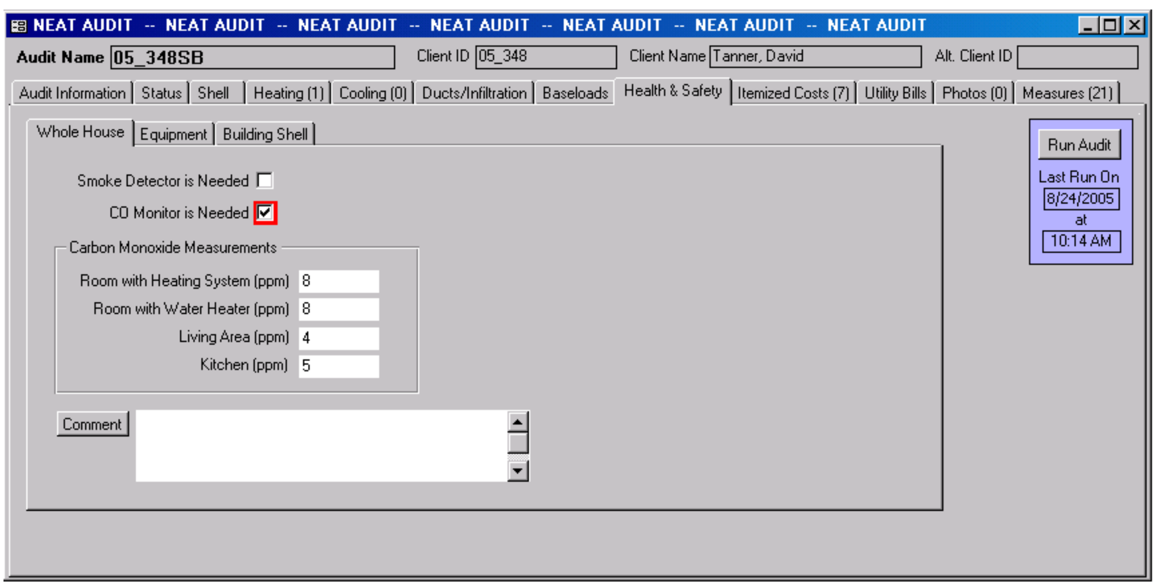


Inspections for water heaters

7.6 Health and Safety

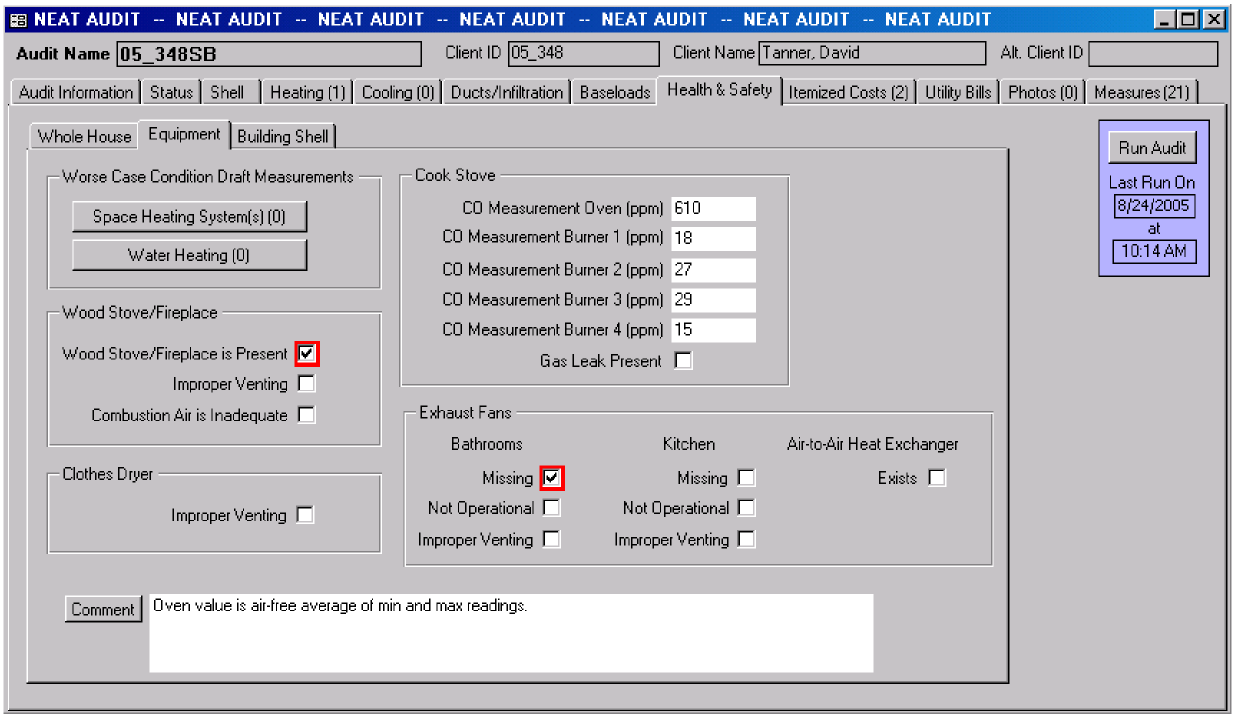
In addition to the potential health and safety hazards which can be identified under the Heating and Water Heater tabs, the Health & Safety tab permits identification and description of additional safety concerns. These additional safety related tests are divided into three categories: Whole House, Equipment, and Building Shell. Each will be discussed separately below. Each form also provides the opportunity to record extended comments. In addition, the Weatherization Assistant's extended handling of health and safety issues will be discussed below. This discussion applies to similar issues and hazards which may have been identified under the Heating or Water Heater tabs.

Whole House – This form allows the need for smoke or CO detectors to be identified as well as carbon monoxide concentrations in various rooms of the home to be recorded.



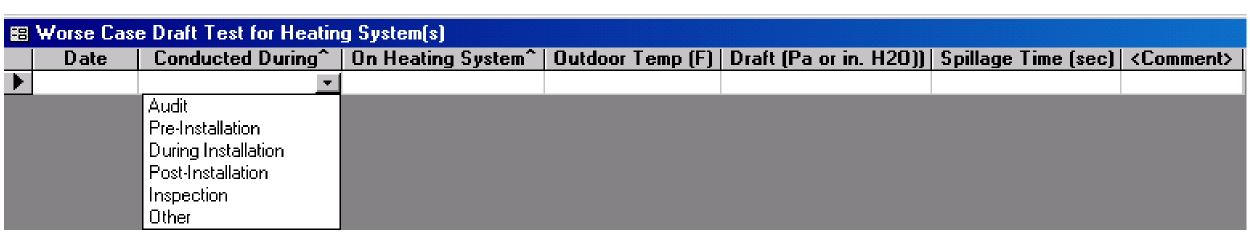
Health & Safety - Whole House

Equipment – This form is divided into data blocks addressing (1) Worse Case Condition Draft Measurements (for heating systems and water heater), (2) Wood Stove/Fireplace, (3) Clothes Dryer, (4) Cook Stove, and (5) Exhaust Fans and Heat Exchanger.



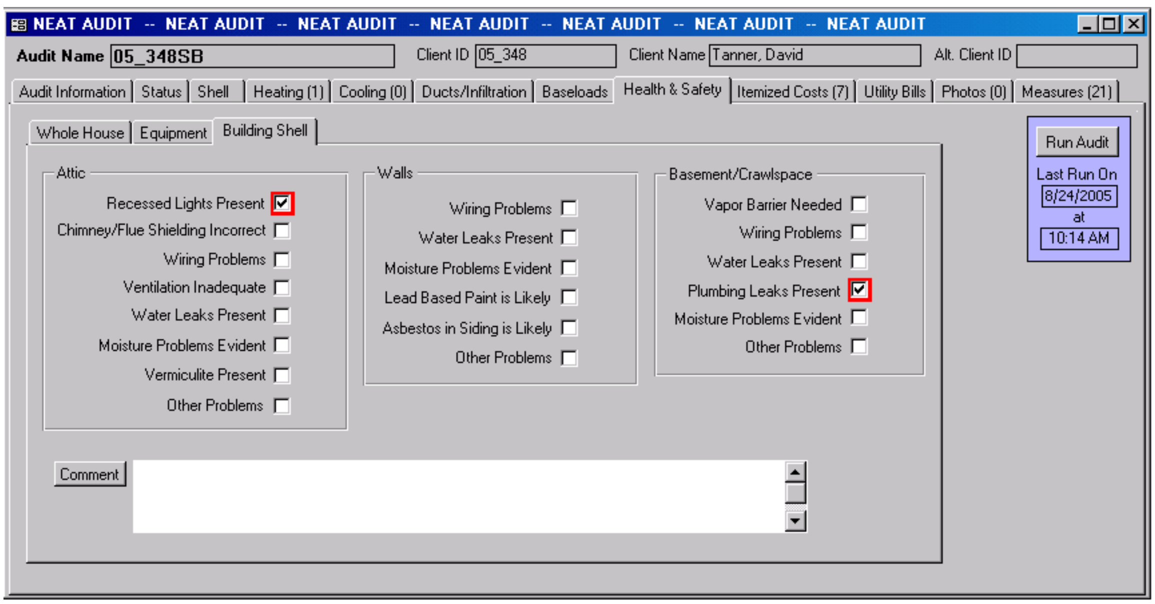
Health & Safety - Equipment

The worst case draft tests allow multiple measurements to be recorded in a spread sheet format. NEAT and MHEA allow these measurements to be taken for each of the heating systems described on the Heating tab. Improper venting is a concern for wood stoves, fireplaces, clothes dryers, and exhaust fans. In addition, wood stoves or fireplaces may have inadequate combustion air, and bathroom or kitchen exhaust fans may be missing or not operational. Individual burner and oven CO measurements can be recorded for a gas cook stove. A gas leak associated with the gas stove can also be identified.



Heating system worst case draft tests table

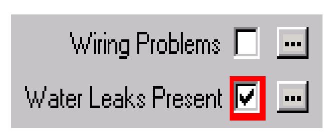
Building Shell – The Building Shell tab is divided into data blocks for Attic, Walls, and Basement/Crawlspace. All three of these areas have the potential for wiring problems, water leaks, or moisture related problems. In the attic, additional concerns may be related to recessed lighting, the chimney/flue, or the presence of vermiculite. Walls may use lead based paint or have asbestos siding. The basement



Health & Safety - Building Shell

may be in need of a vapor barrier or exhibit plumbing problems. All areas can also be described as having Other Problems, which could be explained in the comments.

Handling of Health and Safety Issues – With the introduction of Version 8 of the Weatherization Assistant comes an extended capability to handle health and safety issues. Most of the data items under the Health & Safety tab, as well as some under the Heating and Water Heater tabs, have check boxes which indicate potential hazards. When selecting such a check box, a red broad border is drawn around the box. All such noted hazards are reported under both the Heating System and the Health & Safety Summary Reports for the audit.



Two check boxes, one indicating a hazard

In addition, a pre-defined weatherization activity suggesting action to remedy the condition is associated with each potential hazard. These activities are defined under the User Defined Measure tab of Setup (see Section 9.6, *User Defined Measures*). If you have selected the feature to "Automatically generate Itemized Cost

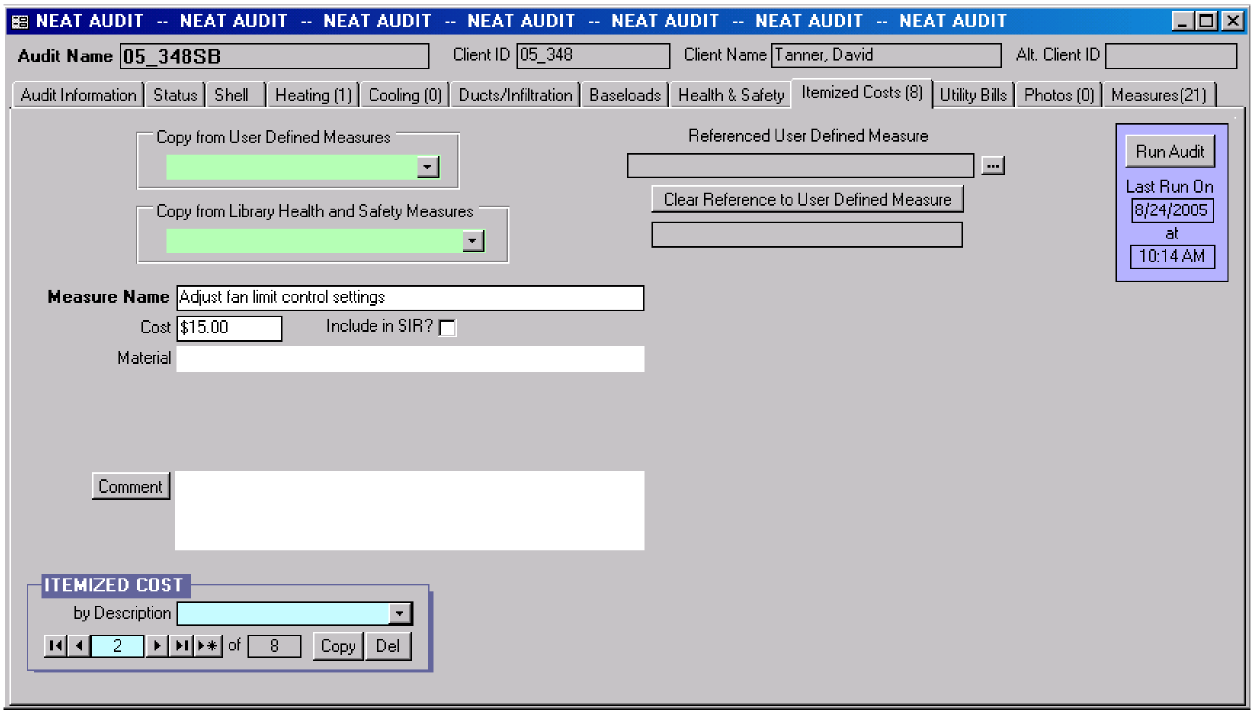
Records for Health and Safety Problems," on the Preferences / Feature tab (see the indicated topic in Section 11.4, *Features*), the program will present you with additional options. When you select a check box indicating a potential hazard, the Weatherization Assistant will ask you if you wish to add a specific Health and Safety remedial measure as an Itemized Cost to your recommended measures lists. You may review the specific Itemized Cost by clicking on the small square with three periods in it, , which will be located just to the right of the check box. Thus, using this feature, you may supplement your recommended measures produced by running the audit with activities you intend to perform to alleviate potential health and safety issues.

7.7 Itemized Costs

The Itemized Cost form on the Audits Main Menu item allows you to enter additional costs which are expected to be incurred during weatherization that are not associated with any specific activity otherwise addressed by the audit. The items described on the form may have energy savings attributed to them. However, for the purposes of this form, this energy savings would have to be assigned by the user.

You may specify these activities by supplying information to each individual data field in the specific audit you are currently referencing. Used in this mode, the form behaves as it did in Version 7 of the Weatherization Assistant with the exception that you may specify the units of the energy saving as kWh, MMBtu, or therms. See the "Itemized Additional Costs and User-Defined Measures" sections in the Version 7 NEAT or MHEA User’s Manuals for additional information on entering data on this form.

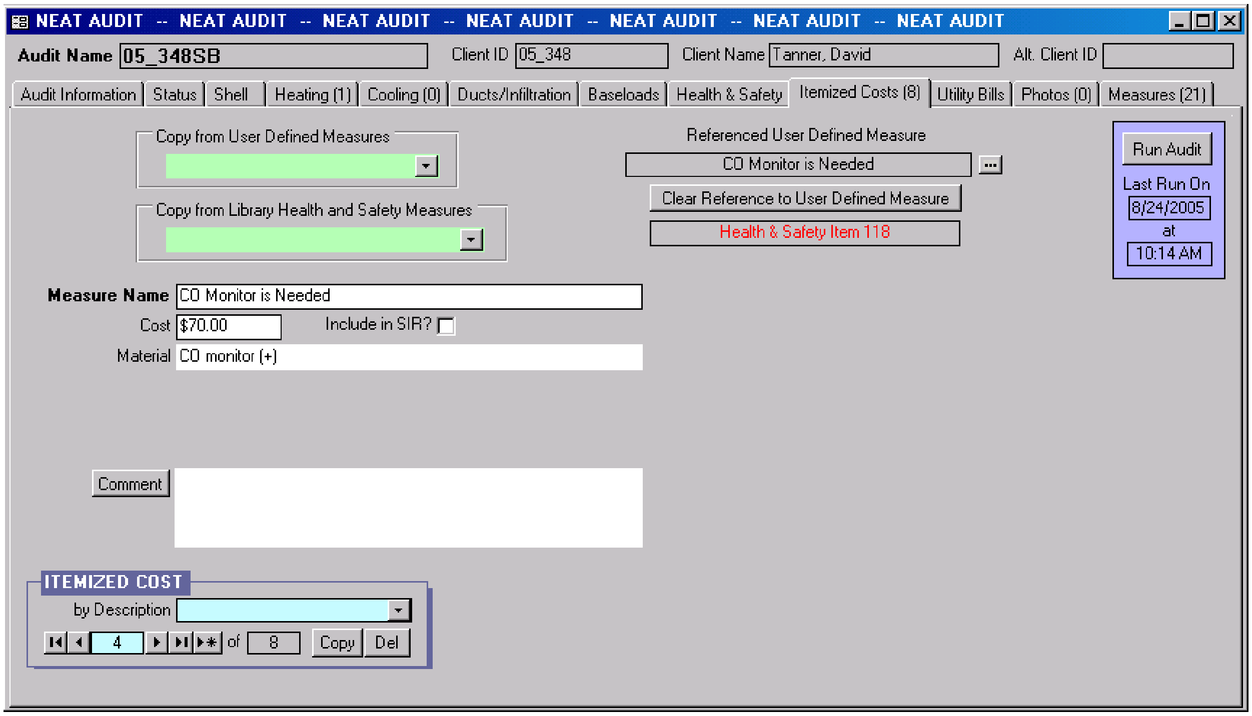
Beginning with Version 8, you may alternatively call up activities you have previously defined in your Setup Library and copy them to the audit. This is accomplished by using the "Copy from User Defined Measures" or "Copy from Library Health and Safety Measures" combo boxes. The former list will include costs and measures you have defined in your Setup Library (see Section 9.6, *User Defined Measures*). The latter are health and safety remediation items which come as part of the program. and are the same items that are accessible from the Health and Safety tab of the audit (see Section 7.6, *Health and Safety*). By choosing an item from either of these combo box lists, the remaining information on the form will be automatically copied from the Setup Library to the form, overwriting any existing information on the form. The Measure Name will appear not only in the Measure Name field, but also in the un-editable field under "Referenced User Defined Measure." An entry



Itemized Costs form (specific to audit)
Note: The entry could have had a "Material" associated with it

in this un-editable field is your indication that the measure displayed on the form is a copy of one previously defined in the Setup Library. In addition, if the measure was selected from the list of Health and Safety items in the Setup Library, the text, "Health & Safety Item #" will appear in red in another un-editable field in the same area of the form, where the # is a number uniquely identifying the specific health and safety item in the Setup Library.

There is one major difference between a measure totally specified on the form and one copied from the Setup Library. The former can have only one component to its cost and material description, that entered on this form. On the other hand, items defined in the Setup Library can have multiple material/labor components, each with its own individual cost associated with it. In this latter case, only the component designated by the user in the Setup Library (presumably the major component) will be displayed in the Material field, followed by a plus sign (+), indicating that there is more to the material description of the measure than this single entry. The Cost field, however, will display the total cost of the measure, comprised of the sum of the individual component costs. You may review the complete description of the user-defined measure in the Setup Library by clicking on the small square with three periods in it, , which will be located just to the right of the un-editable display of



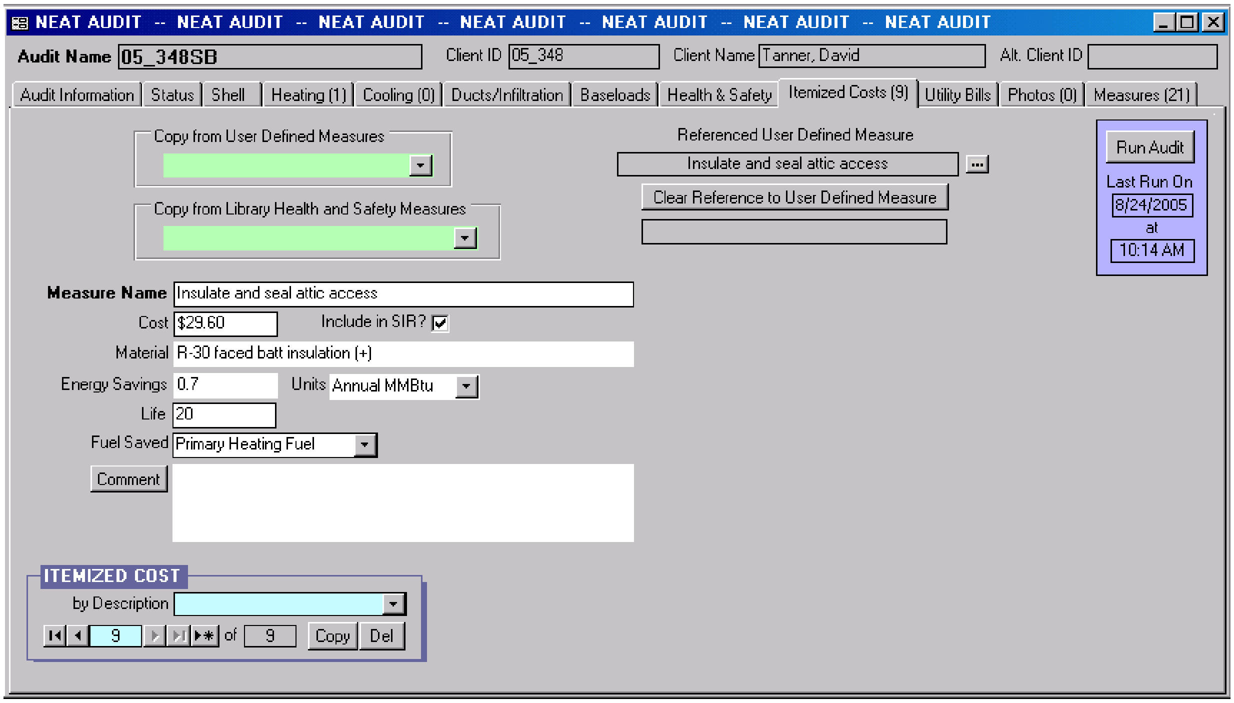
Itemized Costs form (health & safety measure taken from Setup Library

the measure name. Note, however, this button takes you to the actual Setup Library entry. Any changes to the measure made at this point will change the measure description for all future references.

Although the display of a measure copied from the Setup Library will show only one component on the Itemized Cost form of the Audit, the complete description with all of its individual components will be available in any work order created from the audit. Any modifications to the measure can be made at that time.

If you have chosen to copy a pre-defined item in creating an Itemized Cost and you do not want this detailed material costing to be forwarded to the Work Orders, click on the "Clear Reference to User Defined Measure" button. You are then free to alter any of the entries displayed on the Audit's Itemized Cost form for this item. However, now only the single Material and Cost entered there will be associated with the item and forwarded to the Work Orders. WARNING: Modifying the information for an Itemized Cost or User Defined Measure generated by copying an item from your Setup Library without first clearing the reference to the pre-defined item will cause inconsistencies in data reported in the NEAT or MHEA Recommended Measures report and that reported in the Work Orders.

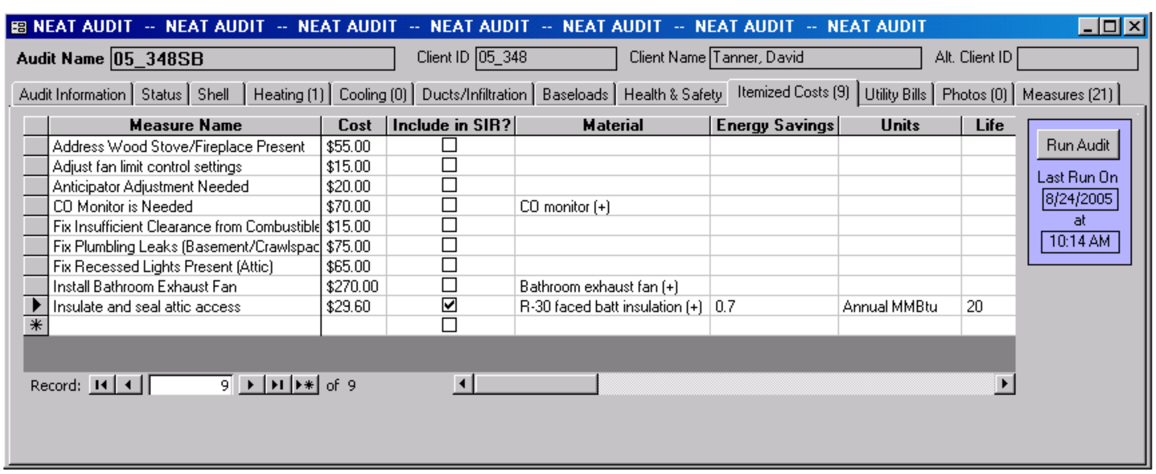
A comment field is available to add any comment you feel appropriate. If the entry on the Itemized Cost form has been copied from the user-defined items in Setup,



Itemized cost with energy savings (copied from the Setup Library)

the comment will initially be populated with whatever comment you entered for the item entered there.

A Data Sheet view of the Itemized Cost form is available. However, care must be taken if any changes are made from this view, as it may not be obvious which measures are copies of pre-defined measures from Setup.



Data Sheet View of Itemized Costs form
Note: Columns not displayed include "Fuel Saved," "Health & Safety Item #," and "Comment."

7.8 Photos (Audit)

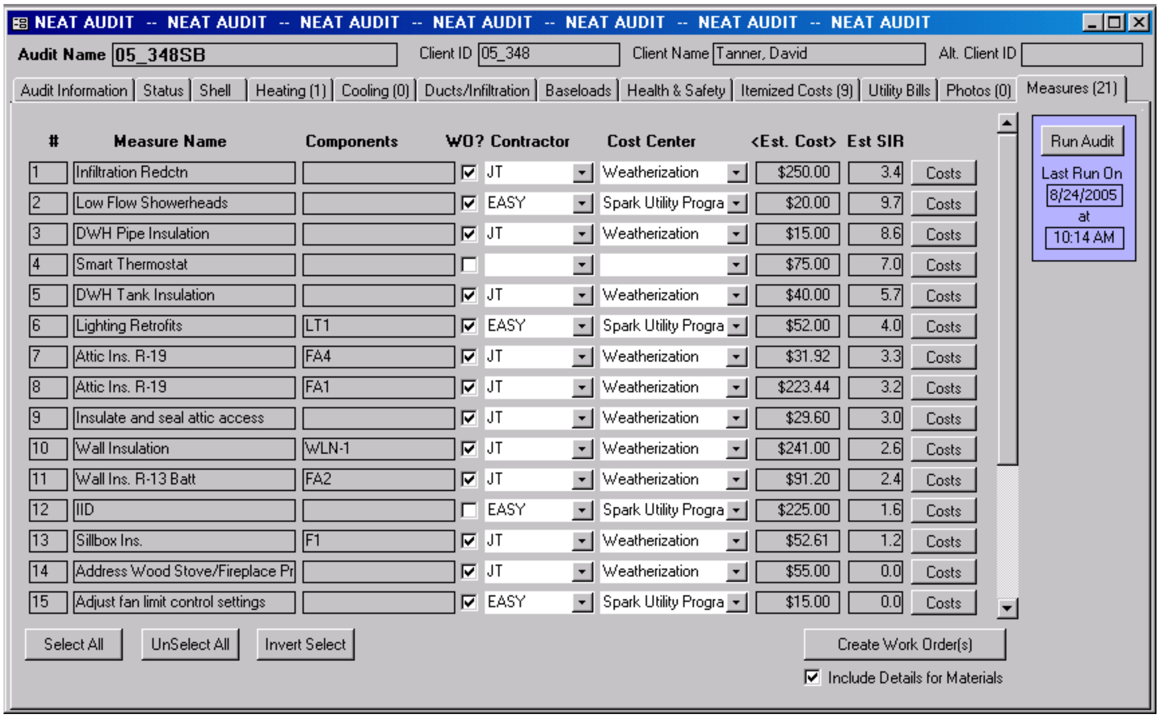
If you have selected the Photo Browser check box (Feature 1) on the Preferences/ Features tab, the Photos tab will appear on the Audit form. From this tab, you may select, view, and edit digital photos for the specific client currently being referenced. See Section 13.1, *Digital Photos*, for more information on this feature. Note that the ability to reference digital photos also exists at the Client and Work Order levels. You should develop a consistent policy regarding where you reference your photos.

7.9 Measures (Audit)

New to Version 8 of the Weatherization Assistant is the optional feature of creating work orders. If you want these work orders to be created based on the results from running either the NEAT or MHEA audits, the Measures tab of the Audit Main Menu item is the starting point for this process. An alternate use of the work order feature is to tailor the NEAT and MHEA recommendations to reflect actual conditions or to add as much detail to the measure descriptions and costs as desired.

Following execution of either audit program, the Measures tab will list all measure recommendations [similar to the listing in the Recommended Measures report, see "Audit Report Block" in Section 7.1, *Audit Information*, and Appendix A]. For each measure, the measure name, any building component designations applicable to the measure (see the appropriate NEAT or MHEA User's Manual), the total measure cost, and SIR will be displayed. Notice that "Est" prefaces the cost and SIR header names. This reminds the user that these are estimated costs and SIRs based on estimated costs, used by the audits to make their initial recommendations and may not be the same as actual costs and SIRs seen following implementation of the measures. These are all un-editable fields, reflecting the assumptions used by the audits and their recommendations. A breakdown of the costs for the standard audit measures can be viewed by either double clicking the mouse on the Cost entry itself or selecting the Costs button to the right of the measure description. However, these displays are still un-editable.

The following items on the Measures tab can be altered and are used in creating the work order(s) associated with the audit.



Itemized Cost with energy savings (copied from the Setup Library)

<u>WO?</u> – The header name is short for "Include in work order?" Check this box for each measure you want transferred to a work order. Measures not selected will not be sent to a work order. You may wish not to send a specific measure to a work order because a work order already exists which includes the measure or because you are rejecting the audit's recommendation with regard to the measure. The "Select All," "UnSelect All," and "Invert Select" buttons at the lower left of the form allow you to accept all of the recommended measures, reject (unselect) all, or invert the selection currently seen from the check boxes.

<u>Contractor</u> – This field allows you to assign each measure to a contractor. The selection will determine how many work orders are created from the measure list. All measures assigned the same contractor will be included in the same work order. The choices displayed in the combo box list will be all Agency Contacts defined as Contractor or Crew (see Section 5.2, *Contacts (Agency)*). The entry is optional. All measures with an unassigned Contractor that are selected for transfer to a work order will be assigned to the same work order with the contractor un-designated. If you have assigned a Default Contractor to a particular measure in the Setup Library (see "Default Contractor/Crew" under "The General Task Description" in Section 9.6,

User Defined Measures) and that measure is recommended, the default contractor will automatically be entered for you. However, you may still change the selection if you desire. Optional.

Cost Center – If you are tracking costs that are incurred by different funding sources or programs, assign the cost of implementing this particular measure to the appropriate Cost Center. The choices available in the combo box list will be those you have defined under the Cost Center tab on the Agency Main Menu item for your agency (see Section 5.3, *Cost Centers*). The entry is optional. If the entry is left unassigned, work orders can still be developed, but total costs over multiple audits will not tracked. The costs which are assigned to the various cost centers are not the estimated costs displayed on this Measures tab. They are the actual costs declared in the work orders themselves (see "Quantity (Actual)" and "Unit Cost (Actual)" under "The Materials/Labor Details Sub-Form" in Section 8.3, *Measures (Work Order)*). If you have assigned a Default Cost Center to a particular measure in the Setup Library (see "Default Cost Center" under "The General Task Description" in Section 9.6, *User Defined Measures*) and that measure is recommended, the default cost center will automatically be entered for you. However, you may still change the selection if you desire. Optional.

When you are satisfied with the choices made for the entries described above, you will need to decide whether you wish to transfer the estimated costs associated with each measure to the work orders you are about to create. The costs transferred will include the detail displayed by selecting the Costs buttons to the right of the measure descriptions on the form. For measures copied to the audit from the Setup Library (see Section 7.7, *Itemized Costs*), this detail will include as many costing components as were defined in the Setup Library (see "The Materials/Labor Details Sub-form" in Section 9.6, *User Defined Measures*). If you do wish to include the cost data, select the "Include Details for Materials" check box in the lower right of the form. Work orders will be created having their estimated costs identical with the detailed costing of each measure as seen by the audit.

If you would rather create work orders with no cost data associated with the measures, do not select the "Include Details for Materials" check box. This may be chosen in order to make it easier to enter costing of the measures in the work orders, perhaps expected to have greater detail than available from the estimated costs used by the audits. The costing used by the audits will still be available to you in the work orders and you may still transfer these costs to the work orders individually, measure by measure, if you so choose.

Select the "Create Work Order(s)" button when ever you are ready to actually create the work orders based on the information provided on the Measures tab. If you have previously created work orders from this specific audit, a form will be displayed asking if you prefer to (1) Save the previously existing work orders and create additional work orders – leaving the potential for duplicate measures being included, (2) Replace all work orders previously generated from the audit with new ones based on the criteria currently on the Measures form, or (3) Cancel the request to create work orders. Any work orders not created from this specific audit are unaffected by the request to create work orders from this Measures tab of the audit. Thus, if you used the Work Order tab under the Client Main Menu item to initiate and then fill in work orders for a client, then ran an audit for the same client and asked to create work orders based on the audit recommendations, the two sets of work orders will exist for the same client. The program's behavior is intended to address situations where agencies may implement some measures outside an audit (such as from a priority list), but use the audit for recommendations on other measures.

The program will next provide a small window displaying how many work orders were created as a result of your selections on the Measures tab. This should correspond to the number of unique contractors, including un-designated, you indicated on the form. Pressing the OK button will take you to the Work Order Main Menu item for the first work order created as a result of your request. You will see a work order whose default name will be of the form, "WO/<Client ID>/<Contractor ID>/#." The <Client ID> is the Client ID supplied for the Client on the Client Information tab of the Client Main Menu item and the <Contractor ID> will be the Contact User Name assigned to the Agency Contact designated as a Contractor or Crew on the Contacts tab of the Agency Main Menu item. The "#" is an integer assigned to insure uniqueness of the Work Order Name.

Having created work orders from the audit recommendations, you are prepared to make any modifications to them before printing out the actual work orders. See Chapter 8, *Work Orders*, for additional information.

Chapter 8

The Weatherization Assistant's optional Work Order feature allows you to prepare detailed listings of tasks to be performed as part of a home's weatherization. A work order can include as much material and costing detail as you wish to specify. You may create as many work orders for a client as is necessary. Tasks assigned to work orders can come from running the NEAT or MHEA audits, come from the listing of measures you have previously defined in the Setup Library (as perhaps from a priority list), or be described individually on the work order itself. The status of individual work orders can be tracked. Work orders also allow you to track inventory and costs by cost center (funding source).

Before you can create a work order, you must first have a client defined on whose dwelling the work is to be performed. Do this from the Client Main Menu item, see Chapter 6, *Clients*. You may initiate a new work order in any of three ways:

- (1) from either NEAT or MHEA recommendations using the "Create Work Order(s)" button on the Measures Tab of the Audit Main Menu item (see Section 7.9, *Measures*),

- (2) from the Work Orders tab under the Client Main Menu item (see Section 6.6, *Work Orders (Client)*), or

- (3) by using the new record button, ▸*, or Copy button on the Work Order Information Tab under the Work Order Main Menu item itself.

Using the first method will provide you with work orders which are automatically assigned to the Client for whom the audit was run and populated with measures assigned to contractors you have already selected. Starting a work order from the Client's Work Order tab will automatically assign the work order to the client, but have no measures associated with it. Using the new record button on the Work Order Information tab will initiate a new work order and assign it, by default, to the same client assigned to the work order displayed when the new record button was selected. This default assignment can be easily changed using the Client ID combo box on the form.

