# EddyVISION32™ v6.x

# *DBMS*

# *User Manual*

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## *Introduction*

DBMS v6.0 (Database Management System) is part of the EddyVision32™ suite of eddy current related software products produced by CoreStar International Corporation. These products are designed to operate under a Windows XP or Windows 2000 environment (*latest service packs*). Windows 95/