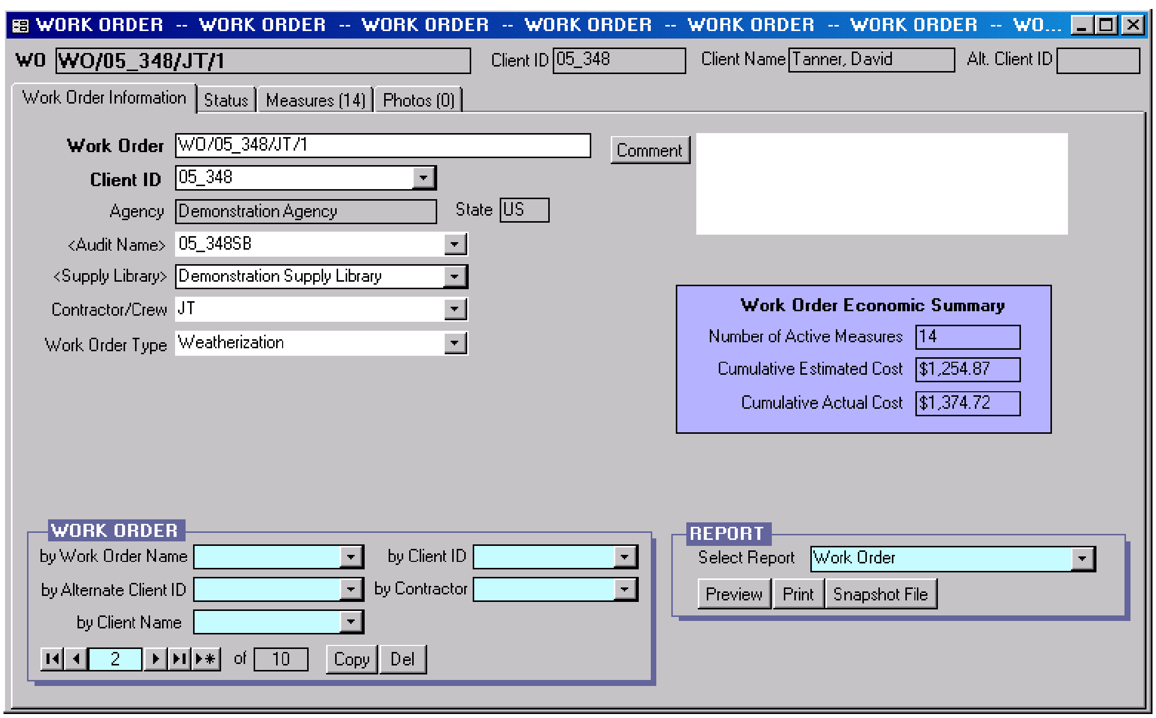
The remainder of this chapter will be divided into sections describing the use of each of the tabs seen under the Work Order Main Menu item: Work Order

Information, Status, Measures, and Photos (if the pathname method of photo storage has been activated in Preferences).

Refer to Appendix A, *Reports*, for an example of an actual Work Order generated from information entered under this Work Order Main Menu item.

8.1 Work Order Information

This tab on the Work Order Main Menu item contains general information about the work order, identifying the client, contractor, and supply library from which inventoried items are to be selected. It also contains the Work Order Navigation Block for locating additional work orders and the Report Block for requesting the viewing or printing of the actual Work Orders.



The Work Order Information form

Individual entry items and controls on the form are described below:

<u>Work Order</u> – This field contains a name uniquely identifying this specific work order. You may develop a consistent naming convention of your own or use the program's default names. A default work order name has the form, "WO/<Client ID>/<Contractor ID>/#." The <Client ID> is the Client ID supplied for the Client on the Client Information tab of the Client Main Menu item. The <Contractor ID>

is the Contact User Name assigned to the Agency Contact designated as a Contractor or Crew on the Contacts tab of the Agency Main Menu item and assigned this specific work order. This portion of the name is present only if you have specified a Contractor for the work order. The "#" is an integer assigned to insure uniqueness of the Work Order Name. This naming convention is used if the work order has been initiated in a manner that likely indicates that you would want the work order so assigned and the information is available. Otherwise, the program will assign a work order name of simply "Work Order (#)," where the # is an integer insuring uniqueness of the name. In such cases, it is advised that you replace this name with a more descriptive name. The Work Order name is printed on the Work Order. Required.

<u>Client ID</u> – This field identifies the Client for whom the work is being performed. The entry will likely be supplied for you as the program anticipates the assignment. If incorrect, use the list associated with the combo box to select the correct Client. Client and Client Contact information are printed on the Work Order. Required.

<u>Agency</u> / <u>State</u> – These un-editable fields will automatically be set to correspond to the agency performing the work for the client identified in the Client ID field above. Changing the Client ID will immediately update the Agency Name and State, if need be. Agency Information will be printed on the Work Order.

<u>Audit Name</u> – If the work order being viewed was generated from either the NEAT or MHEA audits using the "Create Work Order(s)" button on the audits Measure tab (see Section 7.9, *Measures (Audit)*), this field will display the name of the audit from which the work order was generated. Otherwise the field will be empty. If an audit name is displayed, it may be accessed simply by double clicking your mouse on the name. The list associated with the combo box will show any audits assigned to the client identified in the Client ID field above. Note that it would be an unusual occurrence to change the audit to which a work order was associated or even to have more than one audit associated with a given client. If supplied, the Audit Name will be printed on the Work Order. Optional.

<u>Supply Library</u> – This field identifies the Supply Library (see Chapter 10, *Supplies*) containing the inventory of materials from which any materials used by the work order may be taken. In addition, if you have specified costs for materials in the Supply Library, reference to these materials in the work order will automatically use these costs. Only supply libraries associated with the agency specified in the Agency field on the form will be visible in the combo box list, though most agencies would likely have only one such library. If the work order was created from an audit or copied from an existing work order, this field will be set initially to the same supply library assigned to the record from which the work order was created. Required.

<u>Contractor/Crew</u> – The Contractor/Crew field identifies the contractor assigned to perform the work described by the work order. Only those Contacts defined as Contractors or Crew for the Agency indicated in the Agency field on the Work Order Information form will be displayed in the combo box list. If the work order was initiated from the Measures tab under the Audit Main Menu item, the entry will comply with your settings on that form. If the Contractor/Crew is specified, the Contractor Company, Address, and Contractor Contact Name as well as phone numbers and e-mail address will be printed on the Work Order. Optional.

<u>Work Order Type</u> – Choose the type which best describes this work order: (1) Weatherization, (2) Re-Weatherization, (3) Emergency Repair or Replacement, (4) Response to Client Request, and (5) Other. The Work Order Type is printed on the Work Order, if available. Optional.

<u>Comment</u> – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Work Order Comment is displayed on the Work Order. Optional.

A feature unique to Comment fields under the Work Order Main Menu item is the ability to automatically transfer any comment from the audit associated with the work order (as prescribed by the "Audit Name" field) into the Work Order Comment fields. At the bottom of the Comment Editor is the "Use an Audit Comment" combo box. The list associated with this field contains all of the comments entered in any location within the associated audit. Selecting one of the entries will automatically transfer the comment to the Work Order Comment field you are currently accessing. This feature is not only available here, for the comment on the Work Order Information tab, but also for comments for individual measures described under the Work Order Measures tab, as well as the comments associated with each individual Material/Labor Detail entry under each measure (see Section 8.3, *Measures (Work Order)*). If you wish to transfer an audit comment to the work order, you will need to decide in which of the three locations the comment is most appropriate. Is it most closely related to the entire work order, a measure within the work order, or a specific material used by one of the measures?

<u>Work Order Economic Summary Block</u> – This block displays the following un-editable data: (1) the Number of Active Measures assigned to the work order, though each measure can be composed of many components. Measures are declared "Active" on the Measures tab of the Work Order Main Menu item for the specific work order.

(2) The Cumulative Estimated Cost of all measures assigned to the work order. Costs are "Estimated" until declared "Actual" on the Measures tab of the Work Order Main Menu item for the specific work order. (3) The Cumulative Actual Cost of all measures assigned to the work order.

Work Order Record Navigation Block – The Record Navigation block in the lower left corner of the form allows you to find, copy, delete, navigate to, or create new work orders in your database. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. The combo box lists will display only work orders associated with the Agency currently selected (bookmarked) on the Agency Information tab under the Agency Main Menu item. Normally the agency selected on this tab is your agency, so the combo box lists will display only your agency's work orders. If you have more than one agency defined in your database (e.g., your agency and the Sample Agency) and you want the combo box lists to display work orders from all defined agencies, un-check the "Use the last bookmarked Agency record to filter find record lists," feature 9 from the Preferences / Features tab (see the indicated topic in Section 11.4, *Features*). Work orders may be located using combo box lists arranged in alphanumeric order by five different identifying criteria: Work Order Name, Client ID, Client Name, Alternate Client ID, or Contractor. If you use the Copy button to copy an existing work order, the program will ask you if you wish to copy all measures as well. A "Yes" response will copy the measures and all associated measure data (e.g., costs and quantities). A "No" response will simply copy the information on the Work Order Information form, but no measure data. Use the new record button, , to initiate a whole new Work Order. The work order will be assigned to the same client and agency as the work order from which it was initiated from, but will be devoid of all other data.

Work Order Report Block – The Work Order Report Block located in the lower right corner of the Work Order Information form allows you to view and/or print the actual work order resulting from your input under the Work Order Main Menu item for the specific work order accessed. Two forms of the work order are available, the normal work order containing estimated costs for the measures and a bid form of the work order designed to solicit bids from the contractor on costs for the measures. This latter form has the same detail as the former, but leaves the costs blank. See Appendix A, *Sample Reports* for an example work order and Section 4.13, *The Report Block*, for the mechanics of using the Weatherization Assistant's Report Blocks.

If you have selected the third party photo browser check box (feature 2) on the Preferences/ Features tab, a Photo Folder field will appear on your Work Order Information form just below the Comments field. Choose the Browse button to the right of this field to locate and select a location on your computer in which you have stored digital photos specific to this work order. Once selected, this location will be displayed in the Photo Folder field and remain there for all subsequent visits to this work order's data. Selecting the View button will present you with a photo browser in which you may view and edit these photos. See Section 13.1, *Digital Photos* for more information on viewing and editing photos. Note that the ability to reference digital photos also exists at the Client and Audit levels. You should develop a consistent policy regarding where you store reference to your photos. Photos stored with the Work Order Main Menu item might be those taken by a contractor performing the work or by the person performing the inspection of the work.

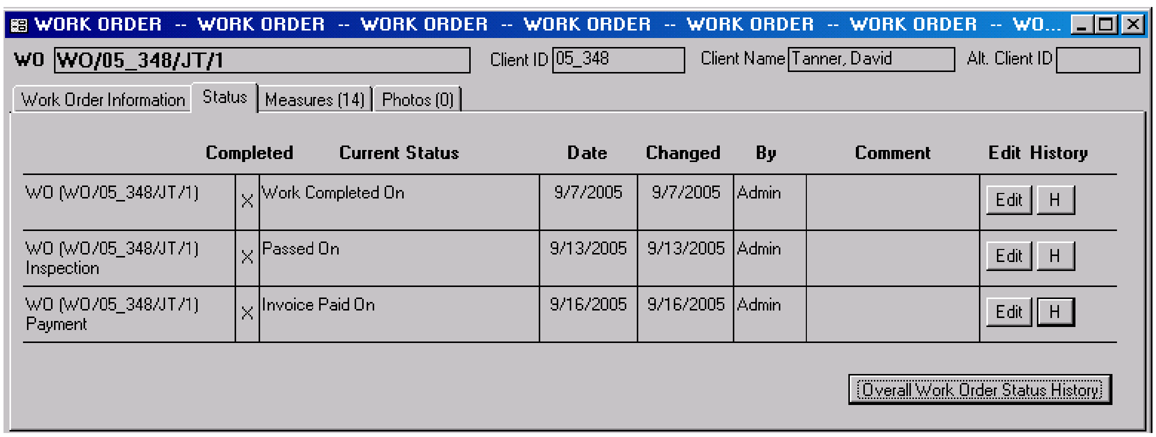
8.2 Status (Work Order)

The Status tab under the Work Order Main Menu item allows you to view and change the status of the work order currently being accessed. The setting and tracking of statuses is an optional feature in the Weatherization Assistant.

At the Work Order level there are three categories of statuses that are tracked, General, Inspection, and Payment. The settings for each are given in the following table:

General	Inspection	Payment
Work Order Created from Audit On	Scheduled For	Invoice Received On
Work Order Details Completed On	Passed On*	Invoice Approved On
Work Order Approved On	Failed On	Invoice Paid On*
Work Order Issued On	Not Required*	Not Required*
Work Scheduled to Start On	Delayed On	Delayed On
Work Started On	Other	Other
Work Completed On*		
Client Signed Off On*		
Work Refused by Client On*		
Work Order Canceled On*		
Work Order Modified On		
Rework Completed On*		
Delayed On		
Other		

The Work Order Status tab works in a manner similar to the status tabs under both Client and Audit Main Menu item. The tab displays not only the current status, but the date the status became effective, the date it was last changed, and who changed it. You are also shown any comment which has been appended to this current status setting. A Completed column on the form will display an asterisk (*) when a status setting indicates completion or closure of the activity associated with the status category, i.e., those followed with an asterisk in the table above.



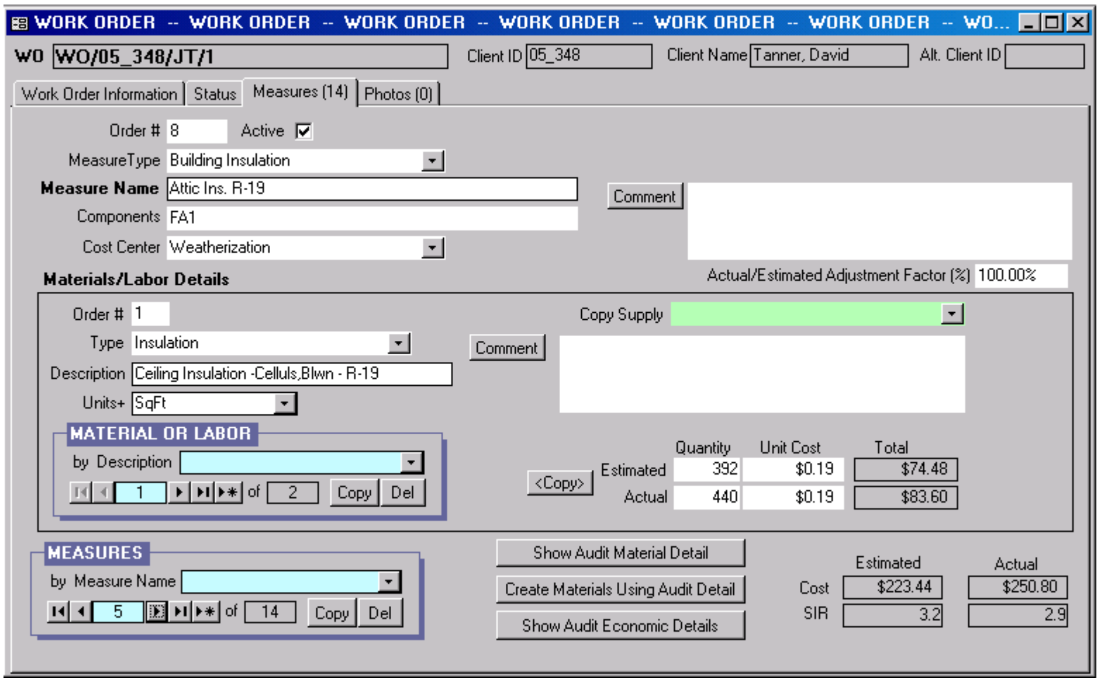
The Status form

Status settings are changed by selecting the Edit button in the row of the setting category you wish to change. You will be presented with the Status Editor form. Choose the "H" button to see a history of all settings for a specific status category for the current client. The Overall Work Order Status History button at the bottom right of the Work Order Status form presents you with a Data Sheet View of all status categories for the work order.

See Section 13.3, *Status Tracking* for additional information on the Status tabs and changing status settings. Note that the status of a work order can also be changed on the Status tab of the Client Main Menu item (see Section 6.2, *Status (Client)*).

8.3 Measures (Work Order)

The Measures tab of the Work Order Main Menu item is where you develop the detailed task descriptions which constitute the work orders. Initially there may be no tasks associated with a work order if, for example, it was initiated from the Work Order tab of the Client Main Menu item. On the other hand, it may be populated with tasks which originated from running a NEAT or MHEA audit for the client. In the latter case, these tasks will be the energy efficiency measures recommended by the audit (and accepted by you on the Measures tab under the Audit Main Menu item) as well as any Itemized Costs, User-Defined Measures, or either manually or automatically generate Health and Safety items.



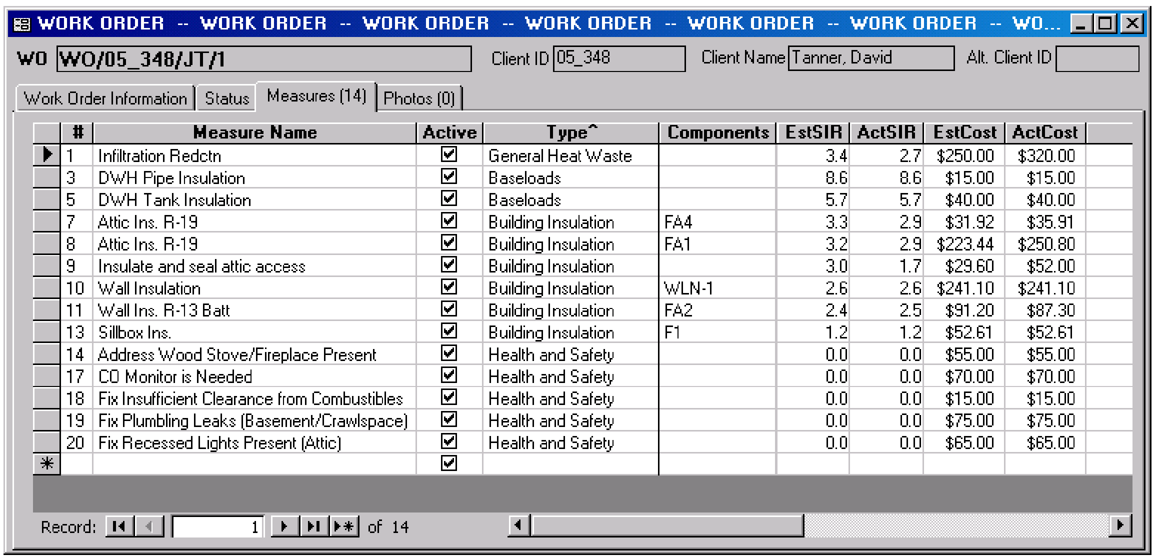
The Measures form

The form is divided into two areas: a general task description area and a Materials/Labor Details sub-form, located approximately in the center of the form. Although there is only one general task description area per task (or measure), the Materials/Labor Details sub-form is in itself a multi-component form, allowing you to list any number of materials or labor components to be associated with an individual measure.

The discussion of the general task description area and the Materials/Labor Details sub-form will be kept separate in order to distinguish information which relates to a measure in general from the detailed materials or labor efforts which make up the measure implementation.

The General Task Description Area

Each measure or task included in a work order has its own form under the Measures tab of the Work Order Main Menu item. Navigation to other tasks within the same work order is done using the Measures Record Navigation Block in the extreme lower left portion of the form (not the navigation bar above this block within the Materials/Labor Details sub-form). You may also view all tasks within the work order by going to Data Sheet View (see Section 4.8, *Data Sheet and Form Views of Records*). Although you can make changes while in this view, it is not recommended as standard practice since the form has more information associated with it than can be displayed from this view (in particular the information within the Materials/Labor Details sub-form).



WORK ORDER -- WORK ORDER -- WORK ORDER -- WORK ORDER -- WORK ORDER -- WORK ORDER -- WO...

WO WO/05_348/JT/1 Client ID 05_348 Client Name Tanner, David Alt. Client ID

Work Order Information | Status | Measures (14) | Photos (0)

#	Measure Name	Active	Type	Components	EstSIR	ActSIR	EstCost	ActCost
1	Infiltration Redctn	☑	General Heat Waste		3.4	2.7	$250.00	$320.00
3	DWH Pipe Insulation	☑	Baseloads		8.6	8.6	$15.00	$15.00
5	DWH Tank Insulation	☑	Baseloads		5.7	5.7	$40.00	$40.00
7	Attic Ins. R-19	☑	Building Insulation	FA4	3.3	2.9	$31.92	$35.91
8	Attic Ins. R-19	☑	Building Insulation	FA1	3.2	2.9	$223.44	$250.80
9	Insulate and seal attic access	☑	Building Insulation		3.0	1.7	$29.60	$52.00
10	Wall Insulation	☑	Building Insulation	WLN-1	2.6	2.6	$241.10	$241.10
11	Wall Ins. R-13 Batt	☑	Building Insulation	FA2	2.4	2.5	$91.20	$87.30
13	Sillbox Ins.	☑	Building Insulation	F1	1.2	1.2	$52.61	$52.61
14	Address Wood Stove/Fireplace Present	☑	Health and Safety		0.0	0.0	$55.00	$55.00
17	CO Monitor is Needed	☑	Health and Safety		0.0	0.0	$70.00	$70.00
18	Fix Insufficient Clearance from Combustibles	☑	Health and Safety		0.0	0.0	$15.00	$15.00
19	Fix Plumbling Leaks (Basement/Crawlspace)	☑	Health and Safety		0.0	0.0	$75.00	$75.00
20	Fix Recessed Lights Present (Attic)	☑	Health and Safety		0.0	0.0	$65.00	$65.00
*		☑						

Record: 1 of 14

The Measures form (Data Sheet View)
Note: "Cost Center" and "Comment" fields not displayed

Brief descriptions of the individual data items and controls in the general task description area will be given here, followed by a discussion of the Materials/Labor Details sub-form.

Order # – An integer entry which prescribes the order in which the measures within the work order will be listed. Any measures not given an order number will be listed first on the work order, but all those without a number will have random order amongst themselves. This Order # will be listed on the actual work order just prior to the Measure Name (e.g., "Measure 4 Wall Insulation"). Optional.

Active – This check box allows you to accept or reject this particular measure as being a part of the work order being accessed. If a measure is not "Active," it is not automatically assigned elsewhere but simply dropped from consideration. If not selected, it would undoubtedly be wise to include a Comment indicating the reason for the measure's rejection.

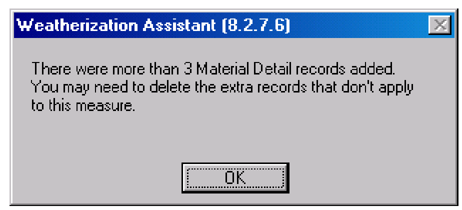
Measure Type – The Measure Type field allows you to assign a type to each measure. Your choices are: (1) Baseloads, (2) Building Insulation, (3) Client Education, (4) Doors and Windows, (5) General Heat Waste and Air Infiltration, (6) General Repairs, (7) Health and Safety, (8) HVAC Systems, and (9) Other. Measures generated from running either the NEAT or MHEA audit programs will be automatically assigned a Measure Type, as prescribed on the Library Measures tab in Setup (see "Measure Type" in Section 9.5, *Library Measures*). The Measure Type does not appear in any reports, but could be used to sort the measures for a particular work order if the Measures tab is being viewed in Data Sheet View. Optional.

Measure Name – This field contains the name of the measure. If the measure was generated from running either the NEAT or MHEA audits, the name will be automatically assigned to be the same as the measure name used on the Library Measures tab of Setup. The Measure Name is the designation used to identify the measure in the actual work order. Required.

Components – The Component field identifies the specific envelop or equipment components to which the measure is to be applied. The entries will have been automatically filled in if the measure originated from running either the NEAT or MHEA audits and within the audit, specific components (e.g., walls, windows, heating systems) where designated as the component upon which the specific measure was to be applied. See the NEAT and MHEA Users Manuals for more details on Component Codes. The Component Codes can also be used without reference to the audits if you wish to designate them here and relay their significance to the contractor, perhaps through a drawing that could be scanned and stored with the work order. These Component Codes will be displayed on the work orders as indications of where the measures are to be applied. They may not be of use if a sketch of the house with the codes included is not attached to the work order. Optional.

Cost Center – If you are tracking costs that are incurred by different funding sources or programs, the Cost Center is that source of funding to which the actual cost of the measure will be charged. Cost Centers are defined under the Cost Centers tab of the Agency Main Menu item for your agency (see Section 5.3, *Cost Centers*). The Cost Center displayed here may have been automatically filled in if it was assigned as the default Cost Center for the measures evaluated by NEAT and MHEA (see "Default Cost Center" in Section 9.5, *Library Measures*) or assigned to the measures at the time the measures were selected from the audit recommendations on the Measures tab under the Audit Main Menu items (see Section 7.9, *Measures (Audit)*). However, the settings made in these other locations are simply means to initially assign the entry here. At this point, you may set or change the Cost Center assignment to any available entry, as determined under your Agency Main Menu item. For measures not originating from either of the audits of the Weatherization Assistant, this entry will be empty and, if you are tracking costs to cost centers, you will want to select the appropriate Cost Center here. Optional.

Copy from Library Measures – If you have initiated a new measure to be included in this work order, the "Copy from Library Measure" combo box will appear in the upper right corner of the form. This allows you to optionally choose the measure from those normally considered by the NEAT or MHEA audits, even though you may not have run an audit for this client (see Section 9.5, *Library Measures*). When you choose one of the audit measures in this manner, general measure information as well as detail and costing information associated with the measure are automatically copied to the Work Order Measures form and Material/Labor Detail sub-form. Of course, you may alter this information, as you can for any measure on the Work Order Measures tab. If the measure you chose from the library is one of the insulation measures, you may receive a message indicating that "There were more than 3 Material Detail records added." This occurs because most of the insulation measures have more than one type of material associated with the measure and material records for all types are copied to the Material/Labor Details sub-form for the copied measure. You will, therefore, have to edit the data in the sub-form to include only those records for the insulation type you intend to use.



Message when copying insulation library measure to work order

Copy from User-Defined Measures – This field is similar to the "Copy from Library Measures" described above except it provides access to the User-Defined and Health and Safety Measures in your Setup Library (see Section 9.6, User Defined Measures) when initiating a new measure for a work order. When you choose one of these measures in this manner, general measure information as well as detail and costing information associated with the measure are automatically copied to the Work Order Measures form and Material/Labor Detail sub-form. However, after copying the measure to the work order, you may alter this information, as you can for any measure on the Work Order Measures tab.

Comment – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. Text from other sources may be copied and pasted into the Comment Editor's window. You may also have comments from the audit associated with the work order automatically transferred into this comment field. See the discussion under Comments on the Work Order Information tab in Section 8.1 for more details. The total comment may have up to 65,000 characters. Work Order Measure Comments are displayed on the Work Order under the specific measure to which the apply. Optional.

Actual/Estimated Adjustment Factor (%) – This field allows you to indicate that the measure will likely not be as effective in saving energy as originally estimated by NEAT or MHEA. For example, you may discover that only 80% of the wall area you originally thought could be insulated can actually be insulated. Thus, you would expect that the energy savings associated with this measure might also be affected by approximately the same percentage. In this case, you would enter 80 in the Actual/Estimated Adjustment Factor field. In this example, the situation discovered would also likely affect your conversion of Estimated Costs to Actual Costs, as performed under the Materials/Labor Details sub-form (see below).

Show/Hide Audit Material Detail - If the measure currently being viewed has been generated from running either the NEAT or MHEA audits, selection of this button will display the costing components used by the audits, as specified in the Setup Library (see "Costs" in Section 9.5, *Library Measures* or "The Materials/Labor Details Sub-Form in Section 9.6, *User Defined Measures*).

Materials Detail

Order	Description	Material Type	Units	Qty Est	Est $/Unit	Comment
1	Ceiling Insulation -Celluls,Blwn - R-19	Insulation	SqFt	1300	$0.19	
2	Ceiling Insulation -Celluls,Blwn - R-19	Labor	SqFt	1300	$0.38	

Example of material detail from audits displayed under the Work Order Measures form

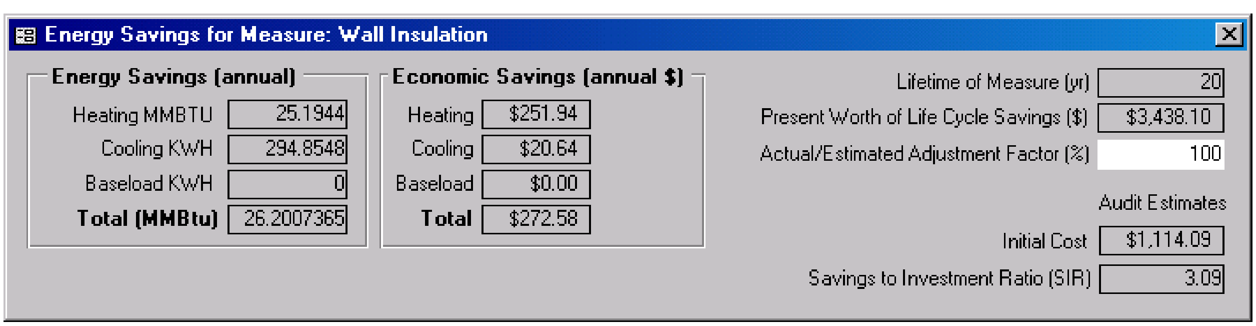
These audit cost components are designed to be approximate costs used by the audits in estimating the cost-effectiveness of the measures for determining the recommendations. However, they may not be as detailed or as precise as you may wish for the purposes of generating work orders for the measures. Nevertheless, you may still wish to refer back to them. If, in initially forming the work orders from audit recommendations, you chose to "Include Details for Materials" (see Section 7.9, *Measures (Audit)*), these costing components will have already been transferred to the work order. This would make what you view by selecting the "Show Audit Material Detail" button the same as what is displayed in the Materials/Labor Details sub-form, particularly if the latter is viewed in Data Sheet View. However, if you did not choose to transfer these components or you have since altered the detail in the sub-form, this button still allows you to refer back to what the audits used for costing components in making their recommendations. If the measure was generated by some other means than the audits, no entries will be seen when selecting this button.

It is recommended that prior to selecting the "Show Audit Material Detail" button you maximize the window the Weatherization Assistant program uses. Otherwise the sub-window which is used to display this added data may fall outside the program window, making it hidden.

Once the "Show Audit Material Detail" button has been selected, the name of the button will change to "Hide Audit Material Detail." It is recommended that when you no longer require viewing the audit material detail and prior to navigating to another measure, you close the sub-window by selecting the "Hide Audit Material Detail" button instead of using the traditional Windows X box in the upper right corner of the sub-window. This allows the naming of the button to remain synchronized with the display.

Create Materials Using Audit Detail – This button is used to transfer the audit material detail for the measure being accessed (viewed using the "Show Audit Material Detail" button) to the work order. This would not be necessary if, when generating the work order from the Measures tab of the Audit Main Menu item, you chose "Include Details for Materials" (see Section 7.9, *Measures (Audit)*. The detail would have already been transferred. However, if this was not your choice and you now wish to transfer the information, this button will accomplish the action. Even if you initially chose to transfer the audit data but have since altered it using the Materials/Labor Detail sub-form, you may still go back to the original audit data using this button. However, as you will be warned, this transfer will overwrite the existing data in the work order for this measure. If the measure was not generated from running either the NEAT or MHEA audits, selecting this button will indicate "No material detail records to add."

Show Audit Economic Details - This button allows you to refer back to information about the measure as seen by the NEAT or MHEA audits.



Example of audit measure economic detail displayed on the Work Order Measures form

The display that opens shows the energy and dollar savings estimated by the audit for the measure, the life of the measure and its life cycle present worth dollar savings, all as un-editable fields. The life cycle present worth dollar savings of the measure is the first year's dollar savings multiplied by the measure life, then adjusted to account for the fact that future dollar savings are not worth as much as current dollars (i.e., "discounted"). The value also attempts to adjust for forecasted changes in fuel costs. At the bottom right of the window, the "Initial Cost" of the measure is displayed, or the cost used by the audits. The SIR reported below the "Initial Cost" is the ratio of the life cycle present work dollar savings and the cost of implementing the measure, both displayed immediately above this entry. This is the same SIR that NEAT or MHEA computes for the measure.

The only editable field in the Audit Economic Details form is the "Actual/Estimated Adjustment Factor (%)." This is a repeat display of this same field which appears on the general task description portion of the Work Order Measures tab (see above). Changing the value here will automatically change the value displayed in this other location. Since this parameter only affects the "Actual" savings and SIR, changing it on this Audit Economic Details form will not affect any other entries on the form. It is included here to allow you to make some conclusion about actual energy savings while viewing the savings estimated by the audits. Windows of the program can be arranged such that both this window and the main Work Order Measures window are both visible, in which case you will be able to see the effect of the "Actual/Estimated Adjustment Factor (%)" on the Actual SIR viewed on this latter form. Close the form with the traditional X box in the upper right corner of the form.

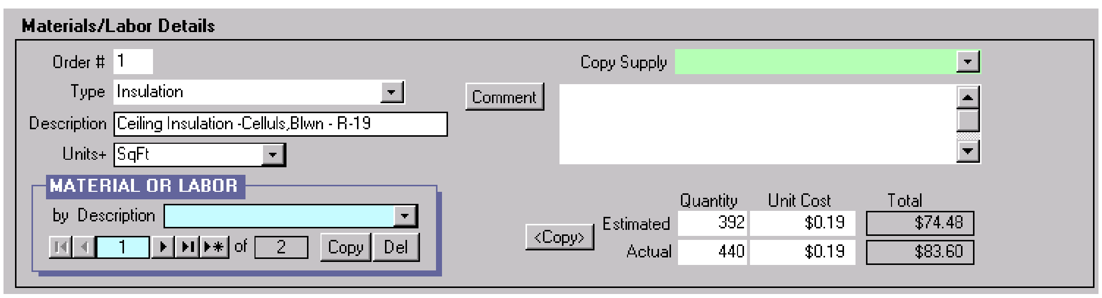
<u>Measure Economics Block</u> – This block of data located in the lower right corner of the Measures tab summarizes the total Estimated and Actual Costs and SIRs for the measure being considered. Estimated Costs are those initially coming from whatever source generated the measure, such as the execution of either NEAT or MHEA, although even these may be altered under the Materials/Labor Details sub-form (see below). Actual costs are assigned whenever you declare them under the Materials/Labor Details sub-form. Care must be taken in interpreting these "Actual" parameters. If you have only declared part of the costing components as "Actual" under the Materials/Labor Details sub-form (see below), this cost may not reflect the total cost of implementing the measure. The SIR will display "0.0" for measures without energy savings associated with them.

<u>Measures Record Navigation Block</u> – The Measures Record Navigation Block in the lower left corner of the form allows you to find, copy, delete, or navigate to

measures associated with the work order currently being accessed. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. The combo box list will display all measures currently associated with the work order. You may initiate a new measure for the work order by using the new record button, ▸*, in the block.

The Materials/Labor Details Sub-Form

The Materials/Labor Details sub-form allows entry of as much information for individual materials and labor components as you feel necessary to sufficiently describe implementation of each measure. The level of detail included is totally up to the user. However, there must be at least one valid Material/Labor Detail associated with a measure in order to have that measure printed in the work order.



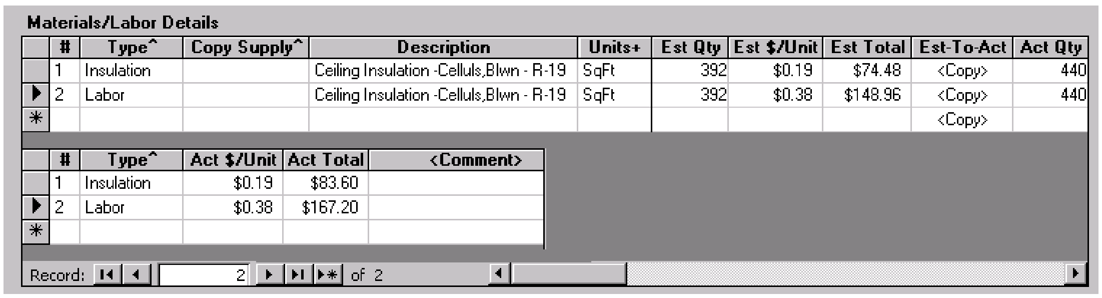
The Materials/Labor Details sub-form

If the measure was generated from running either the NEAT or MHEA audits, this detail may (if the user so chooses) initially be composed of the costing detail prescribed in the Setup Library. For Library measures, this detail is restricted to three entries representing Material, Labor, and Other costs (see "Costs" in Section 9.5, *Library Measures*). For User-Defined and Health and Safety measures, any amount of detail given in Setup (see "The Materials/Labor Details Sub-Form" in Section 9.6, *User Defined Measures*) will be copied over into the Work Order Material/Labor Details sub-form. This detail is the same data viewed by selecting the "Show Audit Material Detail" button described above.

The Materials/Labor Details sub-form is also where you indicate use of materials from your Supply Library (see Chapter 10, *Supplies*) which then get subtracted from your inventory once the material costs have been declared "Actual."

Below are descriptions of each individual data entry item or control involved in specifying the measure detail on the Materials/Labor Details sub-form. As already noted, this sub-form has multiple components and may be viewed in either Form

View or Data Sheet View (see Section 4.8, *Data Sheet and Form Views of Records*). Although both views allow full capabilities in entering data, the Form View is likely somewhat easier to understand since the controls have their standard appearance and do not need to be cast in a spreadsheet format. Therefore, this view will be assumed in the following descriptions. However, the alternate Data Sheet View still offers the added ability to quickly see all components of the measure detail at once, which is not possible from the Form View.



Materials/Labor Details

#	Type^	Copy Supply^	Description	Units+	Est Qty	Est $/Unit	Est Total	Est-To-Act	Act Qty
1	Insulation		Ceiling Insulation -Celluls,Blwn - R-19	SqFt	392	$0.19	$74.48	<Copy>	440
2	Labor		Ceiling Insulation -Celluls,Blwn - R-19	SqFt	392	$0.38	$148.96	<Copy>	440
								<Copy>	

#	Type^	Act $/Unit	Act Total	<Comment>
1	Insulation	$0.19	$83.60	
2	Labor	$0.38	$167.20	

Record: 2 of 2

The Materials/Labor Details sub-form (Data Sheet View)
Note: The form has been displayed wrapped since scrolling would normally be necessary to see all columns

<u>Order #</u> - An integer entry which prescribes the order in which the costing components of the measure will be listed on the work order. Any components not given an order number will be listed first on the work order, but all those without a number will have random order amongst themselves. Optional.

<u>Type</u> - If you are using the Supply Library (see Chapter 10, *Supplies*) to store information about materials you use in your weatherization activities and possibly taking advantage of the Weatherization Assistant's inventory feature, select the category under which the material is listed in the library. With the exception of "Unspecified," these selections correspond to the material categories in the Supply Library. The choices are:

Cooling Equipment	Labor
Construction Materials/Hardware	Lighting
Doors	Miscellaneous Supplies
Health and Safety Items	Refrigerators
Heating Equipment	Windows
Hot Water Equipment	Other
Insulation	Unspecified

The entry is used to narrow your search for the material when using the Copy Supply combo box list at the upper right corner of the sub-form. If you do not plan to locate this material detail component in your Supply Library, this entry may be left blank or designated as "Unspecified." If the measure to which this detail belongs originated from a NEAT or MHEA audit recommendation, this entry will automatically be assigned. Optional (unless locating the material in your Supply Library).

Description – Enter a brief description of the component detail of the measure. If the Copy Supply field was used to select the material, this field will be automatically entered. In such cases, you may change the description, but it may complicate your ability to identify the item as one tracked in your inventory. The entry will also be automatically filled in if the material entry stems from an audit recommendation. However, this does not link the entry to an item in your Supply Library. You must still use the Copy Supply field if you wish to associate the material with one in that library. The entry may be 80 characters or less. Required.

Units - Enter the units to be associated with the Estimated and Actual Quantity fields on the sub-form. WARNING: If the detail entry was copied from the supply library using the Copy Supply combo box, do not change the Unit entry which is automatically entered. The inventory kept in the Supply Library will expect the Quantity and Unit Cost entries on the sub-form to be in these original units. Required.

Copy Supply - This entry is used in conjunction with the Type entry on the sub-form to locate a specific material from your Supply Library. Selecting the material using this combo box will automatically fill in most of the remaining fields on the sub-form, provided you have specified the analogous entries in the Supply Library. Locating a material in the Supply Library is essential if you are using the inventory feature of the program for the specific material being described. Optional.

Comment – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. If the measure being viewed resulted from a Library or User-Defined Measure in your Setup Library (see Sections 9.5, *Library Measures* and 9.6, *User-Defined Measures*) and you had entered comments there for the component detail, those comments will be automatically copied to this form provided the request was made to carry along the component detail when generating the work order (see Section 7.9, *Measures (Audit)* or Section "Create Materials Using Audit Detail" in Section 8.3, *Measures (Work Order)*)..

Quantity (Estimated) – This is an estimate of the quantity of the material entered in the Description field, in units specified in the Units field, needed to install the measure currently being considered. If this specific Material/Labor Details entry originated from an audit recommendation, this field will initially be the quantity specified in the recommendation. However, you may alter this value if a new, more accurate estimate becomes available. You may always review the value from the audit recommendation by selecting the "Show Audit Material Detail" button. Although the entry is optional with regard to form completeness checks, if left blank, no value will appear in the Work Order Report. Optional.

Unit Cost (Estimated) – This is an estimate of the cost per unit (as given in the Units field) of the material entered in the Description field needed to install the measure currently being considered. If this specific Material/Labor Details entry originated from an audit recommendation, this field will initially be the cost used to calculate SIR of the recommendation. However, you may alter this value if a new, more accurate cost estimate becomes available. You may always review the value from the audit recommendation by selecting the "Show Audit Material Detail" button. Although the entry is optional with regard to form completeness checks, if left blank, no value will appear in the Work Order Report. Optional.

Total (Estimated) – This un-editable field is the product of the Estimated Quantity and the Unit Cost. It will be reported on the Work Order as an indication to the contractor of your estimate of the cost for this particular component of the measure's installation. The sum of the Total Estimated Costs from all components of a measure is displayed in Estimated Cost field of the Measure Economics Block (see this topic under "The General Task Description Area," above).

Quantity (Actual) – This field allows you to record an actual quantity of material used in installing this component of the measure, in the units specified in the Units field. This value may not be available until after the work has actually been performed. A blank field on the Work Order Report for this quantity allows the contractor to record it such that it can be reported back to the agency. However, if entered prior to the Work Order Report being printed, the value will appear on the report in this field instead. If the Actual Quantity and Actual Unit Cost are found to be the same as the Estimated values, clicking on the "Copy" button will automatically copy the estimated values to the actual fields. If the material has been selected from your Supply Library, it is only after the quantity of the material has been declared "Actual" that the quantity will be subtracted from your inventory tracked in that Supply Library (see "Used (button)" in Section 10.2, *Common Entries on Material Forms* and the Copy Supply field described above). You may enter the Actual Quantity without entering the associated Unit Cost. However, unless both the Actual

Quantity and Actual Unit Cost are entered, no Actual Total will be computed. Optional.

Unit Cost (Actual) - This field allows you to record an Actual Unit Cost of the material used in installing this component of the measure, in the units specified in the Units field. This value may not be available until after the work has actually been performed. A blank field on the Work Order Report for this quantity allows the contractor to record it such that it can be reported back to the agency. However, if entered prior to the Work Order Report being printed, the value will appear on the report in this field instead. If the Actual Quantity and Actual Unit Cost are found to be the same as the Estimated values, clicking on the "Copy" button will automatically copy the estimated values to the actual fields. You may enter the Actual Unit Cost without entering the associated Quantity. This may be useful if a Unit Cost for the material has been set by a contract, but the Actual Quantity is left for the contractor to determine at the time the work is performed. However, unless both the Actual Quantity and Actual Unit Cost are entered, no Actual Total will be computed. Optional.

Total (Actual) – This un-editable field is the product of the Actual Quantity and the Actual Unit Cost. The entries necessary for the program to compute this value may not be available until after the work has been performed. However, if available at the time the Work Order Report is printed, the value will appear on the report. The sum of the Total Actual Costs from all components of a measure is displayed in Actual Cost field of the Measure Economics Block (see this topic under "The General Task Description Area," above).

8.4 Photos (Work Order)

If you have selected the Photo Browser check box (Feature 1) on the Preferences/ Features tab, the Photos tab will appear under the Work Order Main Menu item. From this tab, you may select, view, and edit digital photos associated with the specific work order currently being referenced. See Section 13.1, *Digital Photos*, for more information on this feature. Note that the ability to store digital photos also exists at the Client and Audit levels. You should develop a consistent policy regarding where you store reference to your photos. Photos stored with the Work Order Main Menu item might be those taken by a contractor performing the work or by the person performing the inspection of the work.

Chapter 9

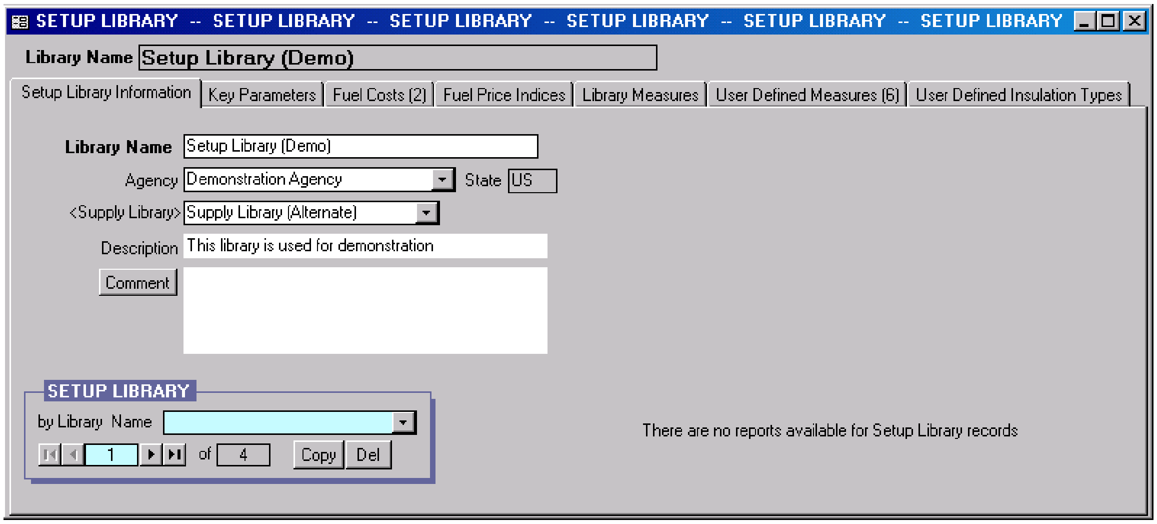
NEAT and MHEA require more than a home's description in order to select energy efficiency measures for a dwelling. Using the Setup Library, you customize the programs to your area by supplying fuel costs, material costs, and additional key parameters. These are values which are not expected to change house-by-house. The Setup Library is also where you have the opportunity to tell the programs which measures to consider. This is most often decided with input from the state. You may also define tasks you regularly perform as part of your weatherization work which are not otherwise addressed by the programs. If you know energy savings associated with any of these tasks, you may define actual User-Defined Measures which the programs will treat exactly as they do the pre-defined "Library" Measures. The Setup Library is also where you may designate the characteristics of User-Defined Insulation Types used in NEAT.

As many setup library records as needed may be defined, each with their individual set of material costs, settings, etc. For example, you may have more than one contractor who has bid on work you perform. Thus, you would need a separate Setup Library to contain the costs associated with each contractor. In addition, each Setup Library itself can have multiple sets of fuel costs (see Section 9.3, *Fuel Costs*, below) to accommodate the possibility of different utility service areas. Only one Setup Library can be associated with each audit.

The remainder of this chapter will be divided into sections describing the use of each of the tabs seen under the Setup Library Main Menu item: Setup Library Information, Key Parameters, Fuel Costs, Fuel Price Indices, Library Measures, User Defined Measures, and User-Defined Insulation Types. Although descriptions of all the tabs available under the Setup Library Main Menu item will be given in this manual, details of individual entry items specific to either NEAT or MHEA will be left for the user manuals of these respective programs. The properties of the forms unique to Version 8 of the Weatherization Assistant, however, will be covered here.

9.1 Setup Library Information

This tab under the Setup Library Main Menu item identifies the Setup Library being displayed and the Agency to which the Setup Library is assigned. Individual entry items on the form are discussed below:



The Setup Library Information form

Library Name – Enter in this field a name by which the specific Setup Library can be identified. If you have more than one Setup Library in your agency, the Library Name may contain some reference to how this library differs from any other. However, a complete description of the library should be saved for the Description or the Comment fields. A default name will be supplied when a new Setup Library is created. The name will use your installation's ID (see Section 3.3, *Starting the Weatherization Assistant*), if available. Otherwise the default name will contain the time the library was created. Entries may be 50 characters or less. Required.

Agency – This field identifies the agency to which the Setup Library is associated. Since the only way to create a new Setup Library is to copy an existing one or import one with a client (see both topics on "Importing Clients" in Sections 12.3, *Data Transfer – Import/Export via Database Files* and 12.4, *Data Transfer – Import/Export via Text Files*), this entry will always be at least initially filled in for you. The field is more for identification purposes, possibly on a state level, identifying the agency within the state using the set of parameters in the library. WARNING: The program allows you to change the Agency assignment of a Setup Library. However, doing so when existing audits use the library will hide the link between the audits and the library. Therefore, re-assigning the agency assignment of a Setup Library is not recommended unless the library has just been created, insuring no other references to it exist. Required.

State – This un-editable field displays the state associated with the Agency entered in the previous field.

Supply Library – This entry indicates what Supply Library is associated with the Setup Library. The Supply Library is where your inventory of materials and supplies exist. The Setup Library uses this designation to permit you to include materials from your inventory in defining User-Defined Measures. If these materials are so chosen, actual implementation of the User-Defined Measure will automatically update your inventory within the specified Supply Library. (See Section 9.6, *User Defined Measures*). The Supply Library entry will most often be automatically entered for you whenever a new Setup Library is created or when associated with an imported client (see both topics on "Importing Clients" in Sections 12.3, *Data Transfer – Import/Export via Database Files* and 12.4, *Data Transfer – Import/Export via Text Files*). WARNING: Changing the Supply Library assigned to a Setup Library can cause confusion, unless the library has just been created. Even though the material assignments used in existing work orders will remain unchanged, the Supply Library and Setup Library designations in Audits and Work Orders may become inconsistent and make it difficult to distinguish where inventoried materials are being drawn from. Required.

Description – You may use this field to briefly describe the intended use of the Setup Library, particularly if you use more than one Setup Library in your agency. If you have multiple contracts for work with different costs, this field would be ideal to record the contractor's name, geographic area in which they work, etc. The entry may be 255 characters or less. Optional.

Comment – Comments related to the Setup Library may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Work Order Comment is displayed on the Work Order. Optional.

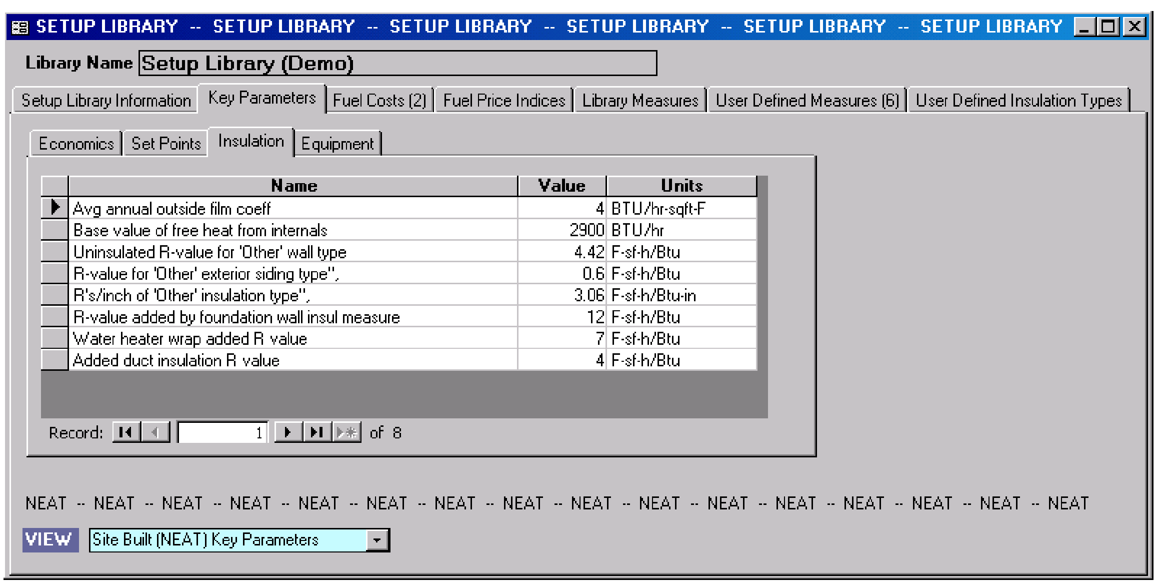
Setup Library Record Navigation Block – The Setup Library Record Navigation Block may be used to find and access setup libraries, delete existing libraries, or create a new library by copying and existing one. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. The combo box lists will display only setup libraries associated with your agency currently selected (bookmarked) on the Agency Information tab under the Agency Main Menu item. Normally the agency selected on this tab is your agency, so the combo box lists will display only your agency's setup libraries. If you have more than one agency defined in your database (e.g., you agency and the Sample

Agency) and you want the combo box lists to display setup libraries from all defined agencies, un-check the "Use the last bookmarked Agency record to filter find record lists," feature 9 from the Preferences / Features tab (see the indicated topic in Section 11.4, *Features*).

No Setup Library Report Block will be displayed on the Setup Library Information form unless you have defined Setup Library related reports with the external reporting feature (see Appendix B, *Weatherization Assistant Customized Reporting Feature Reference Document*).

9.2 Key Parameters

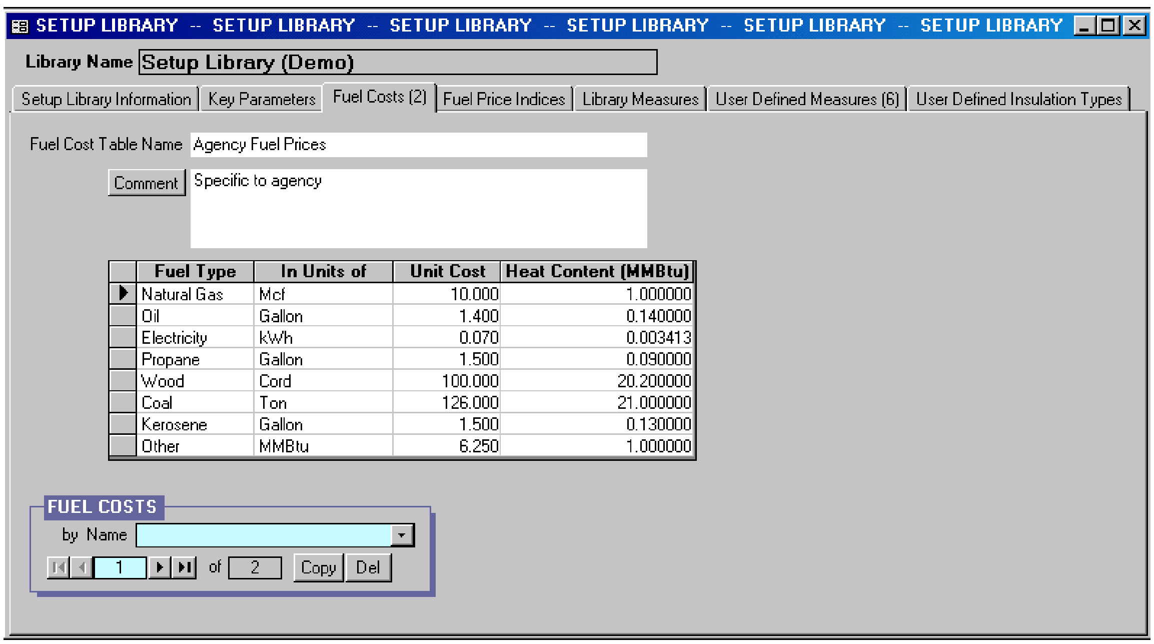
The Key Parameters tab in Version 8 of the Weatherization Assistant is unchanged from this tab in Version 7 with the exception that key parameters for both NEAT and MHEA are now accessible under the same Main Menu item. Choose which set of parameters you view by using the View combo box in the lower left corner of the Key Parameters form. A banner line just above the View combo box will indicate which set is currently being displayed (e.g., "MHEA - - MHEA - - MHEA..."). See the NEAT and MHEA Users Manuals for information regarding the individual parameters.



Key Parameters (Example from NEAT)

9.3 Fuel Costs

Use the form under the Fuel Costs tab of the Setup Library Main Menu item to record the average fuel prices in your agency's area. Each Setup Library now allows any number of fuel price tables to be entered. Use the Fuel Costs Record Navigation Block at the lower left of the form to locate, copy, or delete sets of fuel prices in your data base. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. Note that as few as one fuel may have a different price from one table to another. Use the Fuel Cost Table Name and Comment fields to identify the applicability of this particular set of fuel prices, particularly if you have multiple sets. The Name may be 80 characters or less. The Comment field has the same characteristics as other comment fields, allowing up to 65,000 characters.

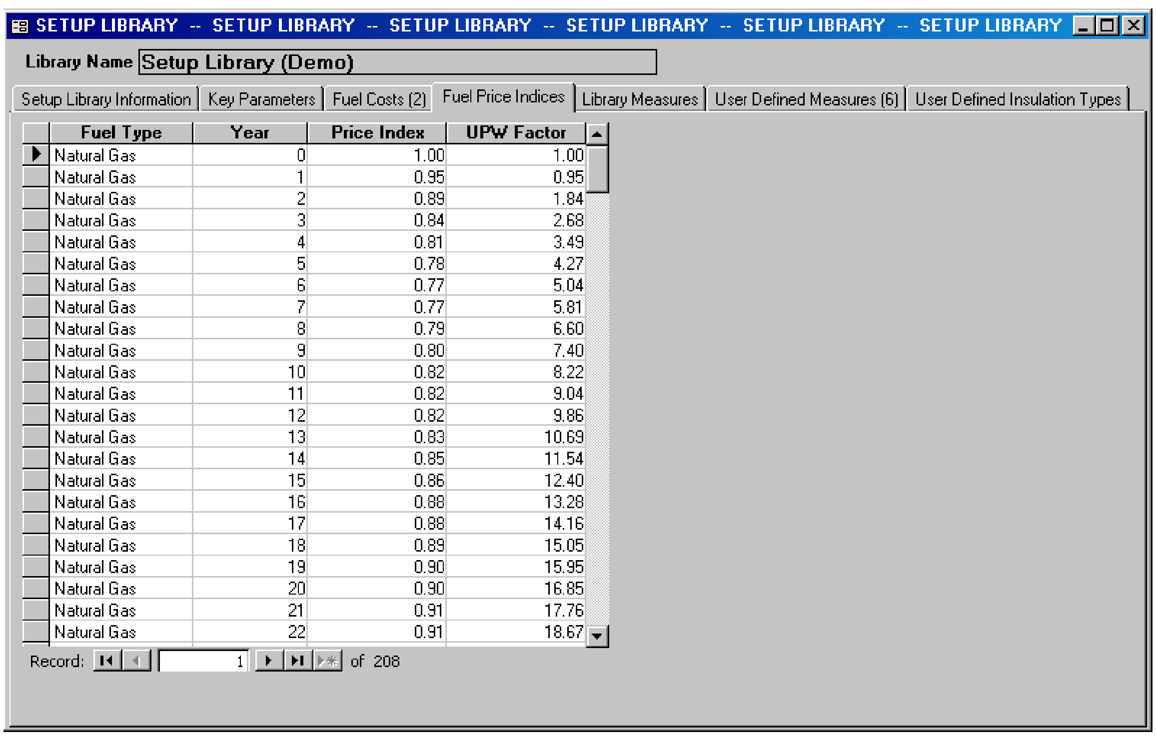


The Fuel Costs form

The costs are entered in the same manner as in Version 7. See the NEAT and MHEA Users Manuals for additional information regarding these entries. The Heat Content field has been added to Version 8. These values give the number of MMBtu (million British thermal units) derived from burning one unit of the fuel. These values have been set to industry standards and should be changed only if you have appropriate justification. Some natural gas companies post the heat content of their gas on their bills or would certainly be able to give you an average if contacted. They do vary, but normally not more than a few percent.

9.4 Fuel Price Indices

As in former versions of the Weatherization Assistant, Fuel Price Indices are used to adjust energy savings to account for anticipated changes in fuel prices over the life of measures installed in a dwelling. Those distributed with the program and viewed under this tab are national average indices, published annually by the Department of Commerce, for the year of the program's release (2005 for Version 8). Weatherization Program rules require these indices to be updated at least every five years. Thus, unless your release of the program is more than five years old, you do not need to make any changes in these entries.



SETUP LIBRARY -- SETUP LIBRARY -- SETUP LIBRARY -- SETUP LIBRARY -- SETUP LIBRARY -- SETUP LIBRARY

Library Name: Setup Library (Demo)

Setup Library Information | Key Parameters | Fuel Costs (2) | Fuel Price Indices | Library Measures | User Defined Measures (6) | User Defined Insulation Types

Fuel Type	Year	Price Index	UPW Factor
Natural Gas	0	1.00	1.00
Natural Gas	1	0.95	0.95
Natural Gas	2	0.89	1.84
Natural Gas	3	0.84	2.68
Natural Gas	4	0.81	3.49
Natural Gas	5	0.78	4.27
Natural Gas	6	0.77	5.04
Natural Gas	7	0.77	5.81
Natural Gas	8	0.79	6.60
Natural Gas	9	0.80	7.40
Natural Gas	10	0.82	8.22
Natural Gas	11	0.82	9.04
Natural Gas	12	0.82	9.86
Natural Gas	13	0.83	10.69
Natural Gas	14	0.85	11.54
Natural Gas	15	0.86	12.40
Natural Gas	16	0.88	13.28
Natural Gas	17	0.88	14.16
Natural Gas	18	0.89	15.05
Natural Gas	19	0.90	15.95
Natural Gas	20	0.90	16.85
Natural Gas	21	0.91	17.76
Natural Gas	22	0.91	18.67

Record: 1 of 208

The Fuel Price Indices form

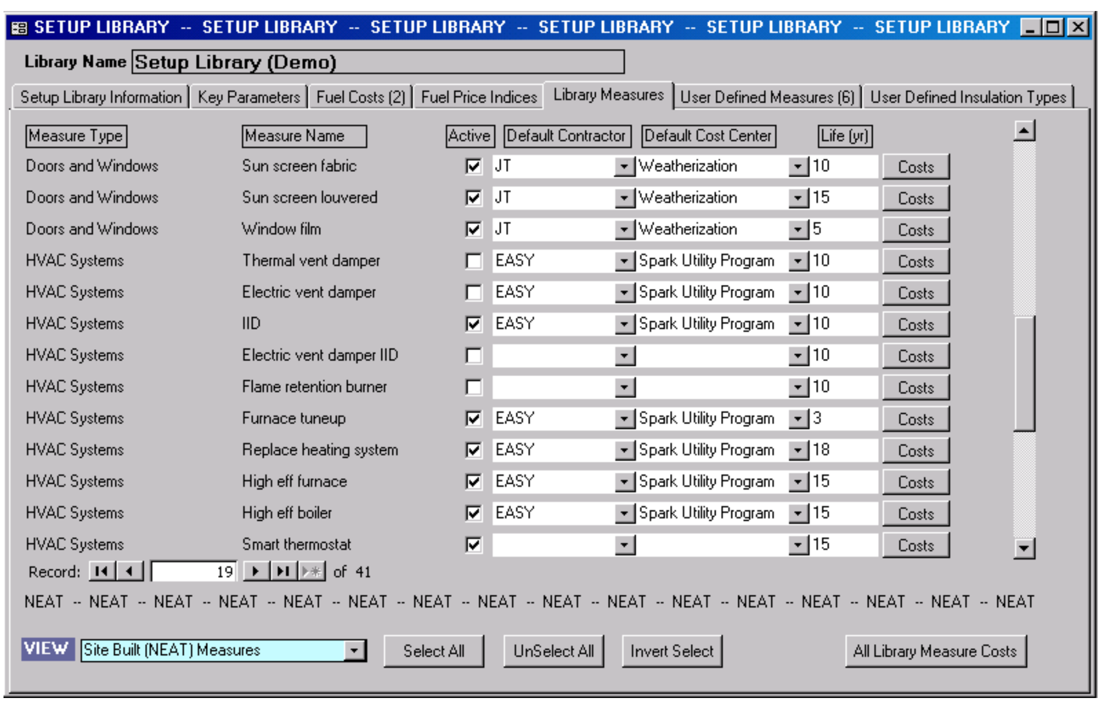
An added column of data is available in Version 8 under this tab, the UPW (Uniform Present Worth) Factor. This value is displayed for information purposes only. It is based on the Fuel Price Indices and other parameters and gives the factor by which the first year's energy dollar savings of a measure is to be multiplied by to obtain its "discounted" life-time dollar savings. The discounted life-time dollar savings of a measure is the value which, when divided by the cost of installing the measure, gives the savings-to-investment ratio (SIR) reported by NEAT and MHEA.

9.5 Library Measures

The Library Measures tab is where you enter information regarding the measures NEAT and MHEA considers installing in homes. The "Library" measures are differentiated from any you may define under the User Defined Measures tab (see Section 9.6, *User Defined Measures*). The format for entering this information in Version 8 differs from that in Version 7. Version 8 also has two additional optional entries, the Default Contractor and the Default Cost Center.

In previous versions, the entry of the material costs was not visibly linked with the measures which actually used the material. In version 8, however, each measure has its own sub-form for entering the material and labor costs incurred when installing the measure.

Both NEAT and MHEA measures are accessed under the same Library Measures tab of the Setup Library Main Menu item. Use the View combo box at the lower left of the form to choose which program's measures you display.



The Library Measures form

Below are brief comments related to the individual data entry items and controls on the Library Measures tab. Data entered on the measure Cost sub-forms will be discussed separately.

Measure Type (Un-editable) – Each NEAT and MHEA Library Measure is assigned a Measure Type. The Type is displayed on the Work Order Main Menu item's Measures tab for each library measure recommended (see Section 8.3, *Measures (Work Order)*). The Measure Type is not used in any standard reports, but can be used to sort the measure list displayed under Work Orders.

Measure Name (Un-editable) – This is the name the library measure will be identified by in all locations throughout the program, including Audits, Work Orders, and all reports that might be printed.

Active – Selection of this check box indicates your desire that the program consider this measure when forming its recommendations. Even if selected here, however, a measure will not be recommended unless it is cost-effective or is a measure that may be declared mandatory and is so designated within a specific audit. See additional information available in the separate NEAT and MHEA Users Manuals. The "Select All," "UnSelect All," and "Invert Select" buttons at the bottom of the form allow you to make all of the measures active, de-activate (unselect) all measures, or invert the selection currently seen from the check boxes.

Default Contractor – The Weatherization Assistant gives you the optional feature of designating the contractor who will install each measure. Measures recommended for the same dwelling but assigned different contractors will be automatically added to different work orders. The Default Contractor combo box allows you to assign a default contractor for each measure. This assignment can be changed either when the measure is recommended (see "Contractor" in Section 7.9, *Measures (Audit)*) or when assigned to a specific work order (see "Contractor/Crew" in Section 8.1, *Work Order Information*). Thus an entry here does not commit you to retain the assignment, but simply may reduce your effort making such assignments later.

The choices available from the combo box will include only those Agency Contacts declared as "Contractors" or "Crew" under the Contacts tab of the Agency Main Menu item for the agency associated with this Setup Library (see Section 5.2, *Contacts (Agency)*). Optional.

Default Cost Center – The Weatherization Assistant gives you the option to attribute costs incurred in installing measures to different Cost Centers or funding sources. The Default Cost Center combo box allows you to assign a default cost center for each measure. This assignment can be changed either when the measure is recommended (see "Cost Center" in Section 7.9, *Measures (Audit)*) or when assigned to a specific work order (see "Cost Center" in Section 8.3, *Measures (Work Order)*). Thus an entry here does not commit you to retain the assignment, but may reduce your effort making such assignments later.

The choices available from the combo box will include only those entries made under the Cost Center tab of the Agency Main Menu item for the agency associated with this Setup Library (see Section 5.3, *Cost Centers*). Cost Center assignments need to be made only if you are tracking funds within the Weatherization Assistant. Optional.

Life – NEAT and MHEA allow you to change the "Life" of each measure. The lifetimes in the programs as shipped reflect industry standards and will likely be sufficient for your use. However, if you have documented cause to alter them, you may do so on this form. Note that lifetimes for "Lighting retrofits" are in thousands of hours burn time for the replacement compact fluorescent, not years. The maximum lifetime permitted by Program rules is 20 years. Required.

Costs – Each measure listed on the Library Measures tab of the Setup Library Main Menu item has its own "Costs" button. Selecting this button for a specific measure will take you to a data sheet view where cost components for implementing the measure can be entered. These costs are those which the audits will use in making their recommendations. Although you may have them initially transferred to work orders, they likely do not represent as accurate or as detailed a costing scheme as you may wish to have for the work orders. Within Setup, the costs components are restricted to three entries: Material (or Insulation), Labor, and Other. Most of the insulation measures and the lighting retrofit measures have multiple materials that may be used in installing the measure–for example blown cellulose, blown fiberglass, or one of the User Types for insulating an attic, as demonstrated below..

Unit Costs for Measure: Attic insulation R30

Description	Type	Units		Unit$	<Comment>
Ceiling Insulation -Celluls,Blwn - R-30	Insulation	SqFt	--->	0.30	
Ceiling Insulation -Celluls,Blwn - R-30	Labor	SqFt		0.60	
Ceiling Insulation -Celluls,Blwn - R-30	Other	Each Attic		0.00	
Ceiling Insulation -Fbergls,Blwn - R-30	Insulation	SqFt	--->	0.33	
Ceiling Insulation -Fbergls,Blwn - R-30	Labor	SqFt		0.60	
Ceiling Insulation -Fbergls,Blwn - R-30	Other	Each Attic		0.00	
Ceiling Insulation -User Type 1 - R-30	Insulation	SqFt	--->	9999.00	Not considered unless user specifies cost
Ceiling Insulation -User Type 1 - R-30	Labor	SqFt		0.00	
Ceiling Insulation -User Type 1 - R-30	Other	Each Attic		0.00	
Ceiling Insulation -User Type 2 - R-30	Insulation	SqFt	--->	9999.00	Not considered unless user specifies cost
Ceiling Insulation -User Type 2 - R-30	Labor	SqFt		0.00	
Ceiling Insulation -User Type 2 - R-30	Other	Each Attic		0.00	

Record: 12 of 12

The "Costs" Data Sheet View for the Attic Insulation R-30 measure

In such instances, the first of the three components for each material has a right pointing arrow (–>) in a column between the Units and Unit$ columns to help you distinguish where one material ends and another begins.

The only data items which can be altered on the Costs Data Sheets are the Unit$ and the Comment. Enter into the Unit$ column the dollar cost per "Unit" for installing the material. Separate entries may be made for the dollar cost per unit to purchase the material and the dollar cost per unit for labor to install the material. Both NEAT and MHEA simply add these two quantities together (they always have the same "Units" associated with them) in determining the cost of installing the measure.

The third component to the cost for each material, "Other," will likely have different units than the material and labor components. Entry in this column may be handled differently in NEAT versus MHEA and may not be appropriate for most measures in NEAT. For example, an "Other" cost for an attic insulation measure in NEAT has units of "Each Attic," implying that this dollar cost will be added to the cost of insulating each individual attic segment, not to the total cost for insulating all of the attics in an entire dwelling. Only in the case of a home having a single attic segment qualifying for insulation would the entry have the likely intended purpose of a setup cost for equipment necessary to install the insulation. MHEA does not have the option to describe multiple attic segments for the mobile home, so doesn't suffer from this problem. The "Other" cost column in NEAT is more appropriately used for window treatments where you have an option to cost the measure per window ("Each") or per square foot of window area. See the NEAT and MHEA Users Manuals for more discussion on measure costing.

The Comment field is a standard comment field capable of storing 65,000 characters or less, even though only a few of these would be visible in this Data Sheet View. However, by double clicking your mouse on a particular Comment field, the Comment Editor window will open allowing better entry and viewing of longer comments. The comments entered here for each component of a measure cost will be copied to the component costs displayed for each measure seen using the Costs button on the Measures tab of the Audit Main Menu item if the measure gets recommended (see Section 7.9, *Measures (Audit)*). Also, the comment will be available on any work order that includes the measure using the material (see "Show/Hide Audit Material Detail" and "Create Materials Using Audit Detail" in Section 8.3, *Measures (Work Orders)*).

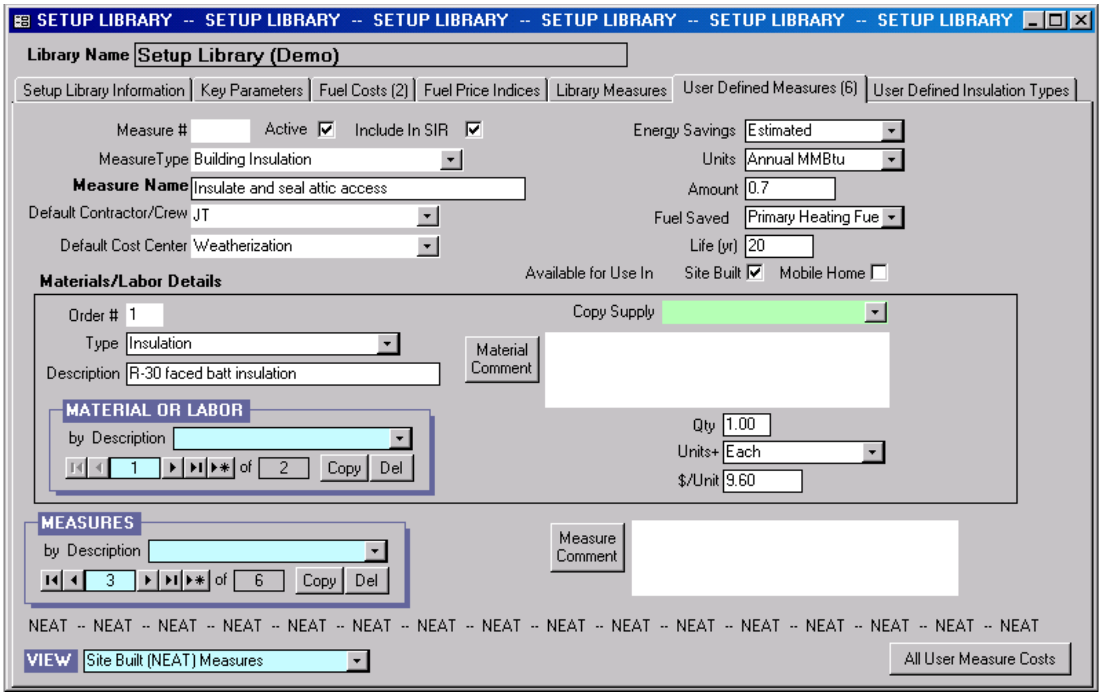
You may use the abbreviated Record Navigation Bar at the lower left of the window to move to other component entries. However, for most measures, all components associated with the measure fit into the Costs sub-form window, making it likely easier to simply use your mouse for this purpose.

All Library Measure Costs – Selecting the All Library Measure Costs button at the lower right of the form presents you with a form view of all measures' costing components in a single window. In the standard Setup of Version 8, there are a total of 353 costing components. Vertical scrolling will be necessary to see all of these components. This format may not be the most favorable for editing the costs. However, one key advantage of the form is that it allows you to quickly copy the cost table or any portion of the table to another location for printing or electronic mailing purposes (see Section 4.9, *Copying and Pasting Data*).

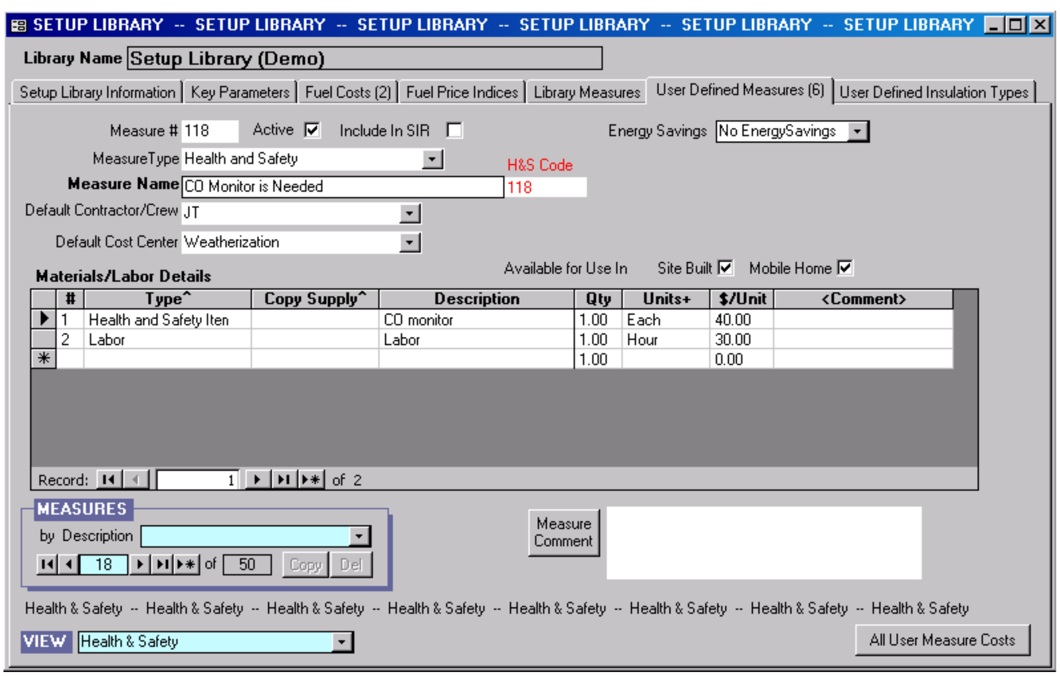
9.6 User Defined Measures

Under the User Defined Measures tab, you may pre-define weatherization activities that you commonly encounter but which are not addressed within the standard measures of the NEAT and MHEA audit programs. Defining these activities within Setup allows you to copy them to any audit (see Section 7.7, *Itemized Costs*) or work order (see "Copy from User-Defined Measures" in Section 8.3, "*Measures (Work Order)*). All entries made in pre-defining a measure here in Setup get copied to a work order, whether the request to copy came directly from the work order itself or a user-defined measure that was passed through an audit, then used to create a work order (see Section 7.9, *Measures (Audit)*).

The measures accessible from this User Defined Measures tab may be divided into two major categories: those which are truly "User-Defined" and the "Health and Safety" measures. The latter are not actually user-defined since they come with the program. Although their names can be altered by the user, they cannot be deleted since these are the measures associated with specific health and safety hazards which may be observed during an audit (see "Handling of Health and Safety Issues" under Section 7.6, *Health and Safety*).



The User Defined Measures form
(with energy savings, Materials/Labor Details sub-form in Form View)

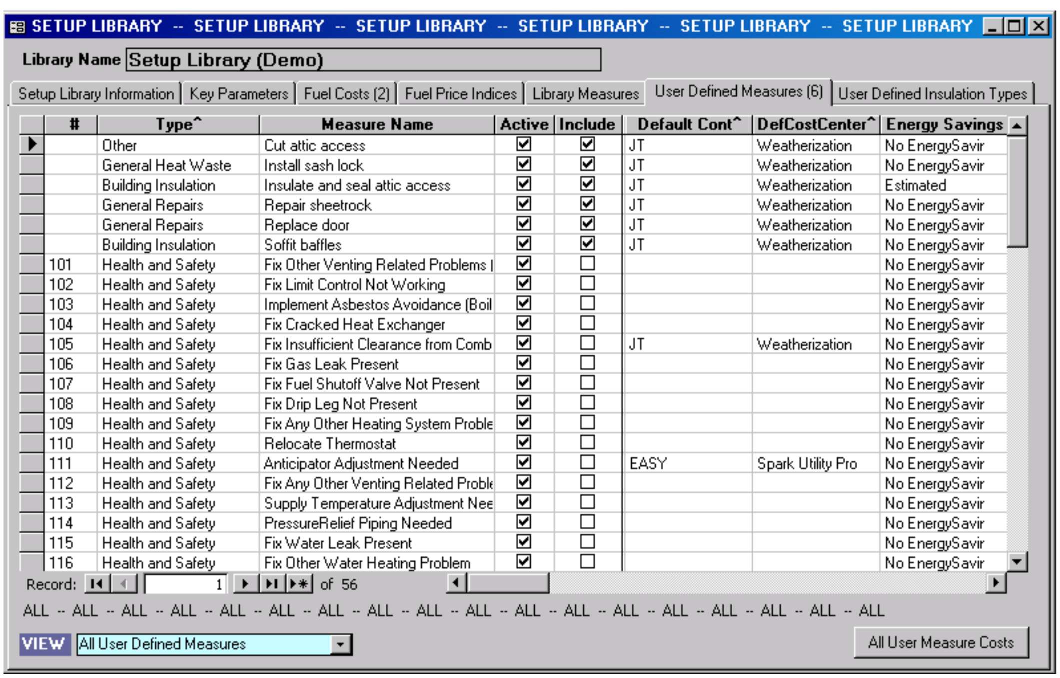


The User Defined Measures form
(Health & Safety measure, Materials/Labor sub-form in Data Sheet View)

Measures which you define (those other than the Health and Safety measures) can be divided into two categories: those with associated energy savings and those without (considered simply "Itemized Costs"). Those for which you have energy savings will be considered exactly as any of the Library Measures defined in the program. They will be ranked by SIR and recommended if their SIR meets the established criteria. Additional input is required for this type of user-defined measure, as described below.

The User Defined Measures form of Setup is very similar to the Measures form for the Work Orders (see Section 8.3, *Measures (Work Order)*), which receives the pre-defined measure when copied to it. Both forms, when viewed in Form View, are divided into two areas, the general task description area and a Materials/Labor Details sub-form. This latter sub-form is multi-component, allowing any number of material or labor components to be associated with each user-defined measure.

Both the general task description area, viewed under the User-Defined Measures tab, and the sub-form on this form can be viewed in either Form View or Data Sheet View (see Section 4.8, *Data Sheet and Form Views of Records*). The Data Sheet View allows you to see more of the records at one time, possibly making it easier to locate a particular record. However, the detail involved in each make it normally more feasible to make changes while in the Form View, which will be assumed in the discussion below.



#	Type^	Measure Name	Active	Include	Default Cont^	DefCostCenter^	Energy Savings
	Other	Cut attic access	☑	☑	JT	Weatherization	No EnergySavir
	General Heat Waste	Install sash lock	☑	☑	JT	Weatherization	No EnergySavir
	Building Insulation	Insulate and seal attic access	☑	☑	JT	Weatherization	Estimated
	General Repairs	Repair sheetrock	☑	☑	JT	Weatherization	No EnergySavir
	General Repairs	Replace door	☑	☑	JT	Weatherization	No EnergySavir
	Building Insulation	Soffit baffles	☑	☑	JT	Weatherization	No EnergySavir
101	Health and Safety	Fix Other Venting Related Problems I	☑	☐			No EnergySavir
102	Health and Safety	Fix Limit Control Not Working	☑	☐			No EnergySavir
103	Health and Safety	Implement Asbestos Avoidance (Boil	☑	☐			No EnergySavir
104	Health and Safety	Fix Cracked Heat Exchanger	☑	☐			No EnergySavir
105	Health and Safety	Fix Insufficient Clearance from Comb	☑	☐	JT	Weatherization	No EnergySavir
106	Health and Safety	Fix Gas Leak Present	☑	☐			No EnergySavir
107	Health and Safety	Fix Fuel Shutoff Valve Not Present	☑	☐			No EnergySavir
108	Health and Safety	Fix Drip Leg Not Present	☑	☐			No EnergySavir
109	Health and Safety	Fix Any Other Heating System Proble	☑	☐			No EnergySavir
110	Health and Safety	Relocate Thermostat	☑	☐			No EnergySavir
111	Health and Safety	Anticipator Adjustment Needed	☑	☐	EASY	Spark Utility Pro	No EnergySavir
112	Health and Safety	Fix Any Other Venting Related Proble	☑	☐			No EnergySavir
113	Health and Safety	Supply Temperature Adjustment Nee	☑	☐			No EnergySavir
114	Health and Safety	PressureRelief Piping Needed	☑	☐			No EnergySavir
115	Health and Safety	Fix Water Leak Present	☑	☐			No EnergySavir
116	Health and Safety	Fix Other Water Heating Problem	☑	☐			No EnergySavir

The User Defined Measures form (Data Sheet View, All Measures)
(left-most columns)

The discussion of the general task description area and the Materials/Labor Details sub-form will be kept separate in order to distinguish information which relates to a measure in general from the detailed materials or labor efforts which make up the measure implementation.

The General Task Description

Brief descriptions of the individual data items and controls in the general task description area will be given here, followed by a discussion of the Materials/Labor Details sub-form.

Measure # – An integer entry which prescribes the order in which the measures are displayed in Setup. Any measures not given a measure number will be listed first, but all those without a number will have random order amongst themselves. If the measure numbers are changed, Setup must be exited and re-entered before the changes will automatically be reflected in the ordering. When in Data Sheet View, the ordering of the measures may be temporarily changed using the Sort feature (see 4.8, *Data Sheet and Form Views of Records*), but this ordering will be lost once Setup has been exited.

The program-defined Health and Safety Measures have pre-defined Measure Numbers beginning with 101 and increasing consecutively. It would likely cause you confusion to alter these or to define your own user-defined measure with one of the same numbers. Optional.

Active – This check box allows a measure to be de-activated (un-checked), which prevents it from being accessible from either the Audit or Work Order Main Menu items. If de-activated, it would be wise to include a Comment indicating the reason for the measure's rejection. Use of this check-box is one means of selecting which of the program's Health and Safety measures get automatically recommended when audit inspections identify the related hazardous condition (see "Handling of Health and Safety Issues" under Section 7.6, *Health and Safety*).

Include in SIR - This entry pertains to the Recommended Measure Report available from the Audit Main Menu item. If this check box is selected, the itemized cost measure will appear at the top of this report's list of measures and will be included in the cumulative cost and SIR for the entire home. If you choose not to include the cost in the SIR, the cost is placed at the end of the measure list. The cost is added to the cumulate cost, but not used to compute the cumulative SIR.

You must select "Include in SIR" if the record you are entering is to describe an actual user-defined measure with energy savings associated with it, as opposed to an Itemized Cost.

Measure Type – The Measure Type field allows you to assign a type to each measure. Your choices are: (1) Baseloads, (2) Building Insulation, (3) Client Education, (4) Doors and Windows, (5) General Heat Waste and Air Infiltration, (6) General Repairs, (7) Health and Safety, (8) HVAC Systems, and (9) Other. The program-defined Health and Safety Measures have "Health and Safety" declared as their Type. Although the program allows you to alter this designation, it would likely be misleading to do so. The Measure Type does not appear in any reports, but could be used to sort the measures either here in Setup or in a particular work order if the Measure eventually gets included there. Optional.

Measure Name – If you are defining your own measure, enter a unique name for the measure in this field by which it will be identified elsewhere in the program. The program-defined Health and Safety Measures already have Measure Names assigned. Although you may alter these names as well, these measures' associations with hazards identified during an audit will not change. Any re-naming of these measures would have to take this into account. An indication that you are accessing one of the program-defined Health and Safety Measures will be the appearance of an extension to the Measure Name field in which a number will be displayed in red with the text "H&S Code," also in red, printed above it. This code cannot be changed. Initially it is the same as the Measure # for the measure, which is the reason the recommendation was made to not change the Measure #s for the Health and Safety Measures. Required.

Default Contractor/Crew - If you wish to pre-assign a measure to a specific contractor or crew, enter this indication here. The choices in the combo box list for this field will be those entries on the Contacts tab under the Agency Main Menu item which have been designated as either "Contractor" or "Crew" (see Section 5.2, *Contacts (Agency)*). This information will be carried with the measure anytime it is copied to an Audit, although it may then be changed. Anytime a measure is copied to a Work Order, it will automatically be assigned the Contractor or Crew affiliated with that work order. Optional.

Default Cost Center – If you are tracking costs that are incurred by different funding sources or programs, the Cost Center is that source of funding to which the actual cost of implementing the measure will be charged. Cost Centers are defined under the Cost Centers tab of the Agency Main Menu item for your agency (see Section 5.3, *Cost Centers*). The Cost Center entered here will be carried with the measure anytime the measure is copied to an Audit or Work Order, although it may be changed in either of these locations. Optional.

Energy Savings – Indicate in this field whether you have an estimate of annual energy savings to associate with the User-Defined Measure being described. Otherwise, the record is viewed as an Itemized Cost without energy savings. Your selection here determines whether additional fields will be displayed below this one in which information necessary to define an energy efficiency measure is to be entered. [NOTE: As of the initial release of Version 8, in order to have energy information associated with a user-defined measure transferred to a work order, the measure must have been implemented into either the NEAT or MHEA audits which was then used to create the work order.]

The following entries are displayed only if "Estimated" has been chosen in the Energy Savings entry above. All entries are then required.

Units – Enter the units of the annual energy savings to be assigned to the measure. Choices are: Annual kWh, Annual MMBtu (million Btu), and Annual Therms. Required.

Amount – Enter the numeric value of the amount of annual energy to be saved, in the units indicated in the previous field. Required.

Fuel Saved – Enter the type of fuel to be saved. Choices are: Primary Heating Fuel, Water Heating Fuel, Natural Gas, Oil, Electricity, Propane, Wood, Coal, Kerosene, and Other. For the choices of Primary Heating Fuel and Water Heating Fuel, the program will set the fuel type to be the same as the fuel used by the primary heating system and water heater, respectively, as prescribed in the audit into which the measure is copied. Required.

Life – Enter the expected life of the measure being installed. DOE rules do not allow measure life times over 20 years. Required.

Available for Use In – Select the check boxes that indicate which building type(s) the measure should be made available, Site Built and/or Mobile Home.

Measure Comment – Comments related to the measure on the User Defined Measures form may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Measure Comment on this form will be carried along with the measure, where ever it is copied, through an audit to a work order or directly to a work order. Optional.

All User Measure Costs – Selecting this button will display all of the costs associated with all of the user-defined measures, including the Health & Safety measures, in Data Sheet View. The columns displayed have the same definitions as given above for viewing individual measures in Form View. Since each measure may have any number of costing components, the first cost associated with a measure is indicated by a right pointing arrow (–>) in the column just to the left of the Unit$ column. Changes may be made in this view instead of the Form View, if desired.

Cost Detail for all user defined measures

NEAT	MHEA	#	Measure Name	Material Description	Type	Units		Unit$	<Comment>
☐	☑		Belly repair (400 sqft or less)	Material for repair of belly	Construction Materials/Hardware	Eac	--->	75.00	Likely necessary prior to blowing bell
☐	☑		Belly repair (400 sqft or less)	Labor for repair of belly	Labor	Hou		25.00	
☑	☑		Cut attic access	Misc materials	Construction Materials/Hardware	Eac	--->	75.00	
☑	☑		Cut attic access	Cut ceiling for new attic panel	Labor	Hou		25.00	
☑	☑		Install exhaust fan	Exhaust fan	Construction Materials/Hardware	Eac	--->	140.00	
☑	☑		Install exhaust fan	Labor - installing exhause fan	Labor	Eac		160.00	
☐	☑		Install ground moisture barrier	8 mil black poly under belly	Construction Materials/Hardware	Eac	--->	25.00	
☐	☑		Install ground moisture barrier	Install	Labor	Hou		25.00	
☑	☑		Install sash lock	Sash Lock	Construction Materials/Hardware	Eac	--->	1.50	
☑	☑		Install sash lock	Labor - crew member	Labor	Eac		8.00	
☑	☑		Install smoke alarm	Smoke alarm	Health and Safety Items	Eac	--->	15.00	
☑	☑		Install smoke alarm	Labor for installing smoke alarm	Labor	Eac		5.00	
☑	☐		Insulate and seal attic access	R-30 Faced batt insulation	Insulation	Eac	--->	9.60	
☑	☐		Insulate and seal attic access	Labor for attic access	Labor	Eac		20.00	
☑	☑		Perform draft test	Perform worst case draft test	Labor	Eac	--->	13.00	
☑	☑		Repair sheetrock	Patch	Construction Materials/Hardware	Eac	--->	12.00	
☑	☑		Repair sheetrock	Setup	Labor	Eac		50.00	

Record: 2 of 121

The All User Measures Cost form

Measures Record Navigation Block – The Measures Record Navigation Block in the lower left corner of the form allows you to find, copy, delete, or navigate to measures in the Setup Library being accessed. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. The combo box list will display all measures currently associated with the library of the type chosen in the View combo box below the field. You may initiate a new measure by using the new record button, ▸*, in the block.

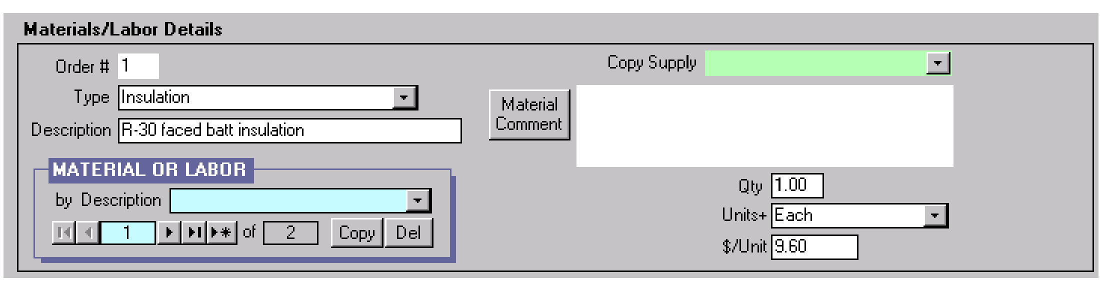
View - Use this combo box to indicate which type of measures you wish to have displayed in the Measure Record Navigation Block above or in the Data Sheet View of the form. The choices are: Site Built (NEAT) Measures, Mobile Home (MHEA) Measures, Health and Safety, or All User Defined Measures.

The Materials/Labor Details Sub-Form

The Materials/Labor Details sub-form allows entry of as much information for individual materials and labor components as you feel necessary to sufficiently describe implementation of each measure. The level of detail included is totally up to the user. A measure may even be defined with no detail and still be available to an audit (see Section 7.7, *Itemized Costs*) or work order (see "Copy from User-Defined Measures," Section 8.3, *Measures (Work Order)*). However, if copied into an audit or assigned to a work order, the measure must then have some cost designated in the audit or work order. Although the Health and Safety measures cannot be deleted, their Material/Labor Details may also be modified to meet your needs. They also must have at least one material detail entry with cost or the program will produce an error message if the program attempts to automatically use the measure as a result of a hazard noted in an audit (see "Handling of Health and Safety Issues" in Section 7.6, *Health and Safety*).

The Materials/Labor Details sub-form is also where you indicate use of materials from your Supply Library (see Chapter 10, *Supplies*) which then get subtracted from your inventory whenever the measure is used in a work order and its costs declared "Actual."

Below are descriptions of each individual data entry item or control involved in specifying the measure detail on the Materials/Labor Details sub-form. As already noted, this sub-form has multiple components and may be viewed in either Form View or Data Sheet View (see Section 4.8, *Data Sheet and Form Views of Records*). Although both views allow full capabilities in entering data, the Form View is likely somewhat easier to understand since the controls have their standard appearance and do not need to be cast in a spreadsheet format. Therefore, this view will be assumed in the following descriptions. However, the alternate Data Sheet View still offers the ability to quickly see all components of the measure detail at once, not possible from the Form View.



The Materials/Labor Details sub-form

When a User Defined Measure is copied directly from the Setup Library to a Work Order (see "Copy from User-Defined Measures" in Section 8.3, *Measures (Work Order)*), all Material/Labor Details from the measure's material sub-forms are copied with it. If the measure is copied to an audit (see Section 7.7, *Itemized Costs*), then used in creating a work order from the audit, the information on the measure's material sub-forms will be carried to the work order if the user so requests (see Section 7.9, *Measures (Audit)* or Section "Create Materials Using Audit Detail" in Section 8.3, *Measures (Work Order)*).

Order # - An integer entry which prescribes the order in which the costing components of the measure will be listed on a work order when the measure is implemented (see "Order #" in Section 8.3, *Measures (Work Order)*). Any components not given an order number will be listed first on the work order, but all those without a number will have random order amongst themselves.

If the measure being described here in the Setup Library is copied to an audit (see Section 7.7, *Itemized Costs*) and it has more than one Material/Labor Detail component, only one of these components can be displayed on the audit's form, even though all will get carried along with the measure. The audit will choose the detail component with Order # of "1" then add a "(+)" after the detail name in the audit indicating additional detail is associated with the measure. The exception to this convention is if the detail Description (see below) is "Labor" or "Equipment," since this latter designation was used in the Health and Safety measures to indicate a nondescript detail whose inclusion on the audit form would not be of benefit. Optional.

Type - If you are using the Supply Library (see Chapter 10, *Supplies*) to store information about materials you use in your weatherization activities and possibly taking advantage of the Weatherization Assistant's inventory feature, select the category under which the material is listed in the library. With the exception of "Unspecified," these selections correspond to the material categories in the Supply Library. The choices are:

Cooling Equipment	Labor
Construction Materials/Hardware	Lighting
Doors	Miscellaneous Supplies
Health and Safety Items	Refrigerators
Heating Equipment	Windows
Hot Water Equipment	Other
Insulation	Unspecified

The entry is used to narrow your search for the material when using the Copy Supply combo box list at the upper right corner of the sub-form. If you do not plan to locate this material detail component in your Supply Library, this entry may be left blank or designated as "Unspecified." Optional (unless locating the material in your Supply Library).

Copy Supply - This entry is used in conjunction with the Type entry on the sub-form to locate a specific material from your Supply Library (see Chapter 10, *Supplies*). Selecting the material using this combo box will automatically fill in most of the remaining fields on the sub-form, provided you have specified the analogous entries in the Supply Library. Locating a material from the Supply Library is essential if you are using the inventory feature of the program for the specific material being described. The Health and Safety measures have pre-entered materials, but none that reference a Supply Library. If you wish to have these measures reference Supply Library materials, make that association here. Optional.

Description – Enter a brief description of the component detail of the measure. If the Copy Supply field was used to select the material, this field will be automatically entered. In such cases, you may change the description, but it may complicate your ability to identify the item as one tracked in your inventory. The Health and Safety measures have pre-entered material Descriptions, though you may change them here. The entry may be 80 characters or less. Required.

Qty (Quantity) – This is an estimate of the quantity of the material entered in the Description field needed to install the measure currently being considered, in the units also entered on the form. This value will be copied to a work order or carried through an audit to a work order if the measure using the specific Material/Labor Details entry becomes part of a work order. However, you may alter this value in the work order if a new, more accurate estimate becomes available. When you create a new User Defined Measure using the new record button, ▸*, from the Measures Record Navigation Block a default value of "1.00" will automatically be entered. Alter this value as needed. Required.

Units - Enter the units to be associated with the Quantity field on the sub-form. WARNING: If the detail entry was copied from the Supply Library using the Copy Supply combo box, do not change the Unit entry which is automatically entered. The inventory kept in the Supply Library will expect the Quantity and $/Unit entries on the sub-form to be in these original units. Required.

$/Unit – This is an estimate of the cost per unit (as given in the Units field) of the material entered in the Description field (or selected from your Supply Library) needed to install the measure currently being considered. Required.

Material Comment – Comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Material Comment is carried along with the other material information on the sub-form associated with a measure, as discussed above. Optional.

9.7 User Defined Insulation Types

This form allows you to name and characterize two wall and ceiling insulation types of your choice for use in the NEAT audit. Its form has not changed from that seen in Version 7 of the Weatherization Assistant. See the same topic in the NEAT User's Manual for more details.

Chapter 10

The Supply Library offers you the optional feature of listing materials or labor components related to your weatherization work. If you use the inventory feature of the Weatherization Assistant, the Supply Library becomes your mechanism for tracking your inventory. It provides you with a means of recording material purchases, tracks use of the materials through the work orders, and tallies up your total remaining items. An additional optional element of the Supply Library is the Energy Details tab present for most material categories that allows you to record additional energy-related descriptive data regarding each entry in your Supply Library.

Items in your Supply Library are accessed in several places throughout the program, though none are required for nominal operation of the audits and/or the creation of work orders. See Section 10.3, *The Hot Water Equipment and Refrigerator Forms* for a possible exception related to water heater replacement.

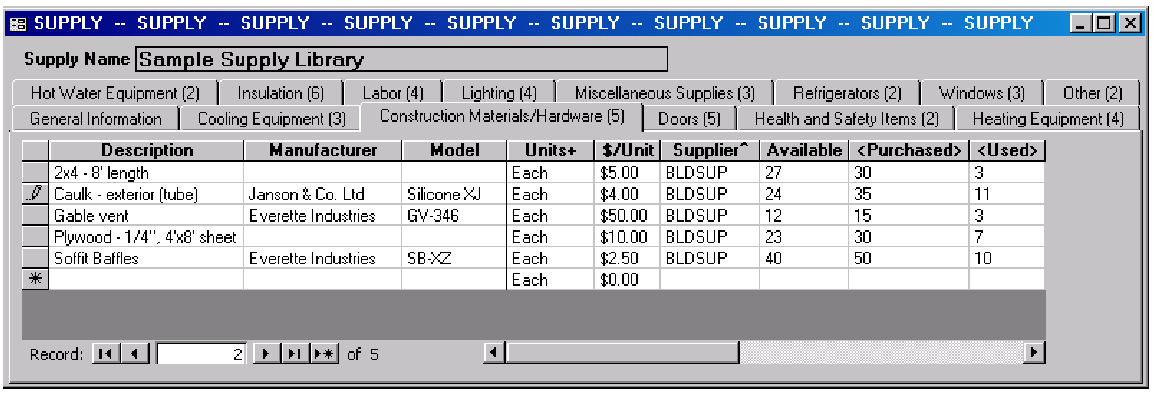
If you create pre-defined, user-defined measures in your Setup Library (see Section 9.6, *User Defined Measures*), you may designate materials needed to install these measures as those from your Supply Library (see "Copy Supply" under "The Materials/Labor Details Sub-Form" in the above reference).

The NEAT and MHEA audits use the Supply Library as a repository for replacement refrigerators and water heaters that can be easily referenced from the Baseloads tabs in these audits. It is envisioned that the user would visit a home building supply store and choose from their stock the units to be used in weatherization and enter the unit descriptions here in the Supply Library. See the NEAT and MHEA User's Manuals for more details.

Materials from the Supply Library may also be referenced directly from the Work Order forms when specifying the materials needed in generating detailed work orders (see "Copy Supply" under "The Materials/Labor Details Sub-Form" in Section 8.3, *Measures (Work Order)*).

You will likely need only one Supply Library, though any number of Supply Libraries may be defined for an Agency. More than one Supply Library might be used if materials are stored in multiple locations and you wish to track the inventory at these locations separately. However, you would need to be continually aware of this situation and know when a given library should be referenced. Thinking of the Supply Library as an inventory of items may help you determine if more than one library is necessary and how more than one should be used.

Thirteen categories of items are available for entering into your inventory: Cooling Equipment, Construction Materials/Hardware, Doors, Health and Safety Items, Heating Equipment, Hot Water Equipment, Insulation, Labor, Lighting, Miscellaneous Supplies, Refrigerators, Windows, and Other. Examples of entries in each may be found in the Sample Supply Library assigned to the Sample Agency. These are only examples, however, and not intended to be used in your actual program.


SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY

Supply Name Sample Supply Library

Hot Water Equipment (2) | Insulation (6) | Labor (4) | Lighting (4) | Miscellaneous Supplies (3) | Refrigerators (2) | Windows (3) | Other (2)

General Information | Cooling Equipment (3) | Construction Materials/Hardware (5) | Doors (5) | Health and Safety Items (2) | Heating Equipment (4)

Description	Manufacturer	Model	Units+	$/Unit	Supplier^	Available	<Purchased>	<Used>
2x4 - 8' length			Each	$5.00	BLDSUP	27	30	3
Caulk - exterior (tube)	Janson & Co. Ltd	Silicone XJ	Each	$4.00	BLDSUP	24	35	11
Gable vent	Everette Industries	GV-346	Each	$50.00	BLDSUP	12	15	3
Plywood - 1/4", 4'x8' sheet			Each	$10.00	BLDSUP	23	30	7
Soffit Baffles	Everette Industries	SB-XZ	Each	$2.50	BLDSUP	40	50	10
			Each	$0.00				

Record: 2 of 5

The Construction Materials/Hardware Materials form (Data Sheet View)
"Note: Above is example for one category of material. Comment" field not displayed

Each of the material category tabs under the Supply Library Main Menu item may be viewed and edited in either Form and Data Sheet Views (see Section 4.8, *Data Sheet and Form Views of Records*). However, none of the Energy Details are available from the Data Sheet View. Nevertheless, the Data Sheet View offers a convenient way of reviewing the materials in your library, especially if it grows large. Records in the view may also be copied and pasted either between Weatherization Assistant databases or from the program to a spread sheet application.

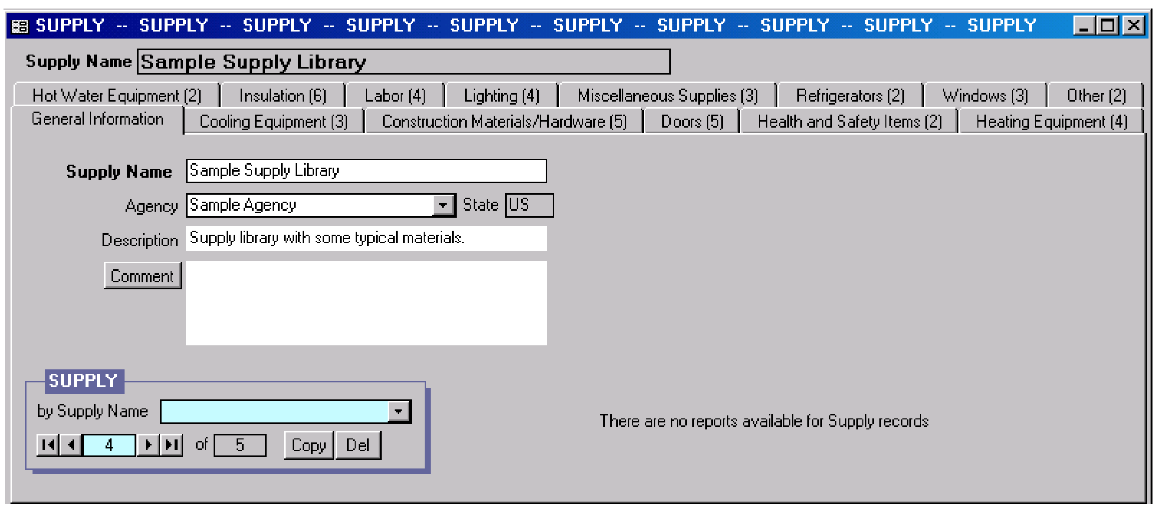
10.1 General Information

The entry items and controls on the General Information tab of the Supply Library Main Menu item are described below. Common entries and controls on each of the categories' forms are described in the following section.

<u>Supply Name</u> – Enter a name which will identify this particular Supply Library throughout the program. Most often, an agency will have only one Supply Library. If more than one is created, the name may contain an abbreviated indication as to why one differs from another. Save any lengthier explanations for the Description and Comment fields. A default name will be supplied when a new Supply Library is

created. The name will use your installation's ID (see Section 3.3, *Starting the Weatherization Assistant*), if available. Otherwise the default name will contain the time the library was created. The entry may be 50 characters or less. Required.

Agency – This field identifies the agency to which the Supply Library is associated. Since the only way to create a new Supply Library is to copy an existing one or import one with a client (see both topics on "Importing Clients" in Sections 12.3, *Data Transfer – Import/Export via Database Files* and 12.4, *Data Transfer – Import/Export via Text Files*), this entry will always be at least initially filled in for you. The field is more for identification purposes, possibly on a state level, identifying the agency within the state using the materials in the library. WARNING: The program allows you to change the Agency assignment of a Supply Library. However, doing so when existing Setup Libraries, audits, or work orders use the Supply Library will likely cause confusion. Therefore, re-assigning the agency assignment of a Supply Library is not recommended unless the library has just been created, insuring no other references to it exist. Required.



The General Information form

State – This un-editable field displays the state associated with the Agency entered in the previous field.

Description – You may use this field to briefly describe the intended use of the Supply Library, particularly if you use more than one Supply Library in your agency. The entry may be 255 characters or less. Optional.

Comment – Comments related to the Supply Library may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's

Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. The Supply Library Comment is not displayed anywhere else in the program and is for the user's benefit only. Optional.

Default (Un-editable) – The "Default Supply Library" assigned to the Sample Agency is an empty Supply Library that is distributed with the program. It cannot be altered. It is intended that you copy this library, assign the copy to your agency, then populate this copy with materials specific to your agency. This field is visible only for the "Default Supply Library."

Supply Library Record Navigation Block – The Supply Library Record Navigation Block may be used to find and access supply libraries or copy or delete existing libraries. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. The combo box lists will display only the Supply Libraries associated with the Agency currently selected (bookmarked) on the Agency Information tab under the Agency Main Menu item. Normally the agency selected on this tab is your agency, so the combo box lists will display only your agency's Supply Libraries. If you have more than one agency defined in your database (e.g., your agency and the Sample Agency) and you want the combo box lists to display Supply Libraries from all defined agencies, un-check the "Use the last bookmarked Agency record to filter find record lists," feature 9 from the Preferences / Features tab (see the indicated topic in Section 11.4, *Features*).

No Setup Library Report Block will be displayed on the Setup Library Information form unless you have defined Setup Library related reports with the external reporting feature (see Appendix B, *Weatherization Assistant Customized Reporting Feature Reference Document*).

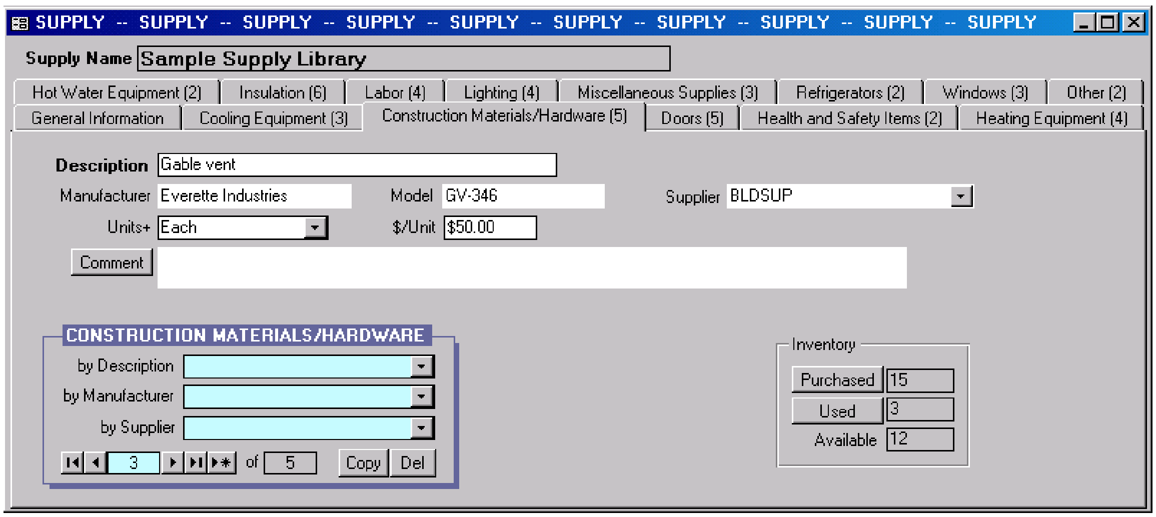
10.2 Common Entries on Material Forms

The following entry items and controls are common to most of the category tabs in the Supply Library. Exceptions are noted in square brackets following the field or control name. Additional discussion related to the Hot Water Equipment and Refrigerator forms is given in Section 10.3 below.

Description – Enter a description of the item or labor category. You may examine the Sample Supply Library under the Sample Agency for examples. Entries may be 80 characters or less. Required.

Library – This check-box is visible only for the Default Supply Library. See Section 10.5, *The Default Supply Library Record* for more information.

Manufacturer [except Labor] – Enter the name of the manufacturer of the item. Your inventory may contain multiple entries for the same item but manufactured by different companies. Entry may be 50 characters or less. Optional.



The Construction Materials/Hardware Materials form (Form View)
Note: Above is example for one category of material.

Model [except Labor] – Enter the model of the item being described. Your inventory may have multiple entries of a specific item type but of varying models. You may alternatively decide to include model information in the Description. Entries may be 50 characters or less. Optional.

Supplier [except Labor] – Choose the Supplier of the material being described. Choices in the combo box list will be those Agency Contacts declared as "Supplier" on the Contacts tab under your Agency Main Menu item. Optional.

Units – Enter the units by which the item is costed. The choices are: Each, Hour, Bag, Roll, Sqft, Linear Foot, Inch, Pound, Case, Box, United Inch. The units for materials in the Supply Library do not need to be the same as those used in the audits. However, you would need to convert the quantity required yourself when translating the audit recommendation to a task in a work order. If this is undesirable, care should be taken to set the Units here to be the same as those used in the audits. Required.

$/Unit – Enter the cost of the item in the Units entered in the previous field. Both the Units and the $/Unit will be copied to any use of the item in the Work Orders. Required.

Comment – Supply material comments may be entered directly in the comment field on the form. Or, select the Comment button to the left of the field, which will take you to the Comment Editor. This text editor is similar to Window's Notepad and may be used to edit extended comments. The total comment may have up to 65,000 characters. Text from other sources may be copied and pasted into the Comment Editor's window. Supply material Comments are carried with the material when ever the material is used in a User Defined Measure of Work Order. You may also wish to include the comment in a user-designed report. Optional.

Supply Item Record Navigation Block – The supply item Record Navigation Block, located at the bottom left of each material category tab, may be used to find, access, copy, delete, or initiate new materials under the category being referenced. See Section 4.1, *Record Navigation*, for information on using the Weatherization Assistant's Record Navigation Blocks. The listings of items in a given category may be ordered by their Description, Manufacturer, or Supplier in the combo box lists of the navigation block.

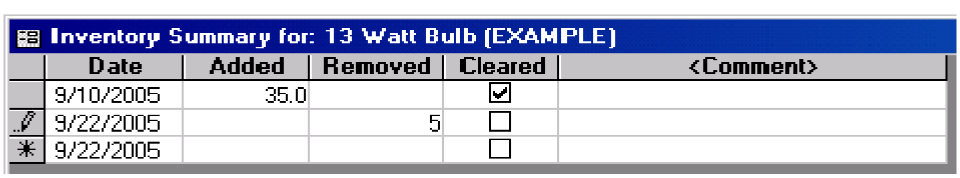
View – This combo box is visible only for the Default Supply Library. See Section 10.5, *The Default Supply Library Record* for more information.

The following data items and buttons fall under the Inventory data block positioned in the lower right corner of all material category tabs except Labor.

Inventory Control Block

Purchased (data item) – This un-editable value indicates the accumulated number of the item you have indicated as having been purchased.

Purchased (button) – This button takes you to a data sheet displaying all your entries documenting purchases or removal of the item currently being accessed.



Inventory Summary for: 13 Watt Bulb [EXAMPLE]

Date	Added	Removed	Cleared	<Comment>
9/10/2005	35.0		☑	
9/22/2005		5	☐	
9/22/2005			☐	

Inventory Purchase / Removal Summary

Enter the date of purchase or removal, the number of items (in the units displayed on the parent form) purchased or removed, and any comment which you may wish to associate with the entry. Only entries "Cleared" will actually affect the inventory.

Uncleared entries may be anticipatory, rather than actual. The current date is the default, though this may be changed. Items "Removed" are in addition to those which will automatically be removed by use in work orders (see "Used (button)" below). Entire records may be deleted from the table by selecting the entire row of data and pressing your [Delete] key (see Section 4.10, *Deleting Data*).

Used (data item) – This un-editable value displays the total number of the items which have been used in work orders. See "Used (button)" below.

Used (button) – The "Used" button takes you to a data sheet displaying all instances in which the specific item being referenced has been used in work orders.

Inventory Used for: 13 Watt Bulb (EXAMPLE)

<Client>	Other ID	<Work Order>	Status	Changed	Order	<Measure>	Qty Act	Comment
House with crawl space		WO/House with crawl space/1	Work Order Created from Audit	8/23/2005		Lamp replacement	3	
House with finished attic		WO/House with finished attic/1	Work Order Created from Audit	8/23/2005		Lamp replacement	4	
One-story ranch		WO/One-story ranch/1	Work Order Created from Audit	8/23/2005		Lamp replacement	1	
Single wide mobile home		WO/Single wide mobile home/1	Work Order Created from Audit	8/23/2005		Lamp replacement	5	

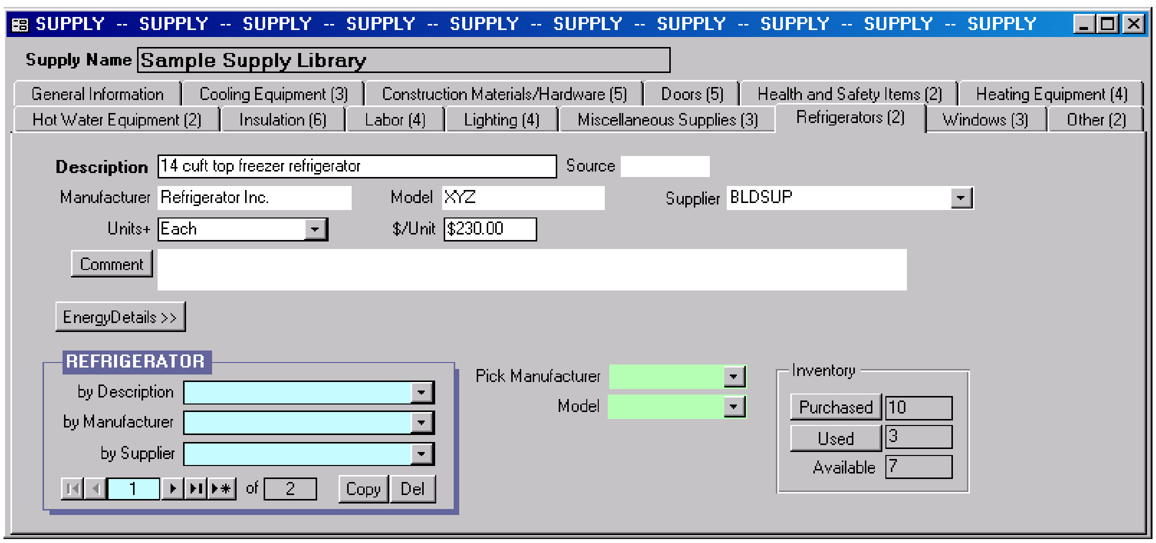
Inventory Used Summary

Only those materials declared as being "Actual" in their use will be included in the table (see "Quantity (Actual)" under "The Materials/Labor Details Sub-Form" of Section 8.3, *Measures (Work Order)*). The table displays the Client ID, the Alternate Client ID, the Work Order in which the item was used, the status of the work order and when this status was last changed, the material number within the measure on the work order (if entered), the specific measure in the work order in which the item is used, the quantity used by the specific work order entry, and any comment you entered on the work order related to this item's use. See "The Materials/Labor Details Sub-Form" referenced above for more information on most of these data items. Note that the headers for "Client," Work Order," and "Measure" in the table are within angle brackets (< >), indicating that double clicking your mouse in any entry in these columns will take you to the specific record indicated by the entry. This provides a quick method of reminding yourself of any use of an item. The items within the table may appear to be editable, but attempts to change them will fail. Changes must be made in the actual record from which the data originated.

Available – This un-editable field displays the difference between the number of items "Purchased" and those "Used", as given in the fields immediately above.

10.3 The Hot Water Equipment and Refrigerator Forms

The Supply Library's listings for Hot Water Equipment and Refrigerators have an additional purpose in the Weatherization Assistant beyond listing materials for inclusion in work orders. They are the only categories of materials in the library which have data that may be copied to an audit and used in the audit calculations themselves. Entries you make under these categories can be used to determine the cost effectiveness of the water heater and refrigerator replacement measures. Although information about a replacement refrigerator may be entered directly into NEAT's and MHEA's audit input forms (see the respective User's Manuals), data on replacement water heaters must be entered in the program's Supply Library in order for the audits to consider replacing a unit. Thus, if you wish to consider replacing water heaters, the Supply Library's Hot Water Equipment form becomes required.



The Refrigerators Material form

The forms under the Hot Water Equipment and Refrigerator category tabs have all of the fields described in Section 10.2 above, as well as two additional combo box lists. These combo box lists access the Weatherization Assistant's data base of water heaters and refrigerators. This data base contains data on almost 8,000 water heaters and 34,000 refrigerators. The green shading of the combo box list's field is an indication that you are accessing an entire data base, not simply selecting from a menu. Choosing a Manufacturer first will restrict the listings in the Model combo box list to those models of that manufacturer. Otherwise, the Model list will include all models from all manufacturers. Some manufactures may be listed in more than one way in the Pick Manufacturer combo box listings. If you don't find a model by first choosing the manufacturer, you might attempt to leave the Manufacturer field blank and search for the model without specifying the manufacturer.

Selecting a model from the databases automatically fills in all required data on both the main form and the Energy Details form (see Section 10.4 below) except for the Description on the main form, which you must provide. Choosing from the data base is optional. However, if not chosen from the database and you plan to use the listing in NEAT or MHEA appliance replacement measures, all required data on both the main form and Energy Details form must then be manually supplied. See the discussions in Section 10.4 below for images of the Energy Details forms related to water heaters and refrigerators.

The Refrigerator category form has one additional field not present in the others, the "Source" field. The database of refrigerators included with Version 8 of the Weatherization Assistant is a combination of entries from two sources, the Association of Home Appliance Manufacturers (AHAM) and the result of a joint effort of the DOE Chicago Region and the State of Wisconsin. The source field indicates from which source the refrigerator's information was obtained. NOTE: The data from the AHAM database of refrigerators in copyrighted and cannot be duplicated outside its use in the Weatherization Assistant.

10.4 Energy Details

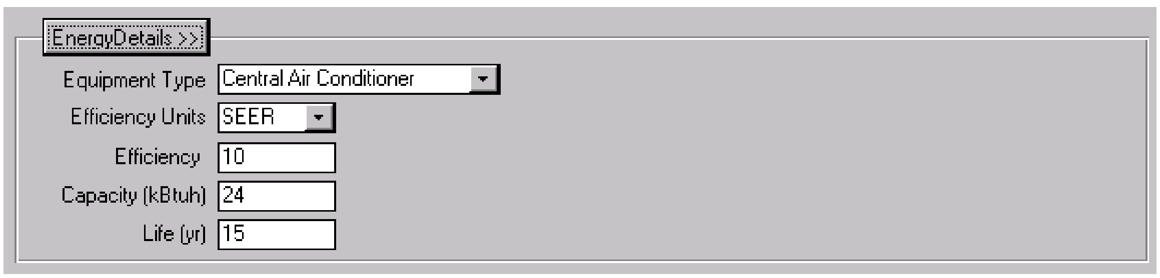
The following discussion relates to data accessed under the "Energy Details" button, which exists on all but the "Construction Materials/Hardware," "Health and Safety Items," "Labor," "Miscellaneous Supplies," and "Other" category tabs. With the exception of entries under the Refrigerators and Hot Water Equipment tabs, the data provided under these buttons is for documentation purposes only, having no bearing on the material properties assumed by the NEAT and MHEA audits. (This may change in future versions of the program.)

The fields presented under the Energy Details button depend on the specific category of material being accessed. For example, Insulation materials ask for the insulation type, R-Value related information, bag size (if applicable), and possibly installed density. For records under the Lighting category, lamp type, life (in hours), lumens, and wattage are among the fields displayed.

One of the fields common to many of the categories is the "Life" of the material being described. Material lifetimes are often difficult to estimate. If you are in doubt regarding what lifetime to use for a material and a similar material is used in one of NEAT's or MHEA's standard library measures (see "Life" in Section 9.5, *Library Measures*), you may use these values.

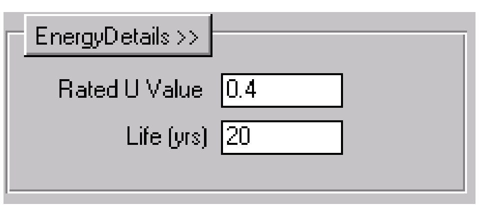
A summary of data entered for each category is given below. All entries except those on the Refrigerators and Hot Water Equipment forms are optional. On these latter two forms, the indicated fields are required to provide sufficient information for use in the audits.

Cooling Equipment – Enter the indicated information. The possible equipment types (the same as in NEAT) are: Evaporative Cooler, Central Air Conditioner, Room Air Conditioner, and Heat Pump. The choices for Efficiency Units are: COP, EER, and SEER. EER ratings are commonly found on window or room air conditioning units while SEER ratings are more common on central systems. COP ratings are rarely found.



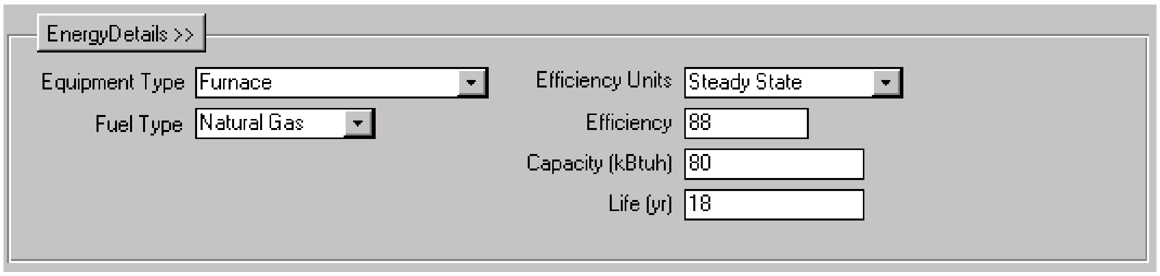
Energy Details Form for Cooling Equipment

Doors – Enter the Rated U Value of the door, likely included on a label attached to the door when new. Most doors could be assumed to have a life of 20 years, the maximum allowed by DOE regulations.



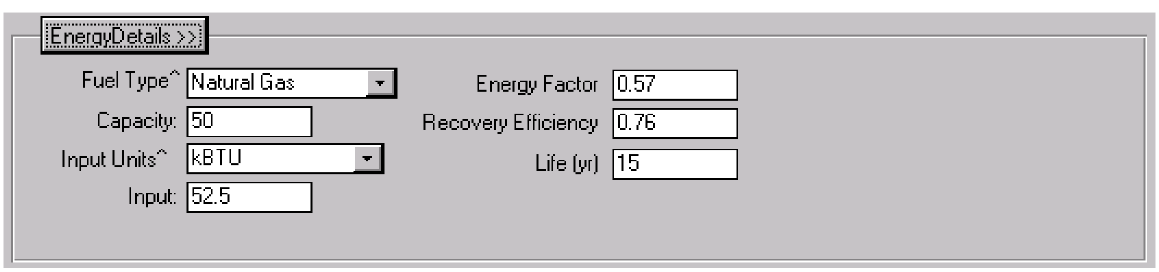
Energy Details Form for Doors

Heating Equipment – Entries on this form mimic the information used in the NEAT and MHEA audits relating to heating equipment. The choices for Equipment Type are Furnace, Heat Pump, and Space Heater. The fuel types are Natural Gas, Oil, Electricity, Propane, Wood, Coal, Kerosene, and Other. The "Other" fuel type would have to correspond to what you have defined this fuel to be in your agency's Setup Library (see Section 9.3, *Fuel Costs*). Choices for Efficiency Units are Steady State, AFUE, COP, and HSPF. Steady State and AFUE ratings apply to fossil fueled or electric resistance systems while HSPF (and less commonly COP) are used to rate the efficiencies of heat pumps.



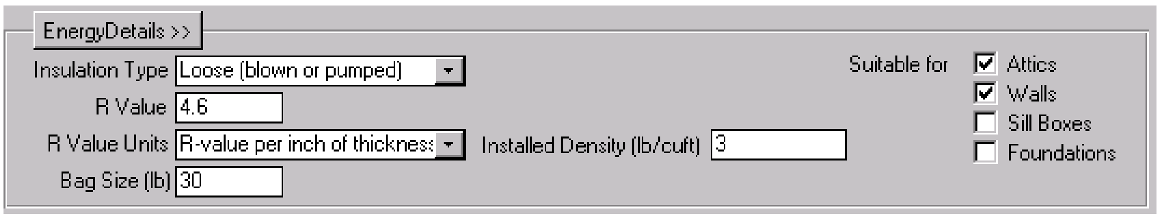
Energy Details Form for Heating Equipment

Hot Water Equipment – If you consider replacing water heaters in your weatherization program, this is where you enter information about your replacement units. If you have chosen a unit from the database of water heaters, the information on the Energy Details form for the unit will have been automatically entered (see Section 10.3 above). Otherwise, enter the indicated information. All data on the form is required if the unit is to be used in consideration of the water heater replacement measure in NEAT and MHEA. The choices for Fuel Type are Natural Gas, Electric, and Propane. Capacity is the gallon size of the water heater. The Input rating may be entered in units of kBTU or kW. The Energy Factor and Recovery Efficiency are ratings of a water heater's efficiency and are required for estimating the savings of replacing the existing water heater. They are available in the data base of water heaters or from your local distributor. The standard life used for water heaters is 15 years.



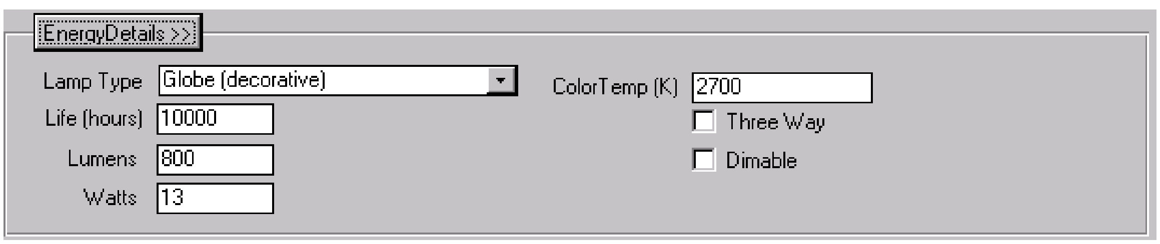
Energy Details Form for Hot Water Equipment

Insulation – Characterizing insulation requires several parameters. First, choose the Insulation Type from one of the following: (1) Batts or rolls (unfaced), (2) Batts or rolls (faced), (3) Loose (blown or pumped), or (4) Rigid. Give an R-value either as "overall" or "per inch of thickness." If the Insulation Type is "Loose," you will be asked for the Installed Density" in "lb/cuft." Also indicate by the check boxes what applications the insulation will be used for, either attics, Walls, sill boxes, and/or foundations.



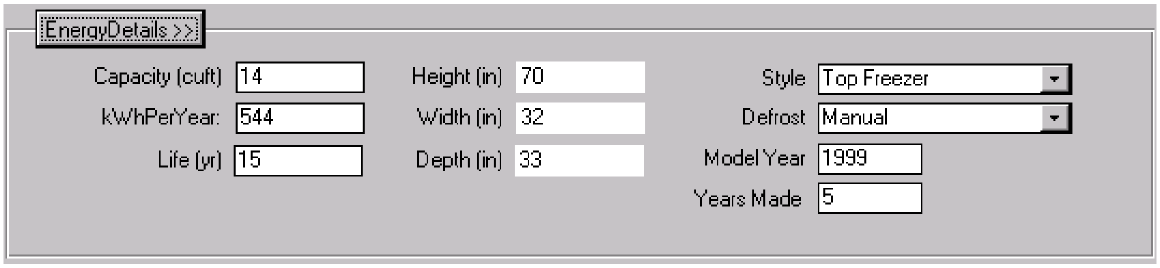
Energy Details Form for Insulation

Lighting – Enter information which describes each replacement lamp in your inventory. The choices for Lamp Type are Compact Spiral (a-lamp replacement), Spiral, Globe (decorative), Chandelier (decorative), Circline screw in, and Other. Enter the estimated life of the lamp in hours, the light output in lumens, the wattage of the lamp, and its color temperature in K. Use the check boxes to indicate whether the bulb is three way and/or dimmable.



Energy Details Form for Compact Fluorescent Replacement Lamps

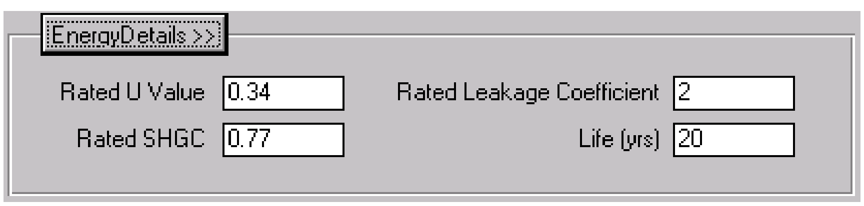
Refrigerators – The Energy Details form for refrigerators includes data necessary for either the NEAT or MHEA audits to evaluate the cost-effectiveness of replacing an existing unit with a unit described here. Required entries include the unit’s Capacity, annual consumption (kWh/Year), the expected life (15 years is used as standard in the audits), the Model Year (when the specific model was first sold), and the number of years the model was available. Entries for the Model Year and Years Made may be estimated. Also, select the Style of the unit. Choices are Top Freezer, Side by Side, Single Door, Single Door with Freezer, Bottom Freezer, and Other. All of the above required data will be entered automatically if the unit has been located in the audits’ database of refrigerators. The dimensions of the refrigerator (Height, Width, and Depth) (in inches) are optional entries, though they may be important if the existing unit is located in a restricted space.



Energy Details Form for Replacement Refrigerators

Windows – Enter data which describes the replacement windows you have in your inventory. Most of the information requested can be found on the new window's label. Many manufacturers have adopted the National Fenestration Rating Council's (NFRC) labeling, which includes the information, though the leakage coefficient is optional for manufacturers to report. Enter the U-Value of the window (Btu/hr-ft^2-hr), a measure of the heat conduction property of the window. The SHGC (solar heat gain coefficient) measures how well the window blocks heat from the sun. Values are between 0 and 1. The Rated Leakage Coefficient may be entered as NFRC's air leakage parameter having units of cfm/ft^2 (cubic feet of air per square foot of window area). A standard glass window may be normally assigned a life of 20 years.

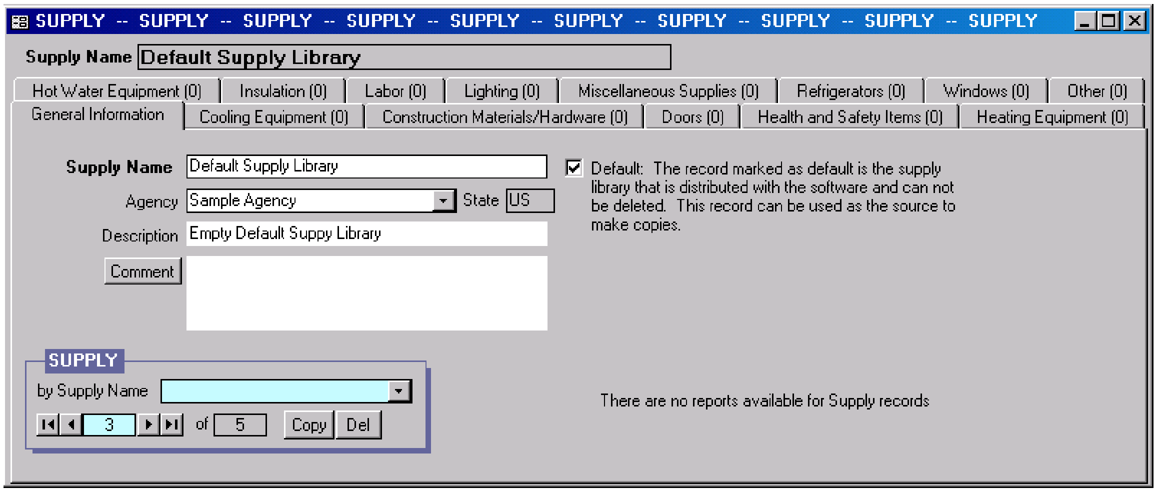
If you have standard window sizes in your inventory, make separate entries in the Supply Library for each standard size, indicating the size in the Description field of the main form for the Windows.



Energy Details Form for Windows

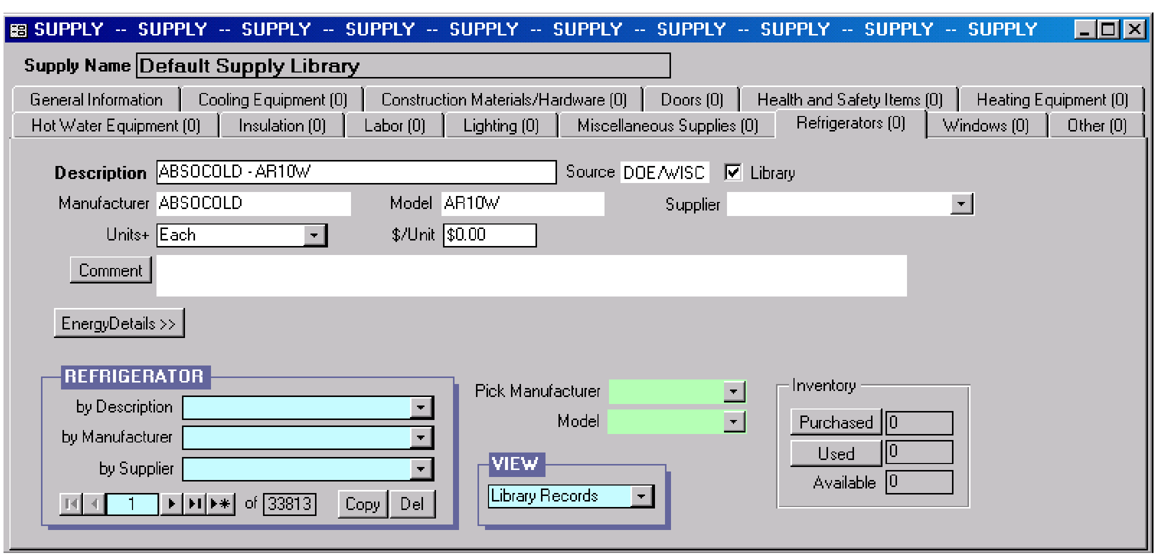
10.5 The Default Supply Library Record

The Weatherization Assistant is distributed with a single default Supply Library. It can be accessed by choosing "Default Supply Library" in the Supply Library Navigation Block on the General Information tab under the Supply Library Main Menu item. It is identified by having the Default check box located on this form selected. This library cannot be deleted or modified. It is intended to be used as a shell which you can copy to another Supply Library from which to begin describing your own inventory of items.



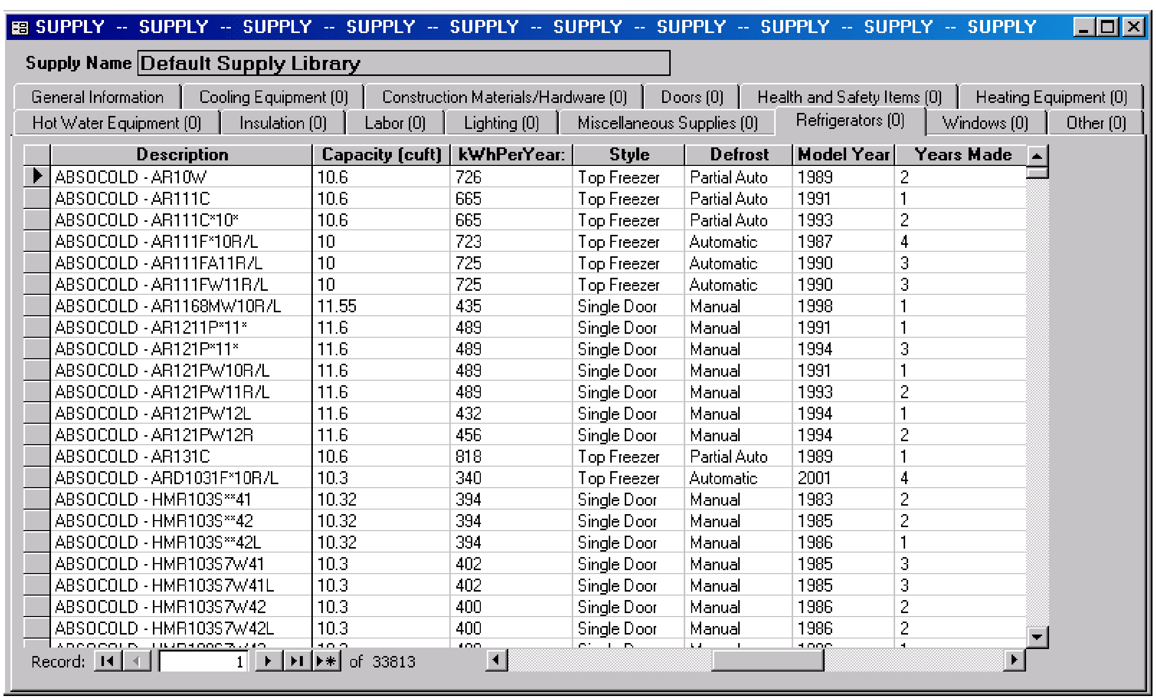
The General Information form for the Default Supply Library record

The default Supply Library has another feature which separates it from other supply libraries. It is the only library that contains the database of refrigerators and water heaters used by the program. When you copy this library, these records are not copied, in order to save your computer's memory. All other references to this database simply copy individual records from it to the desired location (e.g., your own inventory of replacement refrigerators).



The Refrigerators Material form for the Default Supply Library record (Form View)

Version 8's Default Supply Library has been given the flexibility to extend this concept of databases to other categories of items in later versions. Thus, on many of the material category tabs you will see a blue shaded View combo box list. The choices from the list are "Library Records," "Custom Records," and "Library and Custom." Also on most forms of this library, there will be a "Library" check box. "Library" records are those records from databases supplied with the program, such as the current refrigerator and water heater databases. "Custom" records are those that you enter yourself. Using the View combo box, you may choose to view and access either or both of these record types from the material category tab. Thus, if you go to the Hot Water Equipment material category tab and choose "Library" in the View combo box, those records accessible from the Hot Water Equipment Record Navigation Block will be those from the database of water heaters distributed with the program. Also, if an entry from the database is chosen for display on the form, the form's Library check box will be selected, indicating this choice. Also, with the choice of "Library Records" in the View combo box, the material tab's form may be viewed in Data Sheet View, which will then display all of the Library Records in spread sheet format. See Section 4.8, *Data Sheet and Form View of Records* for a descriptions of added features available to you from this view.


SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY -- SUPPLY

Supply Name: Default Supply Library

General Information | Cooling Equipment (0) | Construction Materials/Hardware (0) | Doors (0) | Health and Safety Items (0) | Heating Equipment (0)
Hot Water Equipment (0) | Insulation (0) | Labor (0) | Lighting (0) | Miscellaneous Supplies (0) | Refrigerators (0) | Windows (0) | Other (0)

Description	Capacity (cuft)	kWhPerYear:	Style	Defrost	Model Year	Years Made
ABSOCOLD - AR10W	10.6	726	Top Freezer	Partial Auto	1989	2
ABSOCOLD - AR111C	10.6	665	Top Freezer	Partial Auto	1991	1
ABSOCOLD - AR111C*10*	10.6	665	Top Freezer	Partial Auto	1993	2
ABSOCOLD - AR111F*10R/L	10	723	Top Freezer	Automatic	1987	4
ABSOCOLD - AR111FA11R/L	10	725	Top Freezer	Automatic	1990	3
ABSOCOLD - AR111FW11R/L	10	725	Top Freezer	Automatic	1990	3
ABSOCOLD - AR1168MW10R/L	11.55	435	Single Door	Manual	1998	1
ABSOCOLD - AR1211P*11*	11.6	489	Single Door	Manual	1991	1
ABSOCOLD - AR121P*11*	11.6	489	Single Door	Manual	1994	3
ABSOCOLD - AR121PW10R/L	11.6	489	Single Door	Manual	1991	1
ABSOCOLD - AR121PW11R/L	11.6	489	Single Door	Manual	1993	2
ABSOCOLD - AR121PW12L	11.6	432	Single Door	Manual	1994	1
ABSOCOLD - AR121PW12R	11.6	456	Single Door	Manual	1994	2
ABSOCOLD - AR131C	10.6	818	Top Freezer	Partial Auto	1989	1
ABSOCOLD - ARD1031F*10R/L	10.3	340	Top Freezer	Automatic	2001	4
ABSOCOLD - HMR103S**41	10.32	394	Single Door	Manual	1983	2
ABSOCOLD - HMR103S**42	10.32	394	Single Door	Manual	1985	2
ABSOCOLD - HMR103S**42L	10.32	394	Single Door	Manual	1986	1
ABSOCOLD - HMR103S7W41	10.3	402	Single Door	Manual	1985	3
ABSOCOLD - HMR103S7W41L	10.3	402	Single Door	Manual	1985	3
ABSOCOLD - HMR103S7W42	10.3	400	Single Door	Manual	1986	2
ABSOCOLD - HMR103S7W42L	10.3	400	Single Door	Manual	1986	2

Record: 1 of 33813

The Refrigerators Material form for the Default Supply Library (Data Sheet View)
Note: Columns not displayed include "$/Unit," "Supplier," "Available," "Used," "Comment," "Life," "Height," "Width," and "Depth."

Chapter 11

Under the Preferences Main Menu item, you may choose various options available in the Weatherization Assistant. Most of these options effect only the appearance and operation of the interface to the program, not the audits themselves. Thus, recommendations from the audits will not change because of differing choices in the Preferences.

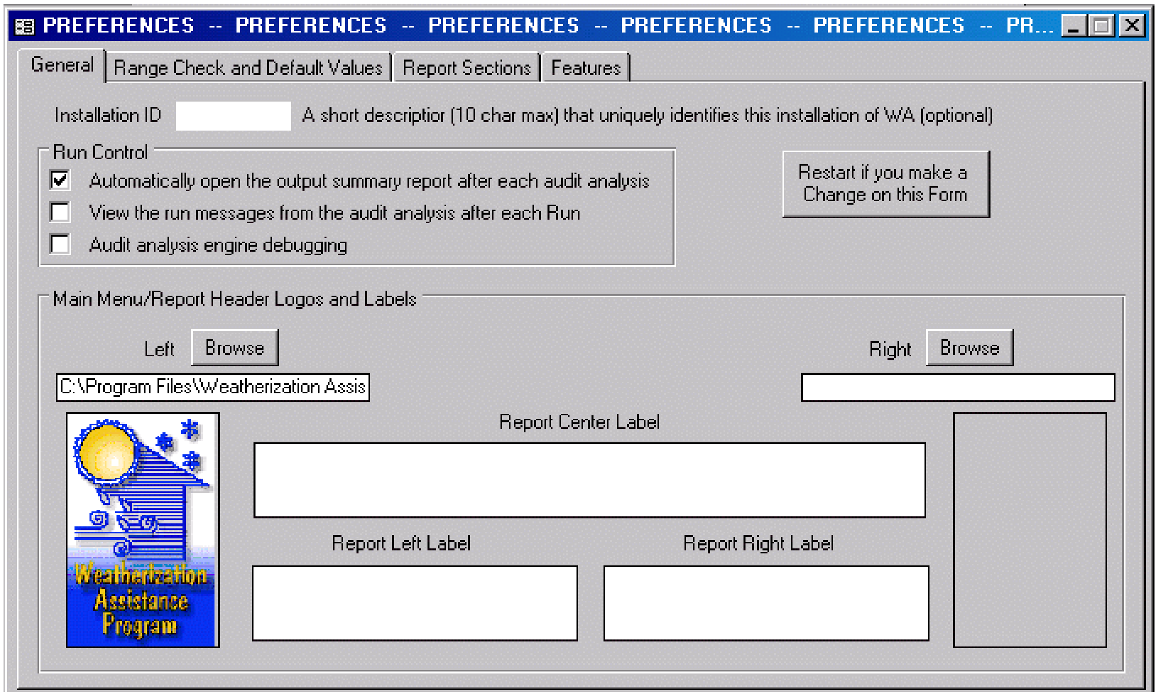
If you are using the Weatherization Assistant on a network, it will be important for you to understand the difference between the locations where your data are stored and where the settings for these preferences reside. Normal use of a network for the program is to have each terminal linked to a database on the network server where all of the data you, and others, enter into the program are stored (see the introductory remarks in Chapter 12, *Data Linking, Importing, and Exporting Data*). Thus, all users linked to the server's database file share the same information. However, the settings for the Preferences are stored locally at each terminal, regardless of where you store your other data. Thus, you may see a difference in behavior of the program from one terminal to the next, despite being linked to the same database. In Access terminology, your data are stored in the "backend" (or "mdb") file, while the settings for the Preferences is stored in the "frontend" (or "mde") file.

The Preferences Main Menu item has tabs for four categories of features. The General tab controls settings for some in-depth run analyses, which may assist developers investigate any apparent unusual behavior in the program, as well as allow the user to designate images and text to appear at the top of reports which the program generates. The Range Check and Default Values tab allows the user to set his own ranges used by the audits to detect numeric entries which may be in error based on their magnitude and to set field-by-field default settings for these same fields. The Report Sections tab sets which segments of the NEAT and MHEA Recommended Measures Report (see Appendix A, *Reports*) are displayed and/or printed. Finally, the Features tab allows the user to select certain options which affect the operation of the extended features added to Version 8.

Each tab will be discussed individually in the sections below.

11.1 The Preferences General Tab

Fields and controls on the General tab under the Preferences Main Menu item include the following.



The General form

<u>Installation ID</u> – When you first open Version 8 of the Weatherization Assistant following installation, you are asked to enter an optional Installation ID (see Section 3.3, *Starting the Weatherization Assistant*). This field under Preferences allows you to alter this parameter. The Installation ID identifies a specific installation of the Weatherization Assistant. You may have as many installations of the same version of the program as you wish. The parameter might identify different installations on work stations all linked to the same database on a server, or different but unlinked computers, all in the same agency. If you only have one installation in your agency, this parameter will not be of much use since your agency name will then uniquely identify the installation as well.

When you create a new Setup or Supply Library by copying an existing library, the default name of the new library will be "Setup/Supply Library [<Installation ID>-<#>]," where <Installation ID> is the Installation ID for the installation creating the new library and <#> is a number which insures uniqueness of the name, if necessary. Although you will likely rename the library, if you have multiple installations of the Weatherization Assistant in your agency, it might be wise to retain the installation ID as part of the new name.

The Installation ID is also used when exporting files from an installation to identify which computer the files are from (see both topics on "Exporting Clients" in

Sections 12.3, *Data Transfer – Import/Export via Database Files* and 12.4, *Data Transfer – Import/Export via Text Files*).

A person's initials or the computer name are examples of useful Installation ID's. The entry may be 10 characters or less and is optional. If no Installation ID is entered, the Weatherization Assistant will use a time stamp (e.g., "[15:31:05]") as the Installation ID, identifying the time at which the operation creating the need for the identification occurred (e.g., when a new Setup Library was initiated).

Run Control Block – The Run Control Block provides three check boxes controlling reports which may be automatically displayed upon executing an audit. If none of the check boxes are selected, no obvious change, other than the final disappearance of the hour glass cursor, will be seen on your computer screen following execution.

The first check box controls whether the Recommended Measure Report is displayed after execution (see "Audit Report Block" in Section 7.1, *Audit Information* and Appendix A, *Reports*). The report displays information related to the audit recommendations for the house being analyzed. See the Appendix A for a sample of this report. Having this as the only one of the three check boxes selected is the default.

If the second check box is selected, the program will display run messages produced during the execution of an audit. This display does require that your computer have access to Microsoft WordPad, which is normally part of your Windows installation. Use the normal Windows close button to exit the message display. The program will also write these additional diagnostic messages to a file named "last_neat_run.txt" or "last_mhea_run.txt," depending on which audit was last executed, and save the file in the execution folder on your computer (by default, c:\Program Files\Weatherization Assistant XXX, where the "XXX" represents the version number of the program). Note, unless you manually rename these message files, they will be overwritten each time you execute an audit of the same type, NEAT or MHEA. These diagnostics data would likely be useful to program developers in determining causes for unusual behavior of the program. The files may be viewed with any text editor. Under normal operations, this check box should be left un-checked.

If selected, the third check box will add to the above diagnostic messages output detailing the calculations performed by the audits. The display requires access to Microsoft WordPad. The output can be lengthy and is not designed to be of significant use to normal users. However, it may assist support personnel identify problems which might be occurring. Use the normal Windows close button to exit the display. As above, the information is saved to your computer, may be viewed at any time using a text editor, and is overwritten each time an audit of the same type is executed. Under normal operations, this check box should be left un-checked.

Main Menu/Report Header Logos and Labels Block – Fields in this block allow you to customize report headers and add your own logo to the Main Menu display. Use the Left and Right Browse buttons to locate and choose logos to be displayed on the upper left and right, respectively, of your reports and the Main Menu. Selection of the buttons takes you to normal Windows browse displays where you can select any file in most graphic formats (e.g., jpg, bmp, etc.) to be used as logos. The graphics you use may have to be correctly sized using other graphics applications. The field under each browse button displays the path and file name of the graphic file you have chosen. The boxes below the path name fields display the actual graphics which have been selected. For a Weatherization Program agency, it is customary to retain the Program logo on the left.

Enter text you wish to have displayed in report headers into the Label fields provided. Provision is made for Left, Right and Center text. Note, however, that no attempt is made to truncate or create multiple lines of header from this text. Thus, if text is entered for all three positions and the text is too lengthy, it has the possibility of overlapping.

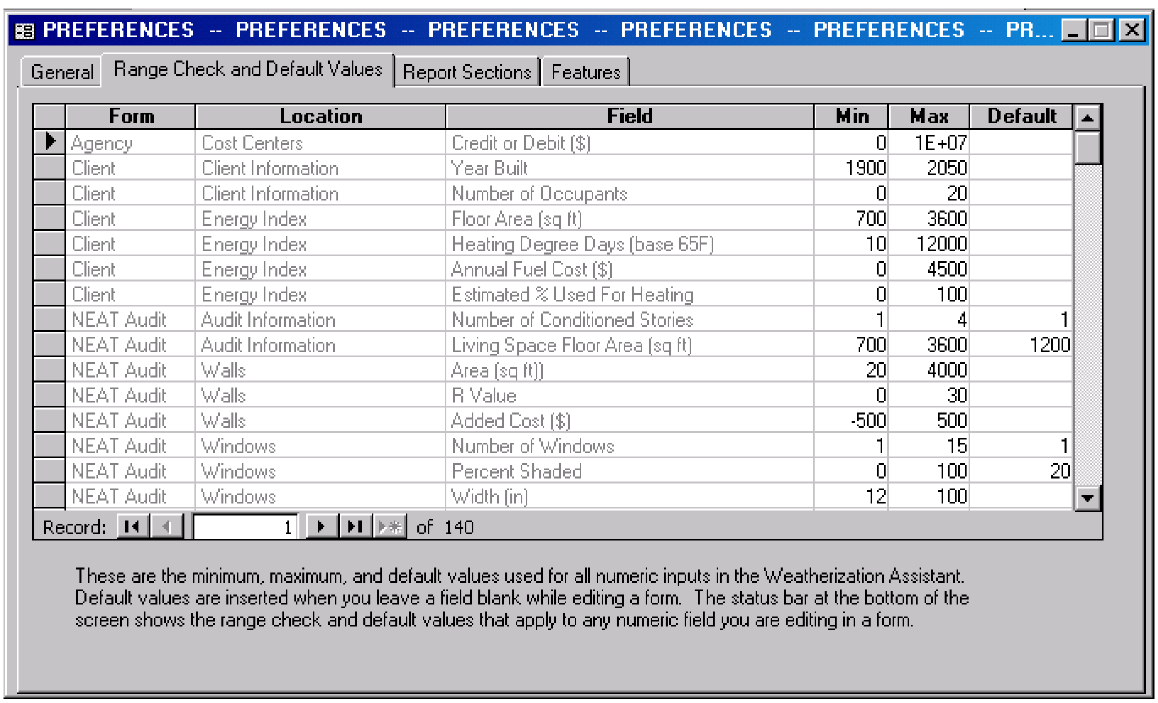
If you have multiple installations of the Weatherization Assistant in your agency, you may wish to coordinate these settings. Below is an example of a report header with left and right logos and text entered for all three positions. Notice that the text almost overlaps.

Report displaying optional logo and header text

Restart – The restart button should be selected when ever changes are made on the form to insure that the options selected take effect during the current session of program use. Following the button's selection, you will be taken to the Main Menu.

11.2 Range Check and Default Values

As discussed in Sections 4.6, *Field Defaults*, and 4.7, *Field Range Checking*, the Weatherization Assistant provides you with default values and range checks for the various numeric input parameters in order to assist you in properly entering data. Though the values for these defaults and ranges are set for a variety of parameters during installation of the program, you may wish to alter or set additional defaults and checks. This is done from the Range Check and Default Values tab under the Preferences Main Menu item. Here, each parameter is listed by Main Menu Item and form on which it lies and its field name. Designated columns allow you to adjust the "Min," "Max," and "Default" values to meet your needs. No other fields are editable and no records can be added or deleted.



PREFERENCES -- PREFERENCES -- PREFERENCES -- PREFERENCES -- PREFERENCES -- PR...

General | Range Check and Default Values | Report Sections | Features

Form	Location	Field	Min	Max	Default
Agency	Cost Centers	Credit or Debit ($)	0	1E+07	
Client	Client Information	Year Built	1900	2050	
Client	Client Information	Number of Occupants	0	20	
Client	Energy Index	Floor Area (sq ft)	700	3600	
Client	Energy Index	Heating Degree Days (base 65F)	10	12000	
Client	Energy Index	Annual Fuel Cost ($)	0	4500	
Client	Energy Index	Estimated % Used For Heating	0	100	
NEAT Audit	Audit Information	Number of Conditioned Stories	1	4	1
NEAT Audit	Audit Information	Living Space Floor Area (sq ft)	700	3600	1200
NEAT Audit	Walls	Area (sq ft))	20	4000	
NEAT Audit	Walls	R Value	0	30	
NEAT Audit	Walls	Added Cost ($)	-500	500	
NEAT Audit	Windows	Number of Windows	1	15	1
NEAT Audit	Windows	Percent Shaded	0	100	20
NEAT Audit	Windows	Width (in)	12	100	

Record: 1 of 140

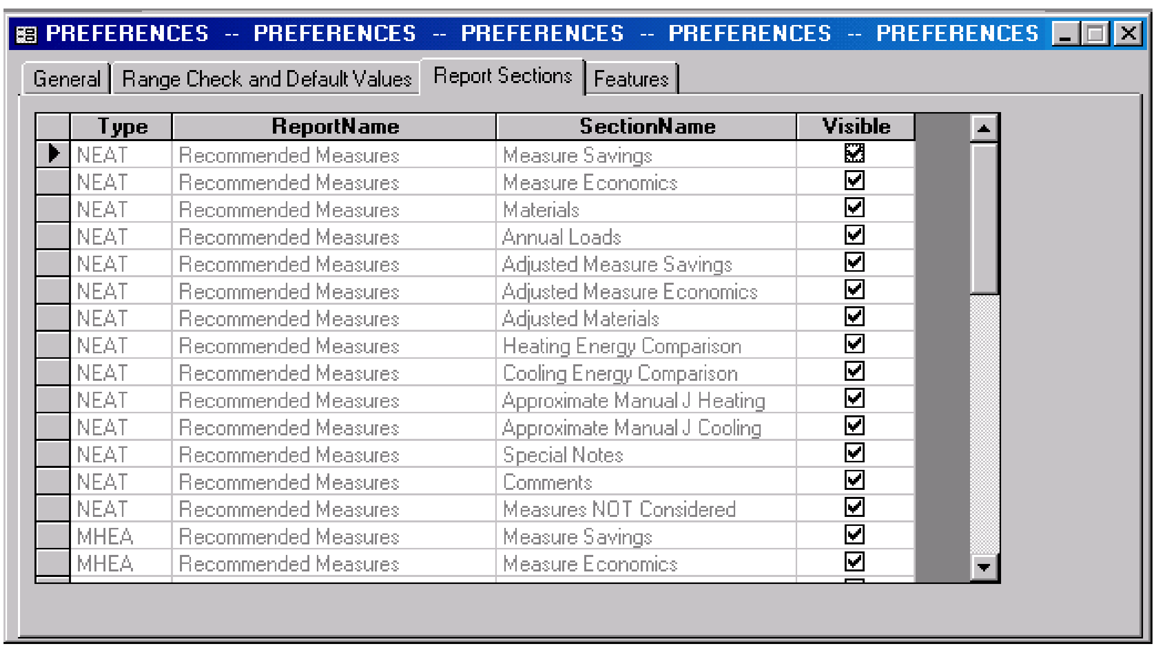
These are the minimum, maximum, and default values used for all numeric inputs in the Weatherization Assistant. Default values are inserted when you leave a field blank while editing a form. The status bar at the bottom of the screen shows the range check and default values that apply to any numeric field you are editing in a form.

Ranch Check and Default Values form

If any entry in the table is left blank, no default will be available or no range checking will occur for that particular field. Also, any default computed by either of the audits over-rides the default in the table. The Range Check and Default Values form must be exited before any changes made during a visit to the form will take effect.

11.3 Report Sections

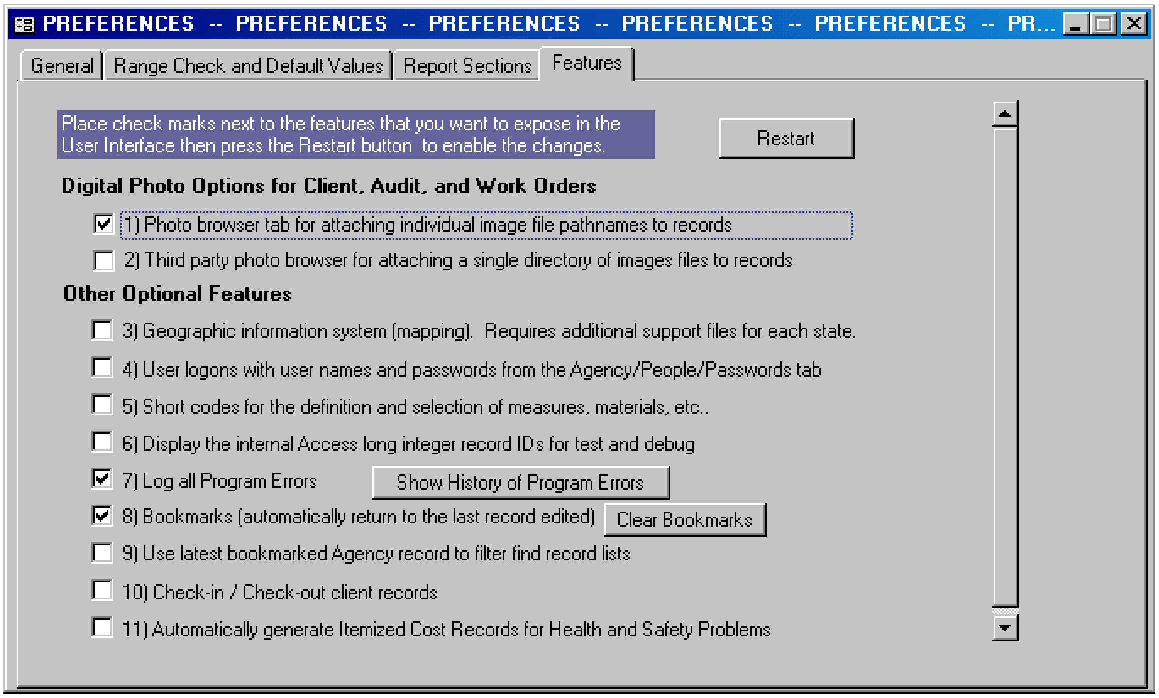
One of the reports available from either the NEAT or MHEA audits is the Recommended Measure Report (see "Audit Report Block" in Section 7.1, *Audit Information* and Appendix A, *Reports*). This report has multiple titled sections. Under this tab of Preferences, you may select which sections to display in the report. On the Report Sections form, the sections are listed by the audit Type (NEAT or MHEA) and Section Name. The Report Name is the same for all entries. Check boxes to the right of each listing allow you to make the selections. If the check box is checked, the associated report section will be displayed.



Report Sections

11.4 Features

The Features tab under the Preferences Main Menu item allows you to indicate preferences regarding many of the expanded features in Version 8 of the Weatherization Assistant. Indicate the features you wish activated by selecting the check boxes adjacent to the feature description. The feature selections are independent of one another, except for the two related to Digital Photo Options. A brief description of each feature is included below. Following any changes in the selections, click on the "Restart" button to implement them. You will be taken back to the Main Menu.



Features

<u>1) Photo browser tab for attaching individual image file pathnames to records</u> – Version 8 allows storage of digital photos associated with your weatherization work (see Section 13.1, *Digital Photos*). The Weatherization Assistant offers you two methods of storing, viewing, and editing these photos in your computer. The method selected by this first check box allows you to store the location on your computer of each individual photo image file. Thus, photos accessible from any location in the Weatherization Assistant need not be in any particular location. Choice of this method will add a tab to any Main Menu item's form to which photos can be attached. This is the photo feature initially selected. See the above reference for more information on the photo browsers.

<u>2) Third party photo browser for attaching a single directory of image files to records</u> – This second method of storing, viewing, and editing photos requires you to assign a location on your computer where all photo files associated with a given record for each Main Menu item of the program (e.g., Audits, Work Orders, etc.) will be stored. Thus, all photos associated with a given work order must be stored together and all those for the audit of a client in another (or the same if so chosen). If selected, the browser will display a Photo Folder field on the Information tab of the

Main Menu item asking for this location. Use the Browse button to find and select the location, then the View button to view the photos stored in that location.

Photo Folder field for third party photo browser

See Section 13.1, *Digital Photos* for more information on the photo browsers.

3) Geographic information system (mapping) – This check box turns on the Geographic Information System (GIS) which allows you to map the locations of clients dwellings (see Section 13.2, *Geographic Information System (GIS)*). Using this feature requires downloading additional files and an installation. If the feature is selected without having performed this installation, you will receive a message upon restarting the program that the installation has not been performed and that the feature is subsequently turned off until installation is complete. If the required installation for the feature has been performed, selecting this feature will place a "Map" button on the Client Information form (see "Map" in Section 6.1, *Client Information*) and under the Select Clients button of the Agency Information form (see "Select Clients" in Section 5.1, *Agency Information*).

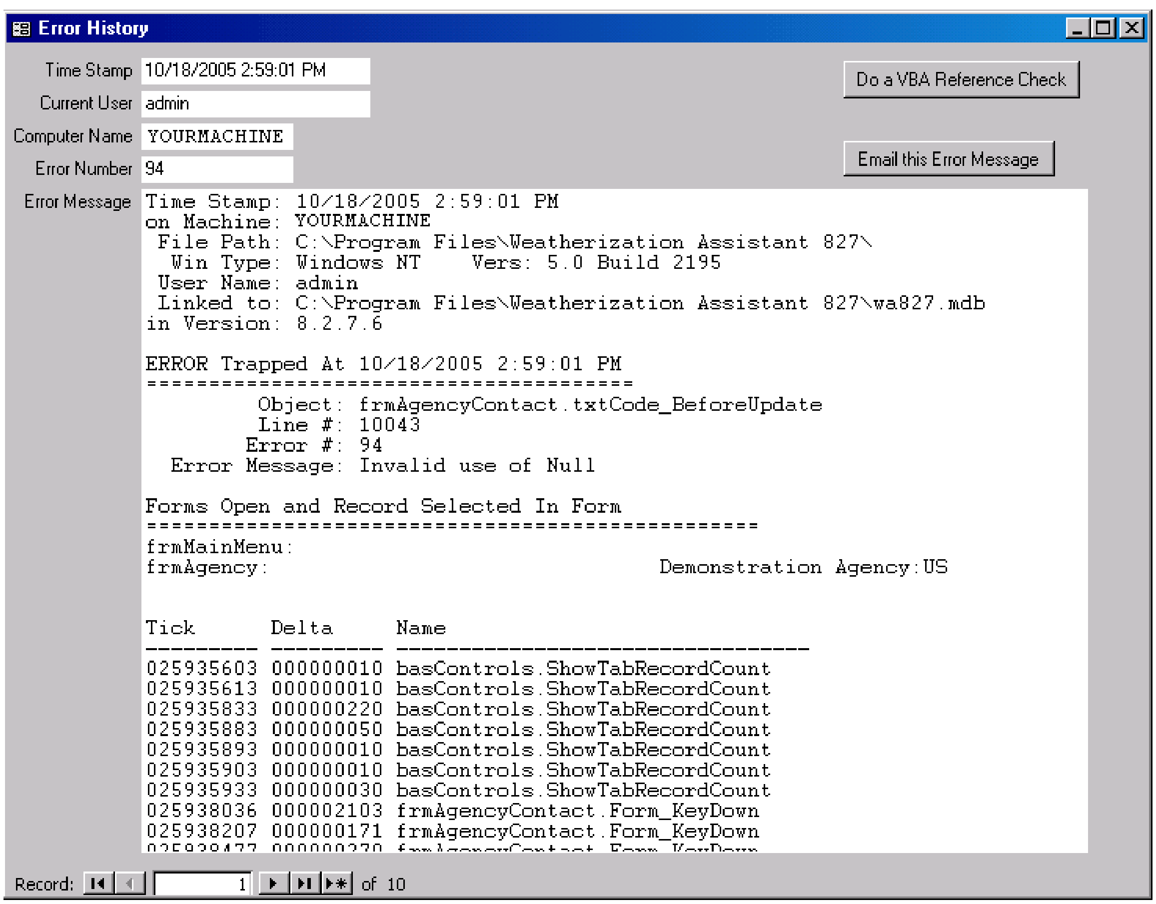
4) User logons with user names and passwords from the Agency/ Contacts/ Passwords tab – This feature allows regulation of the users for a specific installation of the program. If implemented, users must logon with a User Name and Password before being allowed to enter the program. See "Change LogOn Group and Password" in Section 5.2, *Contacts (Agency)* for additional details on this feature.

5) Short codes for the definition and selection of measures, materials, etc. – This feature allows an additional short code to be assigned to Supply Library materials and user defined measures for easier identification in combo box lists and reports. However, as of the first release of Version 8, this feature has not been fully implemented. The feature is used for Health and Safety Measures in assigning an unalterable code to each of these program-defined measures (see "Measure Name" under "The General Task Description" in Section 9.6, *User-Defined Measures*). Your selection of this feature in the earliest release of Version 8 will not make a difference in the operation of the program.

6) Display the internal Access long integer record IDs for test and debug – Whenever a record (such as a Client, Audit, or Work Order) is created, Access assigns the record a random integer ID number unique to the record. This ID number will not change, even if you change the other information related to the record or export the record to another computer. Under normal operation of the program, this

Access ID number is of little use. Thus, the default mode is to not have them displayed. Program analysts who may use other Microsoft products to debug or otherwise analyze the execution of the program with relation to a particular record may require the ID, however.

7) Log all Program Errors – Although many possible conditions that would cause the Weatherization Assistant to not function properly have been anticipated and provided with warnings or messages to the user, some likely remain unaddressed. Under such circumstances the user will receive an Access or System error message which the user is not expected to understand. If this feature is turned on, these "un-handled" errors will be logged giving more detailed information regarding the condition of the program at the time the error occurred. This information, together with the user's description of what operation was being performed when the error occurred and possibly the database which was being used at the time of the error, are normally sufficient to allow developers of the program to determine the cause of the problem.



Program Error History form

Clicking on the "Show History of Program Errors" button to the right of this feature's check box will display a Form View showing the first error (if any) which has occurred with all of the information the software can provide related to it. The abbreviated navigation block at the bottom left of the form can be used to access additional error entries, if they exist. The "Do a VBA Reference Check" button on this form initiates an installation test which might be of use to program developers in diagnosing irregular operation of a specific installation. You may use the customary procedure (see Section 4.8, *Data Sheet and Form Views of Records*) to display the error records in Data Sheet View, from which you may delete any records no longer desired (see Section 4.10, *Deleting Data*). It is likely good policy to keep the error messages recorded to a minimum so that if an error occurs which causes considerable disruption in your operations, it can be easily recognized in the error history. If an error occurs with which you need assistance to resolve and this feature is not activated, turn it on then try to reproduce the error. If you have setup the e-mail feature of the Weatherization Assistant (see Section 13.4, *E-Mailing from Within Weatherization Assistant*), you may click on the "Email this Error Message" button to quickly e-mail the error message to program support personnel.

The Log all Program Errors feature is initially selected for a new installation and will remain selected unless de-selected on this form.

8) Bookmarks (automatically return to the last record edited) – This feature automatically keeps track of which record of each specific type (Agency, Client, Audit, Work Order, etc.) you last visited so that when that particular Main Menu item is again selected, you will be presented with that record. Otherwise, the program will present the first record in its list of records of that type. This order may not be obvious and more likely will require you to access the desired record via the Record Navigation Block. Upon installation of the Weatherization Assistant, this feature is initially activated.

9) Use latest bookmarked Agency record to filter find record lists – Activation of this feature will restrict the records displayed in the Record Navigation Blocks (see Section 4.1, *Record Navigation*) of the other main record types (Client, Audit, Work Order, etc.) to those belonging to the agency last visited via the Agency Main Menu item. As distributed, the Weatherization Assistant Version 8 has two Agencies already entered, the "Sample Agency" and the "Your Agency Name" agency. It is anticipated that this latter agency will be renamed to identify your specific agency. If this feature has not been selected, all of your record navigation combo box lists will include not only records of your agency, but also those installed with the program under the Sample Agency. This may not be desirable. In addition, you may be a state

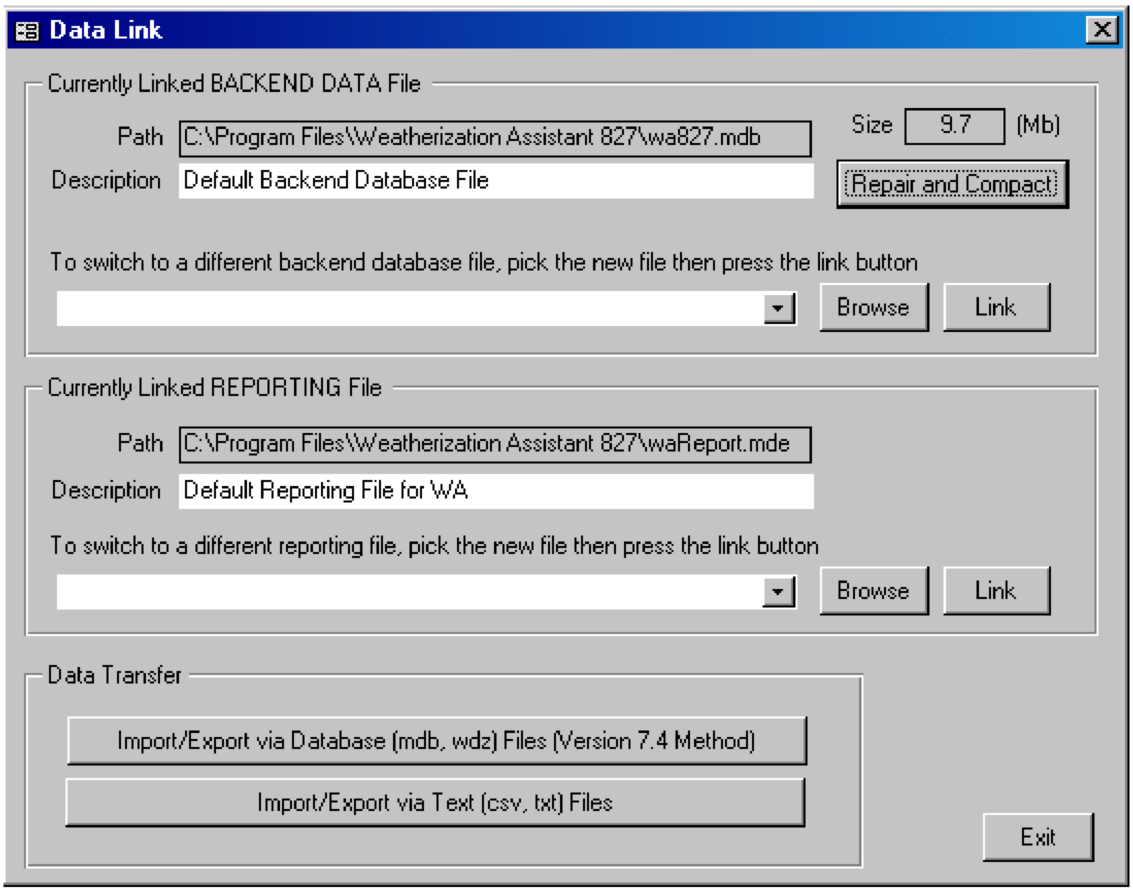
director with clients from all of the state's agencies imported into a common database. In this situation, lists of clients, audits, work orders, etc. would likely be long making locating a specific record difficult. With this feature activated, you may look at only records from a specific agency at any given time. The feature is initially activated with the "Your Agency Name" agency bookmarked. You will have to de-activate this feature or select the Sample Agency from the Agency Main Menu item in order to view the Sample records included with the installation.

10) Check-in / Check-out client records – This feature is used by the Client Export routines (see both topics on "Exporting Clients" in Sections 12.3, *Data Transfer – Import/Export via Database Files* and 12.4, *Data Transfer – Import/Export via Text Files*) of the Weatherization Assistant. Whenever activated, the program tracks which clients have been exported and who was logged on when each was exported. It is used in conjunction with the User Logons feature, item 4 above. The feature may be of use if you routinely pass client information between computers. A client record which is "checked out" will show what user checked the record out on the Client Information tab for that specific client (see "Checked Out To" in Section 6.1, *Client Information*).

11) Automatically generate Itemized Cost Records for Health and Safety Problems – When activated this feature will automatically generate Itemized Cost Records in the recommended measures lists of the audits that correspond to Health and Safety problems that are indicated by the user during data input. See "Handling of Health and Safety Issues" in Section 7.6, *Health and Safety* for more information on this feature.

Chapter 12

The facilities under the Data Link Main Menu item allow you to group client information (such as for different program years), quickly link to various database files, and share information on individual or groups of clients with others.



The Data Link form

All user-supplied data and audit results in the Weatherization Assistant are stored in a file on the computer. The file is a Microsoft Access database file, termed the "backend" file in Access terminology. Files on your computer are designated by a name and an extension with the two separated by a period (e.g., "wa827.mdb"). This is, in fact, the default name of the file in which data in Version 8.2.7 of the Weatherization Assistant will be stored, the "mdb" standing for "Microsoft database." You may have as many database files as you like with whatever names you choose, as long as their extensions are "mdb." You may wish to have a separate database file for each program year. A state may have a different database file for each agency within their state. The Data Link feature of the Weatherization Assistant allows you to quickly "link" to various database files. When linked to a specific database file, the program views only the client information contained in the file, thus allowing you to more easily locate records.

Understanding the concept of the database file allows you to perform some relatively simple operations outside of the Weatherization Assistant using standard Windows capabilities. Although means within the program may accomplish the same objectives, those with knowledge of Windows may prefer to use its features instead. For example, database files may be copied using Windows, though the files' names must remain unique. If, immediately after installing the Weatherization Assistant, the original "mdb" file (e.g., "wa827.mdb") is copied, this original file may be saved as an empty database file for future use. If you plan to keep separate database files for each program year, you might name the copied database file after the year whose data it will contain (e.g., "PY2006.mdb"), then link to this database file (see Section 12.1 below) for use during that year. When you are ready to begin the 2007 program year, make another copy of the original, empty database file and name it after the new program year (e.g., "PY2007.mdb"), link to it, and begin using it. Thus, you are provided with separate files, each with all the data applicable to a specific program year. You may think of other reasons to have multiple database files with names you choose to indicate specific characteristics.

In addition to allowing you to link to various database files, the facilities of the Data Link Main Menu item of the Weatherization Assistant also provide means to share information with others. Although this could be accomplished by simply sending an entire database file, an "mdb" file, this may not be the best method under some situations. The added features under this main menu item provide you with two independent methods of sending others all or portions of the contents of database files. These features might be used to move client data from a laptop used in the field to the central agency computer in the office or to upload data to the state agency periodically. You may select specific clients to include in your data transmission, you may send them in a "compressed" and "encrypted" format, or you may send them in a format more appropriate for use by other software applications. Files created by these alternate approaches will have different "extensions" than the "mdb" files, but they still contain similar information.

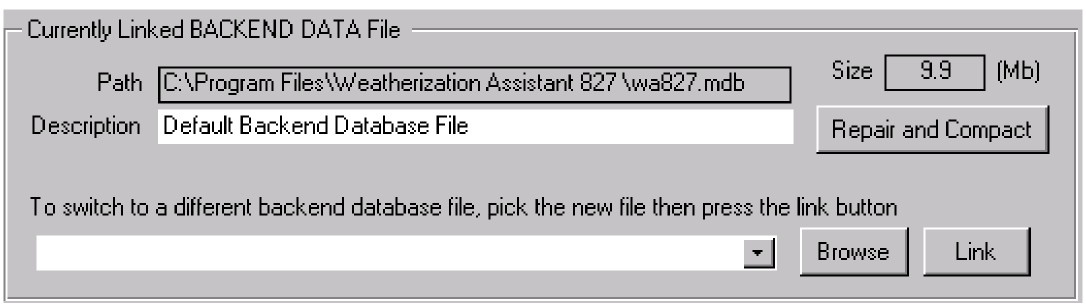
Reports that are available for you to print are stored in another file, waReport.mde. The program must also link to this file before you may utilize these reports. With the ability in Version 8 to have multiple reporting modules (see Appendix B, *Weatherization Assistant Customized Reporting Feature Reference*

Document), you may need to select between various reporting modules. The Data Link facility allows you to perform this operation.

The following sections will discuss in more detail the facilities available under the Data Link Main Menu item of the Weatherization Assistant. The discussion is subdivided into topics generally seen as falling within separate blocks within the form displayed under this main menu item.

12.1 Currently Linked Backend Data File

As discussed above, you may have multiple database files in which your client information is stored, perhaps dividing the data into different program years or as coming from different sources. This facility allows you to quickly access any of these databases. The fields and controls under this block are discussed separately.



The database linking block

Path – This un-editable field displays the path (location in your computer) and name of the database file you are currently linked to. Thus, any data viewed anywhere within the Weatherization Assistant will come from this file.

Size - This un-editable field reports the size of the database file displayed in the Path field, in Megabytes (MB). This may be important to note if you intend to send your entire database file via means that may have restrictions on the size of files that can be transmitted or stored. Also, the time required to send files by e-mail will likely depend on the size.

Description – This field provides you with a means of identifying the characteristics or contents of the database file designated in the Path field. If the file was sent to you, it may reveal identifying information to you regarding the file. Optional.

Repair and Compact – With extended use, a database file may become disjoint or even damaged. The Repair and Compact button examines the database file identified in the Path field and attempts to repair any damaged segments, then compact the file into its most efficient form. If selected, the operation will notify you that it "requires exclusive use of the backend database." Thus, "If the currently linked backend [database] is shared on a network, be sure everyone is logged off..." or not linked to the database. You are then given the opportunity to continue or cancel the operation. It is a good idea to execute the Repair and Compact operation periodically to insure your database remains free of errors. If you should have an abnormal termination of the program, such as due to a power failure, it would be particularly advisable to execute it. Note, under such circumstances, some of the most recent data may be lost, but the remaining data would be intact and in proper format for future use.

To Switch to a different backend database file, pick the new file then press the link button [combo box and Browse and Link buttons] – A history of database files you have recently accessed is kept by the program. These files are listed in this combo box list. Selecting the database file from the list will automatically place the database path and file name into the combo box's field. If the file no longer exists, you will be notified in a message. Otherwise, you may then immediately select the Link button to link to the specific database file.

You may also use the associated Browse button to locate files you want to link to. Selecting the Browse button will take you to a standard Windows browse window. From here you may locate and select any Weatherization Assistant database file anywhere on your computer or any network to which you are attached. Selecting a file from the browse window will place the file's path and file name into the combo box's field. Then, select the Link button to link to the database file.

Whenever the Link button is selected, you will be shown a progress bar in a small sub-window which monitors the progress of the linking operation. When completed, the message "Data Link was successful" should appear. Select the "OK" button in this window. A similar linking process will then be performed for the Reporting module associated with the database, which will indicate that "Reporting Data Link was successful" when completed. Again, select "OK."

Following a successful linking operation, one of two courses will be taken by the program. If you do not use the User Logons feature (see "User logons with user names and passwords from the Agency/People/Passwords tab" in Section 11.4, *Features*), the display will return to the Data Link Main Menu item form with the newly linked database file information now visible in the upper portion of the data block being discussed here. If you do use the User Logons feature, you will instead be taken to the Weatherization Assistant's Log On form (see Section 3.3, *Starting the Weatherization Assistant*) where you will have to logon as a user of this specific database.

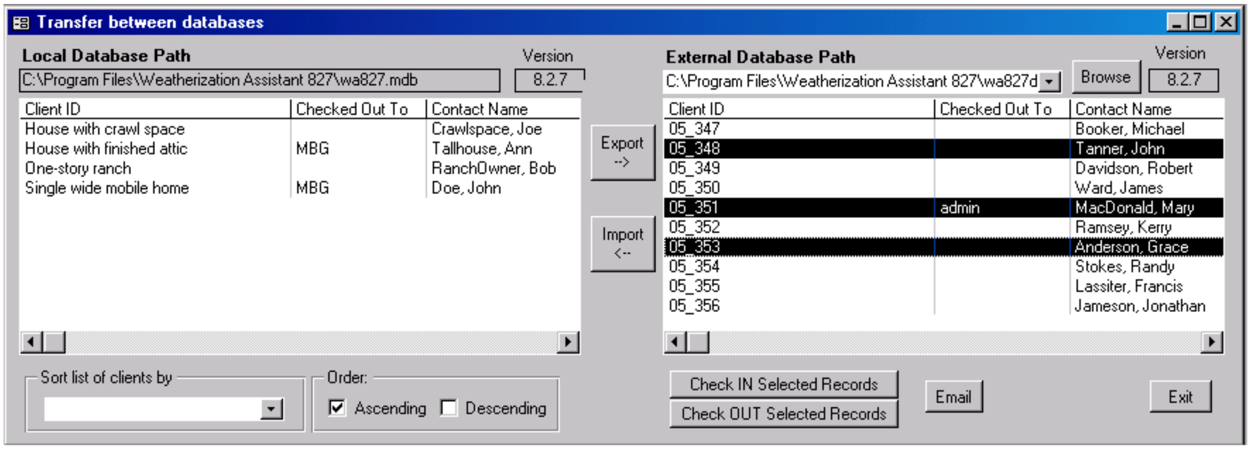
12.2 Currently Linked Reporting File

This data block acts the same as the "Currently Linked Backend Data File" block discussed above except that it links only to a Reporting file. Under most circumstances, linking to a report file will be accomplished for you, either on installation of the program or as you change database files (see Section 12.1 above). However, Version 8 of the Weatherization Assistant allows for multiple reporting modules (see Appendix B, *Weatherization Assistant Customized Reporting Feature Reference Document*). This data block allows you to choose which reporting module will be used in the current session of running the program.

12.3 Data Transfer - Import/Export via Database Files

The Weatherization Assistant provides you with two methods of sharing data with others. The transfer via database files method is most applicable to sending portions of your database or even single client records. The method is the same as was first introduced in Version 7 of the program, thus it's designation as "Version 7.4 Method." The method creates files either in the same format as your entire database (i.e., "mdb" files), or compressed and encrypted "wdz" files, where the designations relate to the "extensions" given to the file names of the files created. Whereas you may directly link to "mdb" files, the "wdz" files must be "imported" before their informaiton can be accessed. However, the latter files are smaller and their information is "encrypted" such that only those with the Weatherization Assistant software can view their contents.

Choosing the "Import/Export via Database (mdb, wdz) Files (Version 7.4 Method)" button will present you with the "Transfer between databases" form pictured below, though initially there will be no entries in the window on the right. The below figure has been produced with the "Check-in / Check-out" feature activated. This adds the "Checked Out To" columns in each half of the form's windows and the "Check IN Selected Records" and "Check OUT Selected Records" buttons.



Import/Export via Database Files (Transfer between databases) - Check-in/Check-out feature activated
Three clients selected for import

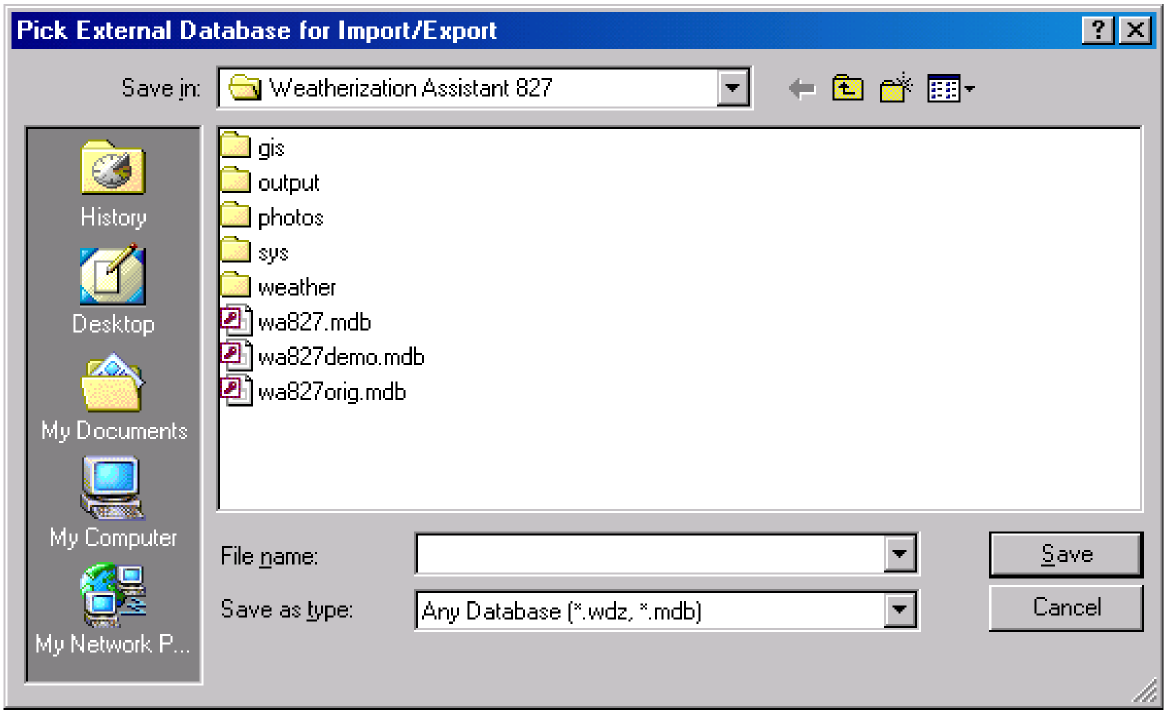
On the left of this form you will see a list of clients in the database you are currently accessing (linked to). The database path and file name are displayed in the "Local Database Path" box at the top of this half of the form as well as a reminder of what version of the program created these entries. The “Checked Out To” column will not be present if this feature is not activated during your session of program use (see “Check-in / Check-out client records” in Section 11.4, *Features*). Additional columns of data may be seen by using the horizontal scroll bar at the bottom of the window. The data columns available are:

Client ID	State
Checked Out To	Work Status
Contact Name	Work Status Date
Alt. Client ID	Last Check In
City	Last Check Out
Zip	Last Imported
Agency Name	Last Exported

Importing Clients (via database files)

To import clients to your database (add to this list) from another database, you must first locate the database file containing the clients you wish to import. If you have imported or exported clients previously, the database files you used will be displayed in the “External Database Path” combo box list at the top of the right half of the form. You may select one of these previously accessed files to use again on this occasion. Otherwise, select the Browse button to the right of this combo box.

This will take you to a standard Windows browse window, an example of which is shown below..



Data Transfer browse window

Use standard Windows techniques to locate the “mdb” or “wdz” file which contains the desired clients to import. The down arrow to the right of the “Save in” combo box will present you with a Windows directory tree with which to navigate your computer’s contents and connected networks in selecting a folder containing the file. Notice that the default location, seen in the “Save in” field, will be the location of the “mdb” file you are currently linked to. Once a location is selected, the contents of the folder will appear in the white space below the combo box. Clicking your mouse on the desired file from this listing will transfer the file name to the “File name” field nearer the bottom of the browse window. Select the “Save” button to accept this file as the one containing the desired clients, or “Cancel” to abort the search without having selected a file. Either will return you to the “Transfer Between Databases” form.

The right half of the "Transfer between databases" form will now contain a listing of clients in the selected database from which you are going to import. Note the display under the "Version" title indicates the version of the database whose clients are being displayed. [As of the initial release of Version 8, no ability to import prior versions’ data (Version 7 and below) has been implemented. The structure of the information differs considerably, making this a difficult feature to provide.] Select the clients to be imported by clicking on rows containing their information in the listing on the right of the screen, and using the other standard Windows item selection procedures. For example, you can select multiple clients lying adjacent to each other by clicking on the first or last, then holding down the [Shift] key while using the [Up Arrow] or [Down Arrow] keys to select others. Holding down the [Cntl] key while clicking on clients will allow you to select multiple clients which are not next to each other. To assist in the selection process, you may sort the listings by any of the client identifying criteria, using the “Sort list of clients by” combo box at the lower left of the form. The sort may be performed in “Ascending” or “Descending” order, depending on the selection made in the check boxes under “Order” to the right of the combo box. The sorting will sort clients on both halves of the form. In the figure at the beginning of this section, three clients have been selected.

Once you have completed the selection, click on the left pointing arrow which lies between the two halves of the form. The clients will be copied over into the database file you are currently using and the Client IDs and associated information will appear on the left half of the form. The status bar at the lower left of the form will monitor the progress of the operation.

Exporting Clients (via database files)

Exporting is somewhat a reverse process to that described above. You can export any set of clients in the database you are currently linked to and place them in either another existing database or have a new database created just for the clients you wish to export. However, if exporting to an existing database, the database must have been formed using the same version of the Weatherization Assistant. No "backward" compatibility has been provided.

To export clients, enter the “Transfer between databases” form, as described above for importing clients. If you will be exporting clients to an existing database, choose the database in the same manner you would chose a database for importing. Otherwise, use the “Browse” button on the form to specify only a location on your computer where you wish a new database to be created and enter the name of this new database in the "File name" field at the bottom of the browse window. You may choose to create a standard "mdb" database file or a zipped "wdz" file using the "Save as type:" combo box at the bottom of the form or simply by giving the file the appropriate extension, “mdb” or “wdz.” The "wdz" files are compressed to about one tenth the size of the standard file. They are also automatically encrypted to allow safe transport of confidential client information over public media. Next, click on the Save button to indicate your selection is complete. If the database file did not exist previously, you will receive a notice stating this and that the program is “Creating a database file so you can copy jobs to that database.”

You will be returned to the "Transfer between databases" form having the two side-by-side client listings. Choose the clients you wish to export from those listed on the left of the form . Multiple client selections may be accomplished as described above in the discussion on importing clients. When your client selection is complete, click on the right pointing arrow to initiate the export procedure. The status bar at the lower left of the form will monitor the progress of the operation. This process may be repeated to export additional clients, until all the desired clients have been exported to the specified database.

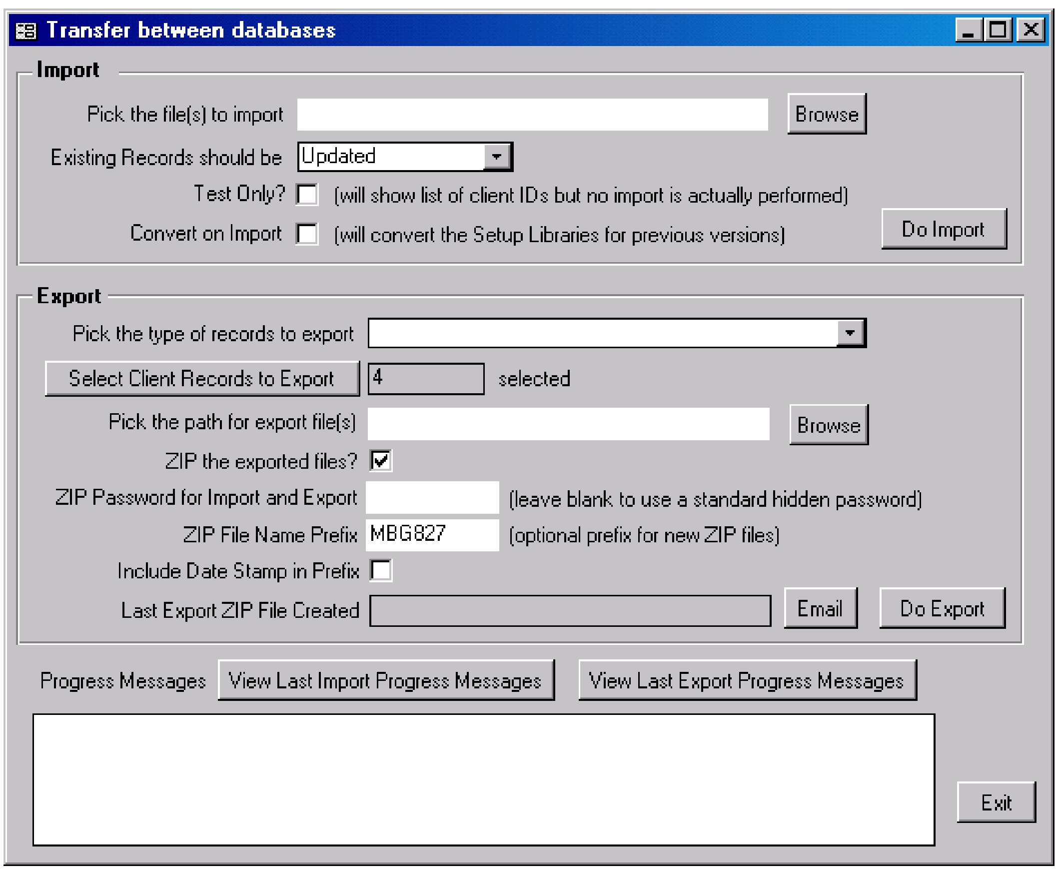
If you have setup the e-mail feature of the Weatherization Assistant (see Section 13.4, *E-Mailing from Within Weatherization Assistant*), you may click on the "Email" button to initiate sending the database file as an attachment to an e-mail. The file name may be automatically entered into the "Attach Files" field on the form. If not, you may copy and paste the database path and file name from the "External Database Path" field into the "Attach Files" field using standard techniques (see Section 4.9, *Copying and Pasting Data*). You will need to enter the e-mail address of the recipient and any Subject and Text you wish to include in the mailing. Then click on the "Send Email" button to send your e-mail.

Checking Clients In or Out

Whether you are importing or exporting client information, you can use the "Check IN Selected Records" and "Check OUT Selected Records" buttons to change the status of any client record appearing on either the left (Local Database) or right (External Database) halves of the "Transfer between databases" form. Simply select the desired client as you would for importing or exporting, then click on the appropriate button. If you choose the "Check OUT Selected Records" button, the client record will be "Checked Out to" the current logged-on user. Recall that these buttons appear on the form only if the "Check-in / Check-out" feature has been activated (see "Check-in / Check-out client records" in Section 11.4, *Features*).

12.4 Data Transfer - Import/Export via Text Files

The Weatherization Assistant provides you with a second method of sharing data. The transfer via text files method is most applicable to sending large quantities of data. It also gives the user greater control over individual data items within the client file. The method uses data formatted in "csv" (comma separated value) files or CSV files that have been compressed into "zip" files. These files are text files which could be read with any text editor, though the arrangement of data would be difficult to use directly. As text files in this specific format, other computer applications could be made to accept the data and integrate the information with other data.



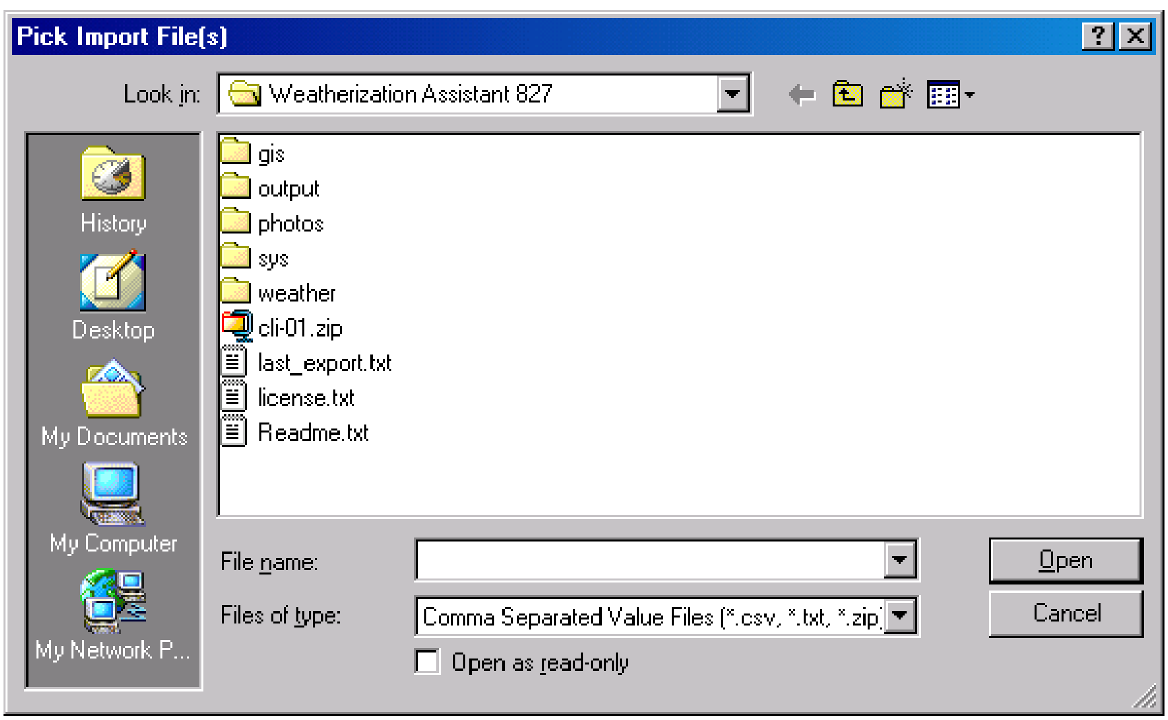
The Transfer between databases form (via Text Files)

Access this mode of data transfer by selecting the "Import/Export via Text Files" button on the Data Link Main Menu item. You will be presented with a "Transfer between databases" form designed specifically for transfer by text files. The form has three areas, "Import," "Export," and "Progress Messages." Each will be addressed separately below.

Importing Clients (via text files)

The "Import" block on the "Transfer between databases" form is shown below. The form is used specifically to import data which is in the "csv" or alternate "zip" formatted text files.

In order to import information, you must first "Pick the files(s) to import." Although you could type in the path and name of a file into this field directly, most often you will use the "Browse" button to the right of this field in making the file selection. The button presents you with a Windows browse window designed for selecting files.



Browse window for selecting files to import via text files

Use standard Windows techniques to locate the folder where the file or files you wish to import are stored. The "Look in" combo box list will present you with a directory tree with which to access other locations on your computer or any network you are currently attached to. Most of the time you will be looking for files with extension "zip." The file "cli-01.zip," seen in the figure above, is just such a file, having been created using a default naming convention. Clicking on the file name as it appears in the white space below the "Look in" field will transfer the name down to the "File name" field below. Only one file of type "zip" can be imported at a time.

Though possibly used less often, the program can import individual or groups of "records" of information using the "csv" files. All of the data related to any given client is composed of many individual "records" of data, each related to a different area of information (e.g., address, contacts, wall descriptions, etc). If, on exporting information (see below), the user has chosen to export record-by-record instead of by entire client, individual "csv" files will be created for each record type instead of a single "zip" file containing all records for a given client. Thus, on import, you could choose to import only data corresponding to specific record types. Adding to the flexibility, each "csv" file may contain information of the same type but for multiple clients. Thus, for example, you could choose to import only all of the billing data records for a group of clients in a single import. In this example, the potential exists for a utility to be able to provide client billing data in the "csv" format which could then be directly imported to the Weatherization Assistant. The Browse window may be used to select single or multiple "csv" files for importing (using the standard Windows [Shift][Arrow] and [Control][Mouse Click] techniques). Doing so will transfer multiple file names into the "File name" field.

Clicking on the "Open" button completes the file selection and returns you to the "Transfer between databases" form with the file's path and name automatically transferred to the "Pick the file(s) to import" field. If more than one file has been chosen in the file selection process ("csv" files only), the field will indicate "Multiple Files Selected."

You must next choose what the importing process should do if client information for the any specific client you are importing already exists in the database you are currently linked to. The choice is made using the "Existing Records should be" combo box list. The choices are, "Replaced," "Updated," and "Skipped." In making your choice, you need to think of individual records of client information and the data items or fields within the records. For example, a wall record within the NEAT audit for a client contains fields describing the wall's existing insulation type, its orientation, etc. If a given record of specific information already exists for the same client for which the importing process is being performed, selecting "Replaced" will replace entire records with the same record from the imported file. If "Updated" is selected, existing records are updated field-by-field, preserving any fields in the existing record that don't have information for matching fields in the record being imported. The "Skipped" selection skips importing records that already exist in the existing database for the same client. "Updated" is the default selection.

Choose the "Test Only?" check box if you wish to have the program perform a "dry run" of the importing process without actually writing any information to the database you are currently linked to. This will show you, in the Progress Messages window, the list of client records which would be imported, without actually performing the import, i.e. altering your existing database information. If importing "csv" files, information for multiple clients may exist in a given file. At the end of the messages produced in any import process, including an import using the "Test Only" option, a list of Clients for whom records are included in the import will be shown. This could be useful to review prior to actually performing the import which will alter your database.

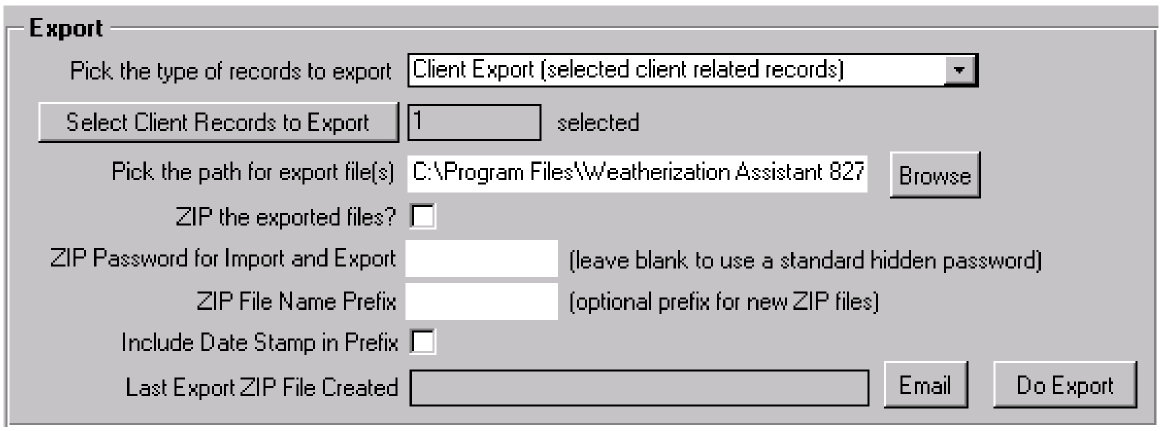
The "Convert on Import" check box is designed for importing records of Setup Libraries from different versions. However, it is intended for use with future releases of Version 8 only. As of the initial release of Version 8, no means of data conversion from versions prior to Version 8 are yet available.

When all of the specifications for the import have been established, select the "Do Import" button to actually perform the import. In the white space below the "Progress Messages" header, record-by-record progress of the importing process will be displayed. This may be too detailed for most users to be concerned with. However, at the end of the process, the message will indicate the success or failure of the import as well as the clients for which information was imported. If a failure should occur, the messages will indicate exactly what record caused the failure. This would allow an analyst to examine a specific location in the file being imported to determine the potential cause of the failure. With the increased information collected with Version 8, importing data can be relatively slow. It may be wise to copy the files to be used in the import to a local drive on your computer, if necessary, before initiating the process. Be patient and wait for the hour glass to disappear and the Progress Message to report the outcome of the process.

Use the "Exit" button to return to the main Data Link Main Menu item form.

Exporting Clients (via text files)

The "Export" block on the "Transfer between databases" form is shown below. It is used to export information to text files in either the "csv" or "zip" format.



To export information, you must first pick the type of export to be performed. The program allows you to export three types of information, "Client Export," "Database Dump," and "Error History." The "Client Export" produces either "csv" or "zip" formatted files for a client or group of clients selected in the next step of the export process. The "Database Dump" process does the same, except that it performs the process for all client records in the database you are currently linked to. This may be used by local agencies who report regularly to the state. The "Error History" export creates either a "zip" or "csv" formatted file of the run-time error messages. These are the same error messages reported under the Preferences Main Menu item (see "Log all Program Errors" in Section 11.4, *Features*).

If the type of export was chosen as "Client Export," you must tell the exporting process which clients in your current database you wish to have exported. Do this by clicking on the "Select Client Records to Export" button. Doing so will present you with a "Select Client Records" form. This form has applicability elsewhere in the program as well, specifically if any user-generated reports require selection of clients (see "Select Clients" in Section 5.1, *Agency Information*). For an explanation in the use of the "Selecting Client Records" form, see "Selecting Clients" below.

You must next tell the exporting procedure where to place the files it will create. You may enter a path directly into the "Pick the path for export file(s)" field. More often, though, you will use the Browse button to the right of this field to designate the path. The button takes you to a standard Windows directory tree from which to select the path. Use the tree to locate the desired folder, highlighting the folder when found. Then click on "OK." The path will automatically be transferred to the indicated field in the Export block of the "Transfer between databases" form. If, in the next step, you do not choose to create a single "zip" file from your export, you may wish to select an empty folder at this step to prevent the numerous "csv" files created from becoming confused with other files, possibly from another export procedure. It would be wise to first export a Database Dump to a local drive on your computer to speed the process.

Indicate with the "ZIP the exported files" check box whether you wish to create a single "zip" file as a result of the export. If the check box is not selected, multiple "csv" files will be created. See additional discussion regarding "zip" versus "csv" files at the beginning of the previous section on "Importing Clients (via text files)" for more information regarding these file types. Note that "zip" files are customarily about a tenth the size of their corresponding unzipped files.

The "ZIP Password for Import and Export" field gives users an optional added control over the security of information in the files created. All zip files created with the export process in the Weatherization Assistant have their information "encrypted," preventing non-users of the program from viewing their contents. However, the encryption is standard with the program, allowing any user to import the information and view it. If you wish to further restrict the accessibility of the information in the files, enter a password in this field when exporting the data. That password will then be required by any person importing the data in order to successfully accomplish the import. WARNING: If you assign a password and it is forgotten, the information in the exported files will no longer be retrievable by any means.

If a single "zip" file will be created by the export, the next two entry items simply give you flexibility in specifying the name of the file which will be created. The standard default name for a Client Export "zip" file is "cli-##.zip; for a Database Dump "zip" file, the default name is "db-dump-##.zip; and for an Error History "zip" file, "err-hist-##.zip." In all three cases, the "##" is a two digit integer insuring uniqueness of the file. The integer will be selected automatically based on other existing files in the location to which the file is to be exported. To add greater specificity you may enter characters in the "ZIP File Name Prefix" field. If entered, these characters will be added as a prefix to the default name. Similarly, if the "Include Data Stamp in Prefix" check box is selected, a date will be used as part of a prefix in the file name. The date format will be "yyyy-mm-dd-dow," for example, "Prefix2005-09-30-Fri-cli-01.zip."

When all of the specifications for the export have been established, select the "Do Export" button to actually perform the export. In the white space below the "Progress Messages" header, record-by-record progress of the exporting process will be displayed. This may be too detailed for most users to be concerned with. However, at the end of the process, the message will indicate the success or failure of the export as well as confirm the exported "zip" file name (if a "zip" file was created) and that the process is "done." If a failure should occur, the messages will indicate exactly what record caused the failure. This would allow an analyst to more likely determine the potential cause of the failure. With the increased information collected with Version 8, exporting can be relatively slow. It would be wise to export the file(s) to a local drive on your computer. Be patient and wait for the hour glass to disappear and the Progress Message to report the outcome of the process.

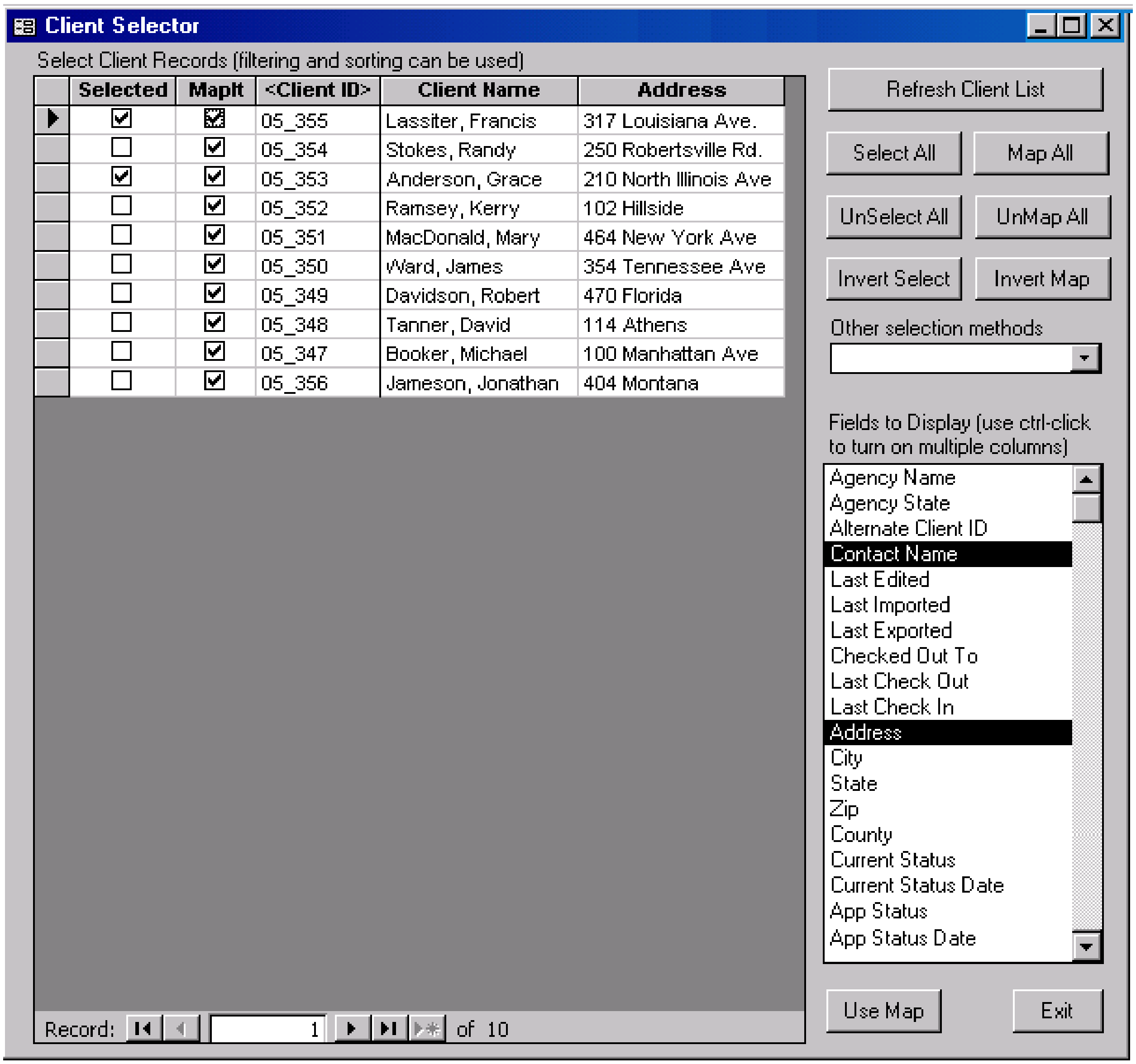
If you have setup the e-mail feature of the Weatherization Assistant (see Section 13.4, *E-Mailing from Within Weatherization Assistant*), you may click on the "Email" button to initiate sending the files created by the export as an attachment to an e-mail. If a single "zip" file was created by the export, the file name will be automatically entered into the "Attach Files" field on the form. You will need to enter the e-mail address of the recipient and any Subject and Text you wish to include in the mailing. Then click on the "Send Email" button to send your e-mail.

Selecting Client Records

The Client Selector form is used anytime there is a need to select specific clients from your entire list of clients in a database. This occurs when specifying which clients' data are to be exported to a text file or included in a user-defined report (see "Select Clients" in Section 5.1, *Agency Information*).

The form displays a list of the Client IDs for all clients in your database on the left side of the form along with a column of check boxes denoted as "Selected." To select clients, click on the check boxes next to the clients you wish to have included in the selection. To assist in identifying the clients, the form will also display additional information for each client, as chosen by the user in the "Fields to Display" window. Use the standard Windows selection technique of the [Cntl][Mouse-Click] combination to select which client information fields you wish displayed. If you select a significant number of fields, you may need to use a horizontal scroll bar which will appear at the bottom right of the listing to view some of the fields.

The form allows sorting and filtering of the entries. Once you have chosen the client information fields to be displayed, you may click your mouse on the header of any column of information (which will place the entire column in reverse video), then click on the A->Z or Z->A sorting buttons at the top of the Weatherization Assistant application window. This will sort the records displayed in alpha-numeric order according to the data item chosen.



The Client Selector form (GIS feature on)

You may also "filter" the records to be displayed. For example, if one of the fields you chose to have displayed included the City, and clients in your database lived in various cities, you could click your mouse on any city entry of a particular city you were interested in, then click on the filter button at the top of the window,

. Your display would then include only those clients from the city selected. Be careful when using filtering. If you forget that your display of records is filtered, you may wonder what happened to some records you would otherwise expect to see in the display. To cancel filtering, select the remove filter button, .

Buttons on the form allow alternate methods of selecting clients. The "Select All" button will select all of the clients displayed. You could then individually un-check the check boxes of those clients you do not want selected. The "UnSelect All" button will eliminate all previously selected clients, allowing you to begin the selection process again. The "Invert Select" button will cause all of the currently selected clients to become un-selected and all of the un-selected clients to be selected.

If you use the Check-in/Check-out feature of the Weatherization Assistant (see "Check-in / Check-out client records" in Section 11.4, *Features*) or have exported or imported specific client records, as described elsewhere in this chapter, the client selection methods under the "Other selection methods" combo box list may also be useful. The selections from the list are:

Checked out to Me	Edited since last Import
Edited since last Check out	Edited since last Export
Edited since last Check in	

The choices on the left in the list above apply only if you are using the Check-in / Check-out feature. The first category will display only those client records currently checked out by you, the current user logged on. The next two choices will display all records which have been altered since they were last checked out or in, regardless of who performed the check-out or check-in. This can be useful, not only in selecting client records, but also in identifying records that you personally have checked out or those which have been altered since having been checked out, possibly an undesirable situation. The choices on the right in the table look for all clients that have been exported or imported.

If you have implemented the Geographic Information System (GIS) feature (see Section 13.2, *Geographic Information System (GIS)*) of the Weatherization Assistant, an additional column will appear in the list of clients and several buttons will be added to the form. The "Mapit" column of check boxes allows you to select which clients you wish to have mapped. This is a separate selection process from that using the "Selected" check boxes. The three buttons, "Map All," "UnMap All," and "Invert Map" have the analogous effect on the mapping selection as do the three corresponding buttons described above for the actual client selection process. Having made the selection of clients to map, clicking on the "Use Map" button will display a map with the locations of the clients' homes indicated with stick pins. This may be useful, for example, in deciding what homes are in the same vicinity for establishing a visit schedule. However, there are also capabilities within the mapping routine to "select" homes on the map for the actual client selection process (see the GIS reference given above). Having made the selection using the map will automatically check the "Selected" check boxes on the Client Selector form corresponding to the homes selected on the map.

Use the "Refresh Client List" button if the Client Selector form has remained open while other program activities have been performed which might change the listing of clients included on the form.

Chapter 13

13.1 Digital Photos

Starting with Version 8 of the Weatherization Assistant, it is now possible to organize digital photographs related to your weatherization work. Photos may be saved at several levels, as associated with the Client, an Audit, or a specific Work Order. Read the Photos section in each of the chapters discussing these three Main Menu items for additional information.

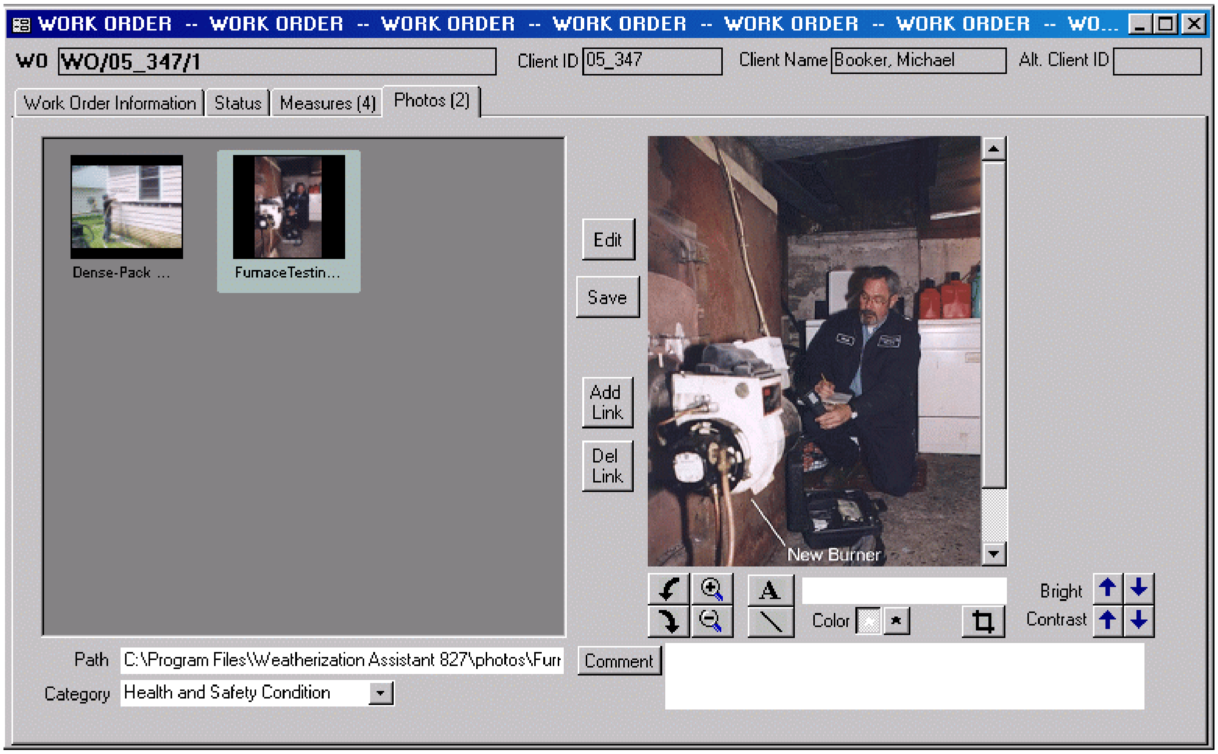
There are two methods of photo storage and editing supported in the Weatherization Assistant: the pathname method and the third party photo browser. Use the Features tab under Preferences (see Items 1 and 2 in Section 11.4, *Features*) to choose which method is displayed on your forms. Both methods assume that you know how to use a digital camera to take pictures and that you know how to move those pictures as JPG (jpeg) files to folders on your computer. The Weatherization Assistant also gives you tools for cropping, rotating, adjusting, and annotating each of your photographs. Your annotations are actually stored in the JPG file header thus preserving your notes if the JPG files are moved.

With networked installations you can store all the digital JPG files in shared folders with each client computer accessing the same images. However, note that in order to have each client computer access these photos, each must have assigned the same drive letter to the shared folder on the network server such that the pathnames stored refer to the correct location.

Pathname Method of Photo Storage

The first method uses a photo tab displayed on the Client, Audit, and Work Order forms to access the photo feature. When selected, you will be presented with the pathname photo browser form. The form is the same regardless of which of the three Main Menu items access it. The form accessed for a work order is shown below.

Tab for pathname method of photo storage



Pathname photo browser

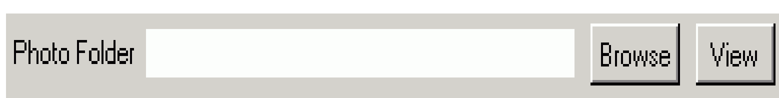
Photos are added to the collection by using the "Add Link" button in the center of the two panes on the form. The button will take you to a standard Windows browse window designed for selecting files. This window is used in the same manner as it is to choose files to be imported (see "Importing Clients (via text files)" in Section 12.4, *Data Transfer - Import/Export via Text Files*), except now you will be looking for the JPG files you downloaded from your digital camera. If you are familiar with Windows Explorer, you may also use the standard drag and drop procedure between this application and the Weatherization Assistant's photo browser to add photos to a collection. Simply drop the photo files into the left pane in Weatherization Assistant's photo browser window. The full pathname for each JPG file is stored in the database and associated with each photo. This way, the JPG files can be stored in whatever folders make sense for your installation. For example, you might want each auditor to have their own shared folder for storing their photographs or place all your digital photos in a single shared folder.

Each photo added to your collection will display a thumbnail in the browse pane. Clicking on any of these thumbnails will select it and display the path to the photo file in the Path field below the browse pane. You may also assign a category to the photo using the Category combo box. Choices are: Existing Conditions, Health and Safety Condition, Work Completed, Drawings and Documents, and Other. A photo is deleted from your collection by selecting the "Del Link" button. The actual JPG file is not deleted, only the application's link to the file, thus deleting the thumbnail and accessibility to the file.

Highlighting a photo's thumbnail in the browse pane and pressing the Edit button or double clicking on a thumbnail will open the photo in the editor pane on the right portion of the form. When the photo is opened in the editor, you can crop, rotate, adjust brightness and contrast, add text or lines, and add comments of any length using the controls below the image. Most of these processes are self-evident. However, to add text to your photo, enter the text in the field to the right of the "A" button below the photo, select the color of the text (white or black) with the buttons just below the text, press the "A" button, locate the cross-hair cursor at the point in the photo you want the upper left corner of the text to appear, and click your mouse. Pressing the Save button saves your edits to the file pathname shown at the bottom of the browser pane. If you want to preserve your original photos, change this pathname before saving any of your changes.

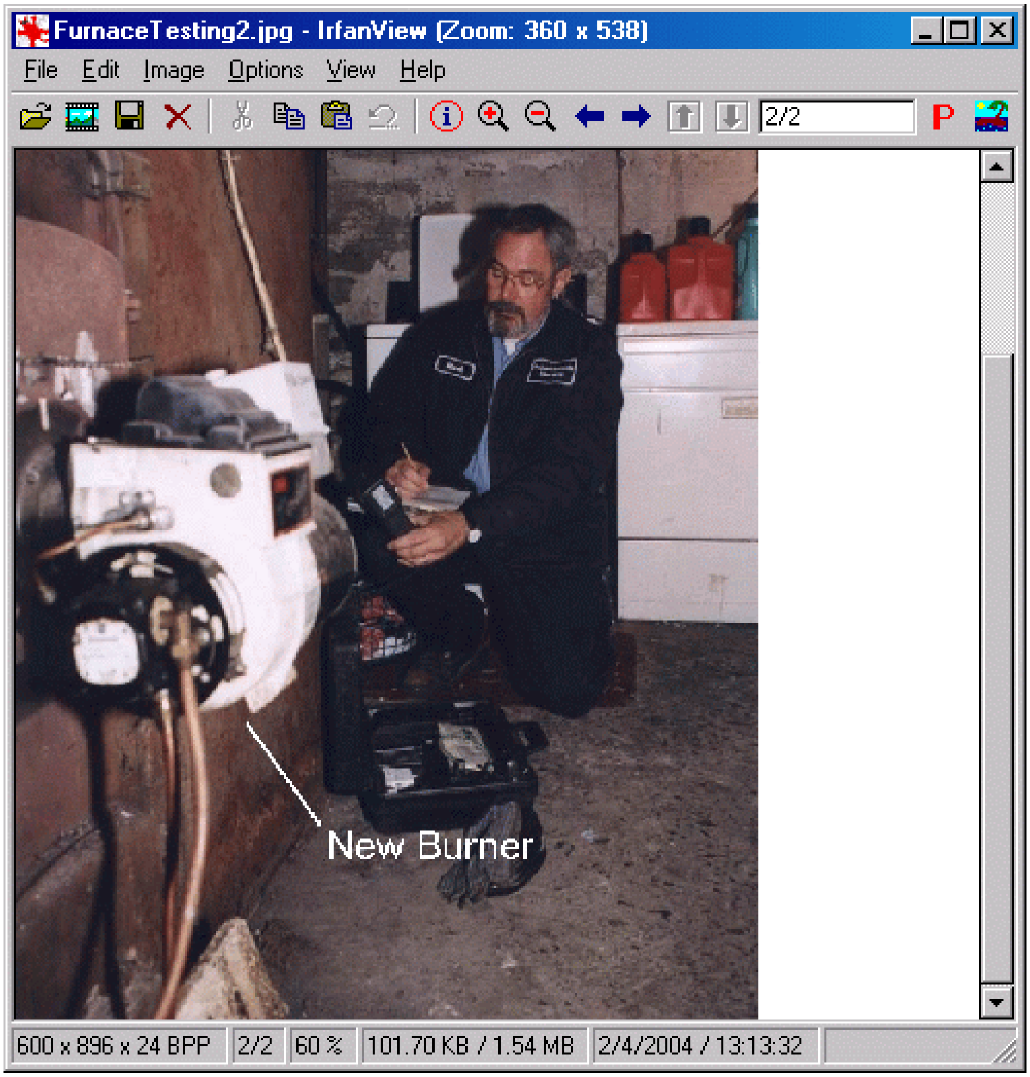
Third Party Photo Browser

The second method of photo storage and editing available in the Weatherization Assistant uses a licensed application program (IrfanView) to view and edit photos. The method assumes that you will be storing all of the JPG files for each client, audit and work order in unique folders (perhaps sub-folders under a shared photos folder on a shared drive or in sub-folders under the Weatherization Assistant's "photos" folder). With this method, only the path name to the folder is associated with the record. The Photo Folder field on the Information tab of these three record types contains the path name to the folder containing the JPG files. Once you enter the path, either manually or using the "Browse" button, it will remain with the record unless you change it. The "View" button is used to start IrfanView, where thumbnails of all the files in that folder will be displayed. If chosen to be viewed, a directory tree will also appear displaying the location of the folder currently being accessed. Double clicking on any thumbnail will take to the photo editor.



Controls on Information tab for third party photo browser

The editor for the third party browser also contains numerous tools to crop, rotate, adjust, and annotate the JPG files.



Editor of third party browser

It is a full featured photo editor whose capabilities are beyond the scope of this manual to totally describe. It is suggested that you experiment with the editor using a photo which is not of value or a copy of a photo, though you could simply choose to not save your changes. Use the "IPTC info" button under the Image/Information menu option in the editor to add detailed comments related to each photo. Save your changes to the photo using the File/Save or Save as menu item. The [Esc] key will exit the editor.

13.2 Geographic Information System (GIS)

An optional feature of the Weatherization Assistant Version 8 is geographical encoding of each client location performed by the Graphic Information System (GIS). The feature allows you to map the location of a single client or a group of clients. It may be used to select clients to include in a user defined report (see "Select Clients" in Section 5.1, *Agency Information* and Appendix B, *Weatherization Assistant Customized Reporting Feature Reference Document*) or to select client data to export (see "Exporting Clients (via text files)" in Section 12.4, *Data Transfer - Import/Export via Text Files*). It may also be used simply for its own ability to locate clients homes (see above referenced "Select Clients" and the discussion of the "Map" button in Section 6.1, *Client Information*).

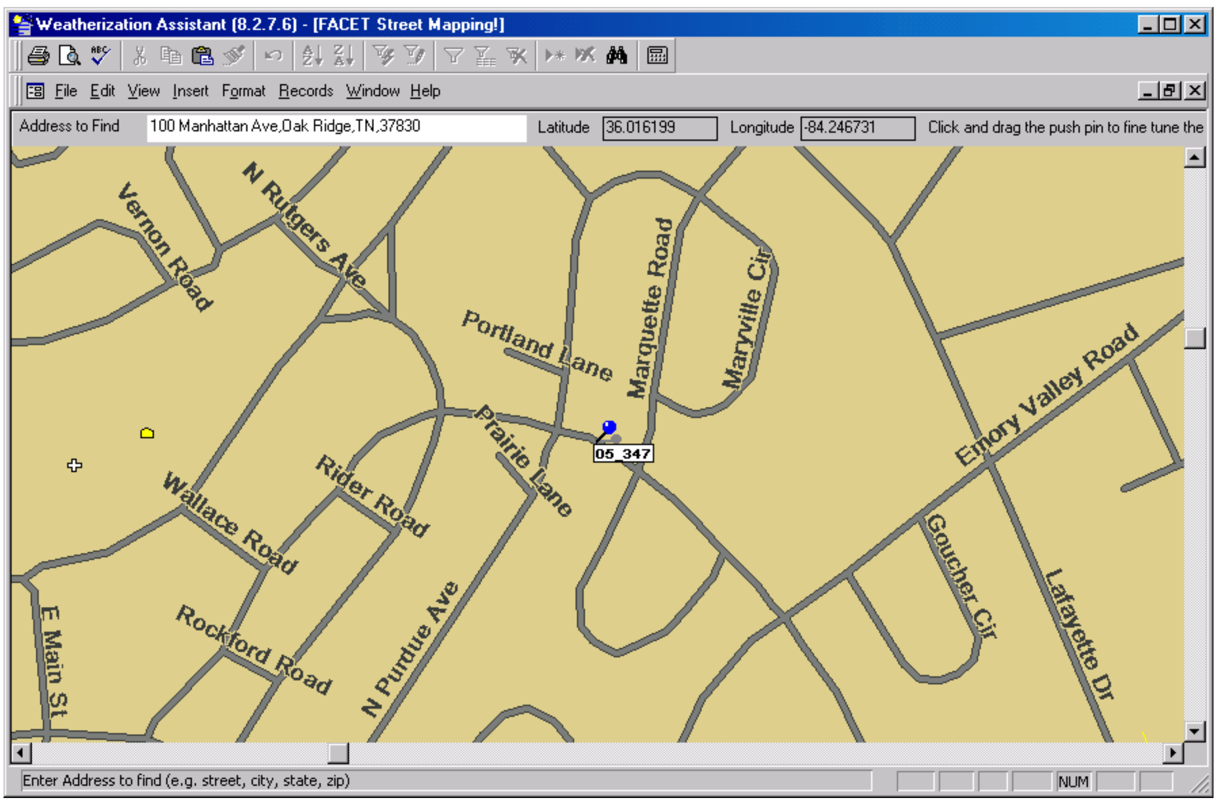
The Geographic Information System requires download of two additional files (from the same Weatherization Assistance Program sponsored site on which the main program is posted) and an installation procedure. The first file you will need to download, "base.zip," is common to all states. Choose the second based on your state of residence (e.g., "tn.zip" for Tennessee). You may download and install files for more than one state if needed. Both the "base.zip" and the state specific file are "zip" files requiring "unzipping." Most recent versions of Windows will include a routine to do this. Once downloaded to a location on your computer, double clicking on either zip file should present you with a request for a location on your computer where the files are to be placed once unzipped. Select the GIS folder under the location where you installed the Weatherization Assistant, normally, "C\Program Files\Weatherization Assistant 827\GIS." Unzip both the base.zip and your state specific file into this location. Make sure that all individual files are in this same location, not in any sub-folders of this location. Sometimes the unzipping routine will place the state specific files in a separate folder named after the abbreviation for the state. If this occurs, use Windows Explorer, or some other file handling application, to move them to the GIS folder.

Make sure to turn the feature on in Preferences the next time you start the Weatherization Assistant program (see "Geographic information system (mapping)" in Section 11.4, *Features*). After successful installation of the feature, the "zip" files are no longer needed. All files associated with the GIS feature are used under a license agreement and cannot be duplicate or further distributed.

Once installed and activated, the GIS mapping button will appear in two locations within the program: the Client Information tab and the Client Selector form, the latter accessible from the Agency Information tab and the Data Link Main Menu item. Use of the feature, as accessed from these two locations, differs as do some of the controls on the resulting form. When accessed from the Client Information tab, the primary use is to locate a single client. Thus, only one location will be indicated on the map. When accessed from the Client Selector form, the purpose is to select a group of clients from all those in your database. Thus, many locations may be displayed on a single map. The two different applications will be discussed separately below.

Client Location

When the "Map" button on the Client Information form of the Client Main Menu item is selected for a client having an address understood by GIS, a map with the location indicated is displayed.



GIS Map for Single Client Location

Note that the address of the location is automatically entered in the "Address to Find" field with the location's Latitude and Longitude also indicated. Attached to the pin denoting the location is the Client ID. A feature of the Client Location GIS map is that if you find the location to be different from the originally displayed location, you may click on the pin and drag it to its correct location. This will not change the address, but will update the coordinates of the location, which preserves your change for future references via the GIS mapping. On exiting the map, you will asked to confirm your desire to preserve this change.

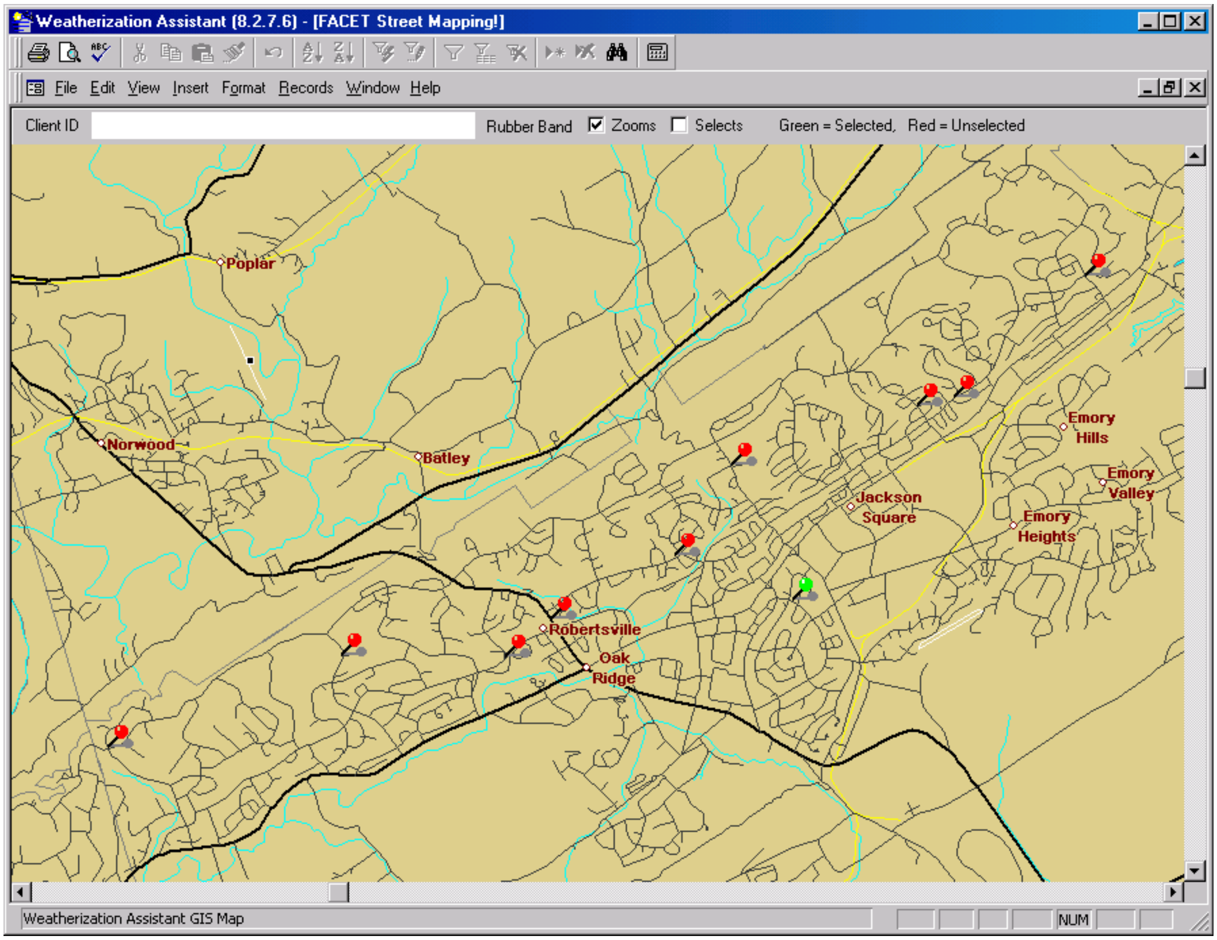
Most of the useful features associated with this use of GIS are accessed by right clicking your mouse on the map. Doing so will produce a menu from which you may zoom in or out, return to the previous scale ("Unzoom"), have the location displayed on a map of the entire state or country, enter a different address to locate, or print the map. An alternative method of zooming in is to outline a rectangular sub-area of the map by holding down your left mouse button while moving your mouse across the map. When you release the mouse button, the area outlined will then fill the window.

Client Selection

The second use for the GIS feature is to select clients or simply view a group of clients. It will be accessed from the Select Clients button located either on the Agency Information tab under the Agency Main Menu item or from the "Exporting Clients (via text files)" button under the Data Link Main Menu item. See the discussion on "Selecting Client Records" at the end of Section 12.4, "Data Transfer - Import/Export via Text Files for initiation of the GIS map using the "Use Map" button on the Client Selector form.

The map displayed when initiated in this mode will likely have multiple locations denoted by pins. Note that the pins are of two different colors, red and green. The map was initiated from a Client Selector form in which some clients may have already been selected. The map indicates this by having the selected clients' locations designated with the green pins. Un-selected clients have red pins.

One of the uses of the GIS map initiated from the Client Selector form is to give you an alternative method of selecting clients. You may change a client from being un-selected to selected, or vice versa, by simply clicking on the pin. If all the locations within a specific area are to have their selection status changed, activate the "Selects" check box at the top middle of the window, place your mouse at a corner of a rectangle which is to enclose the clients of interest, and drag your mouse to the opposite corner of the rectangle. All clients within the rectangle you have outlined will have their selection status reversed.



GIS Map for Client Selection

Any changes made in the selection status of clients made from the map will be automatically transferred back to the client selector form from which the map was initiated.

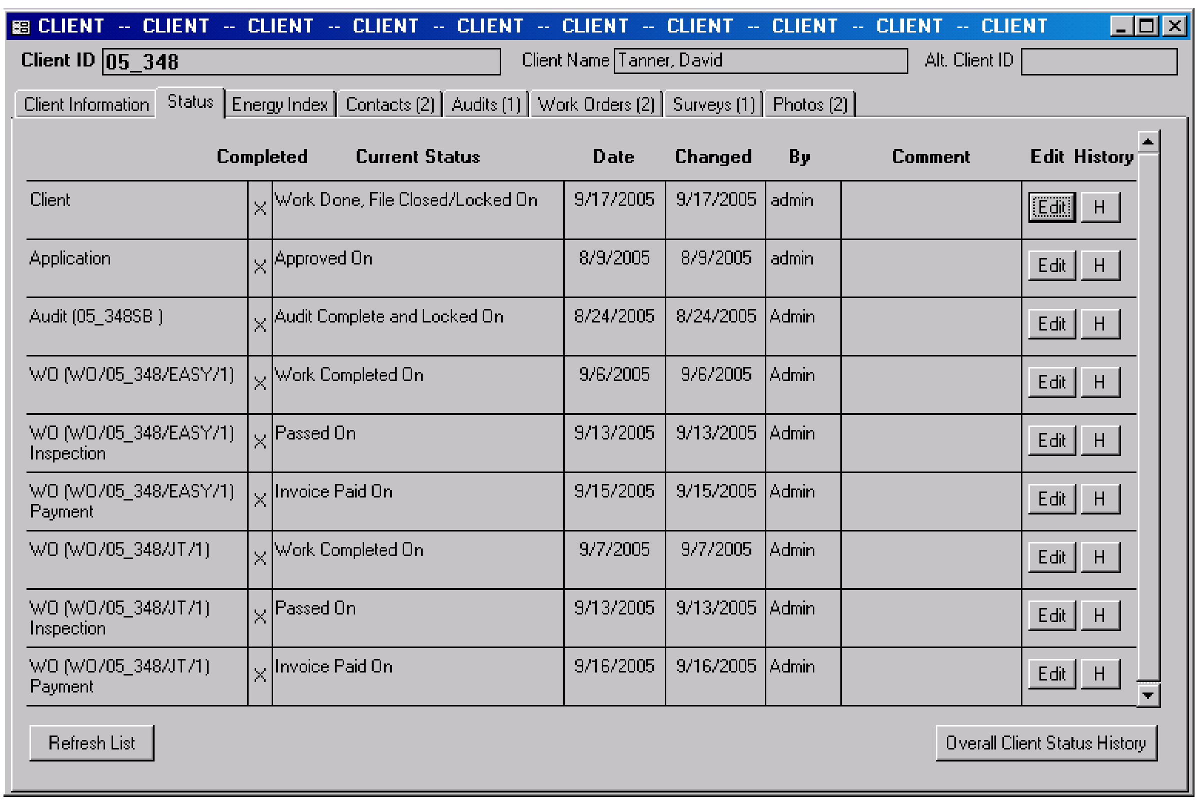
When you click your mouse on a specific client's pin, that client's ID will appear in the Client ID field. Double clicking on this field will then take you to the Client Information form (see Section 6.1, *Client Information*) for that client.

As with the map used to locate a single client, the client selector mode of the GIS map has additional features accessible by right clicking your mouse on the map. The menu then displayed allows you to zoom in or out, return to the previous scale ("Unzoom"), have the location displayed on a map of the entire state or country, enter a different address to locate, or print the map. An alternative method of zooming in is available. Activate the "Zooms" check box at the top middle of the window. Then, outline a rectangular sub-area of the map by holding down your left mouse button while moving your mouse across the map. When you release the mouse button, the area outlined will then fill the window.

13.3 Status Tracking

Version 8 of the Weatherization Assistant has an optional feature which allows you to track the status of Clients, Audits, and Work Orders. The table on the following page lists all status categories and their available settings. Settings of these statuses are normally performed from the Status tab on each of the three Main Menu item forms. See each of the *Status* sections for these Main Menu items, Sections 6.2, 7.2, and 8.2. See also Section 5.9, *Status History,* for information on reviewing the history of settings.

The Status tab under the Client Main Menu item allows you to view the current status in all three major categories, Client, Audit, and Work Order (for each work order). Below is a sample display of this form.


CLIENT -- CLIENT -- CLIENT -- CLIENT -- CLIENT -- CLIENT -- CLIENT -- CLIENT -- CLIENT -- CLIENT

Client ID 05_348 Client Name Tanner, David Alt. Client ID

Client Information | Status | Energy Index | Contacts (2) | Audits (1) | Work Orders (2) | Surveys (1) | Photos (2)

	Completed	Current Status	Date	Changed	By	Comment	Edit	History
Client	X	Work Done, File Closed/Locked On	9/17/2005	9/17/2005	admin		Edit	H
Application	X	Approved On	8/9/2005	8/9/2005	admin		Edit	H
Audit (05_348SB)	X	Audit Complete and Locked On	8/24/2005	8/24/2005	Admin		Edit	H
WO (WO/05_348/EASY/1)	X	Work Completed On	9/6/2005	9/6/2005	Admin		Edit	H
WO (WO/05_348/EASY/1) Inspection	X	Passed On	9/13/2005	9/13/2005	Admin		Edit	H
WO (WO/05_348/EASY/1) Payment	X	Invoice Paid On	9/15/2005	9/15/2005	Admin		Edit	H
WO (WO/05_348/JT/1)	X	Work Completed On	9/7/2005	9/7/2005	Admin		Edit	H
WO (WO/05_348/JT/1) Inspection	X	Passed On	9/13/2005	9/13/2005	Admin		Edit	H
WO (WO/05_348/JT/1) Payment	X	Invoice Paid On	9/16/2005	9/16/2005	Admin		Edit	H

Refresh List | Overall Client Status History

Client Status tab

The left most column of the form lists the status category as well as the name of the particular record for which the status is being reported (e.g., the Audit or Work Order Name). The "Completed" column will contain an "X" if the status being reported constitutes one which the program sees as indicating completion of the specific phase related to the status (see the table on the following page).

Client Status Categories and Settings

General	Application
Active On	Received On
Work Done, File Closed/Locked On*	Eligibility Verified On
No Work Done, File Closed/Locked On*	Approved On*
File Locked On	Referred On*
Delayed On	Denied On*
Other	Delayed On
	Other

Audit Status Categories and Settings

Audit
Site Visit Scheduled For
Site Visit Completed On
Billing Data Collected On
Recommendations Generated On
Audit Complete and Locked On*
Walk Away by Auditor On*
Delayed On
Denied On
Other

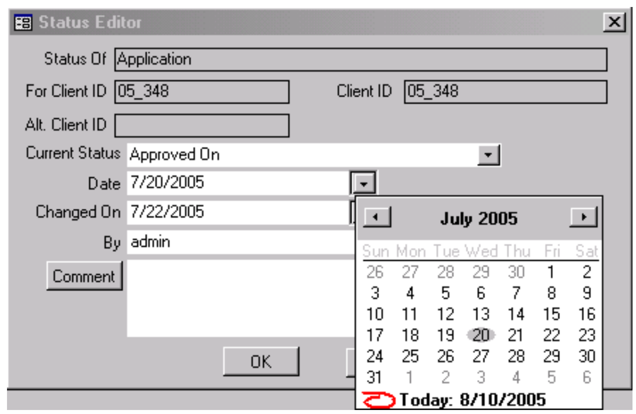
Work Order Categories and Settings

General	Inspection	Payment
Work Order Created from Audit On	Scheduled For	Invoice Received On
Work Order Details Completed On	Passed On*	Invoice Approved On
Work Order Approved On	Failed On	Invoice Paid On*
Work Order Issued On	Not Required*	Not Required*
Work Scheduled to Start On	Delayed On	Delayed On
Work Started On	Other	Other
Work Completed On*		
Client Signed Off On*		
Work Refused by Client On*		
Work Order Canceled On*		
Work Order Modified On		
Rework Completed On*		
Delayed On		
Other		

Statuses tagged with an asterisk (*) are considered to represent completion.

Following the designation of each current status are two dates, a reference to an agency contact or user, and a comment. The first Date indicates when the current status became effective. For example, the Application was "Approved On" this particular "Date." The second date and the reference to the individual ("By") tells when and who changed the status setting to its current level. Thus, even though the application may have been approved on 7/22/05, the setting might not have been changed to indicate this until a few days later.

Status settings are changed by selecting the Edit button in the row of the setting category you wish to change. You will be presented with the Status Editor form. The form will remind you in un-editable fields of the status category you are about to change and display for you the client identification parameters. The "Current Status" field will indicate the existing status, if one exists. If this is the first time you have accessed this status category, the field will be blank. Use the Current Status combo box list to change the status to the appropriate setting, i.e., one of those listed in the table on the previous page.



Status Editor for Client Application

Click on the Date combo box arrow to be presented with a calendar to select the date on which the status became effective. The current date will be circled in red on the calendar. Use the left and right arrow boxes at the top of the calendar to display other months, if necessary. Click on the date you wish to select, and it will automatically be entered in the Date field. If you save the status change without entering a date in the Date field, it will automatically be assigned the current date.

Perform the same steps to set the "Changed On" date. However, this may not be necessary since this date will be set to the current date if left blank, which is likely what you would have entered.

Use the "By" combo box to select who is making this change, likely yourself. The names which will appear are those you have entered in the Contacts tab under the Agency Main Menu item. If left blank, this field will be automatically set to the agency contact who has logged on for this specific use of the program, if you are using the Logon Feature (see "User logons with user name and passwords" in Section

11.4, *Features*). Otherwise, it will be set to "admin," indicating that if the Logon Feature is not being used, all users are assumed to have administrative privileges.

When satisfied with your entries, select the OK button to save the changes or select the Cancel button to exit without saving your changes to the status category. You will be returned to the Client Status tab form.

On the main Client Status form, choose the "H" button to see a history of all settings for a specific status category for the current client. The history will be displayed in a Data Sheet View format. Since these listings are historical, no changes can be made in the entries from this form, other than deletion of entire records. The record deletion might be necessary to delete an incorrect status setting, which, even if corrected, leaves the incorrect setting in the history. See Section 4.10, *Deleting Data* for information on deleting records while in a Data Sheet View. Close out the Status History form using the traditional Windows X box in the upper right corner of the form. This will take you back to the main Status tab under the Client Main Menu item.

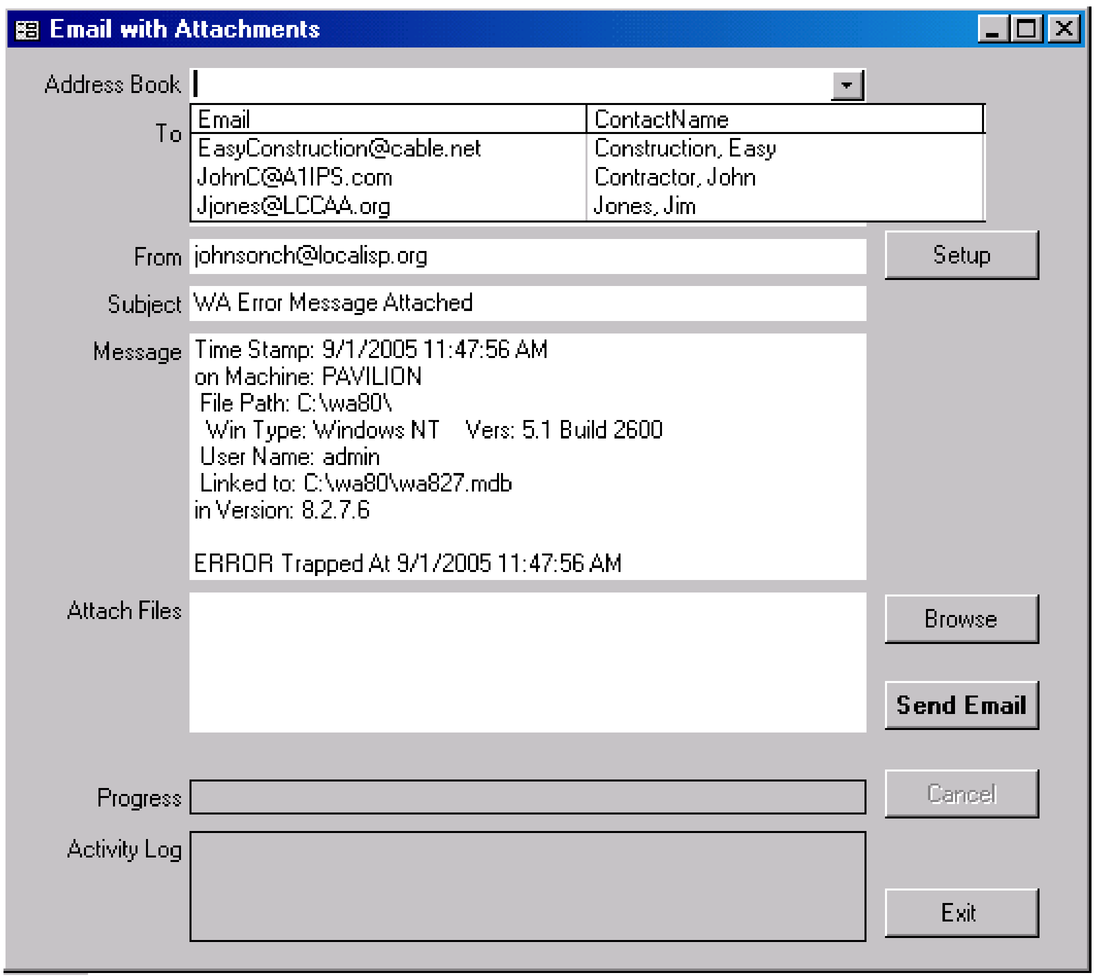
Use the Refresh List button on the Status form to insure that any status changes which may have been made since opening the form are reflected in the display.

The Overall Client Status History button at the bottom right of the Client Status form presents you with a Data Sheet View of all status categories for the client. It essentially combines all of the displays obtained by selecting each of the "H" buttons for each category individually. However, there is a difference between the individual displays and this overall history form. Note that the Record Name header on this form is in angle brackets (<>). This implies that the Record Name for each record whose status is being reported can be double clicked with your mouse to take you to the record having the indicated status. This then allows you to make any changes you desire, including status, to the record. When you exit the record opened with this technique, you will be sent back to the Overall Client Status History form from which it was referenced. You may exit this form in the customary manner to return to the Status tab under the Client Main Menu item.

13.4 E-Mailing from Within Weatherization Assistant

The Weatherization Assistant allows you to send e-mails directly from within the program using an address book of e-mail addresses generated from the Contacts tab under the Agency Main Menu item. Messages and/or attachments may be automatically linked to an e-mail when initiated using the "E-mail" buttons located on the Error History form (see "Log all Program Errors" in Section 11.4 *Features*) or on either of the "Transfer between databases" forms used to export client information (see discussions on "Exporting Clients" in Sections 12.3, *Data Transfer - Import/Export via Database Files* and 12.4, *Data Transfer - Import / Export via Text Files*).

For example, below is the form displayed having selected the "Email this Error Message" button on the Error History form. The form is shown with the "Address Book" combo box list displaying a sample list of e-mail addresses which were entered under the Agency Contacts tab.

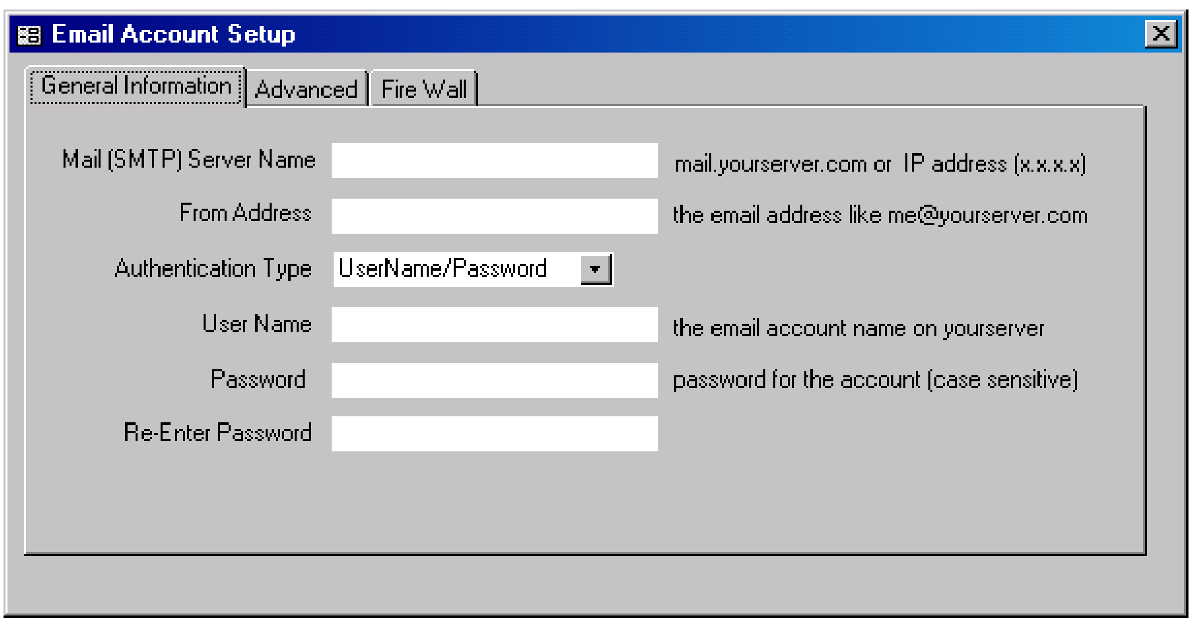


E-mail specification form for reporting error message

Selecting one of the entries in this combo box list will automatically transfer the address to the "To" field. The "From" field is automatically filled in as the "From Address" entered in the e-mail setup (see below). In this example, the Subject and Message fields are automatically filled in, reflecting the entry in the Error History from which the e-mail was initiated. You may alter and add to the message to give any additional information. If the e-mail had been initiated from one of the Export forms having created a single file with the exported information, the file path would have been automatically entered in the "Attached Files" field. Otherwise, use the "Browse" button to locate and select files to attach. Once completed with the e-mail specification, select the "Send Email" button to send the message and attached file(s).

The "Progress" field will notify you of the progress in sending the e-mail. If attachments are large, it may take some time to complete the process. The field will indicate to you how much (how many bytes of data) of the transmission has been sent and how large (total bytes) the total transmission is. The "Activity Log" will contain any messages from the e-mail server, more than likely the connection status and any problems which might be encountered. The messages could be used by a system administrator to debug any problem with e-mail transmissions that might occur.

In order to use the e-mail feature, you must have an e-mail account on a server somewhere. The Setup for the e-mailing capability in the Weatherization Assistant need be performed only once, though it may be altered at any time. The form presented upon selecting the "Setup" button is shown below.



E-mail Setup form

Contact your system administrator for the information required to successfully initiate your e-mail account according to local procedures. The administrator may also need to address information on the two additional tabs: "Advanced" and "Fire Wall."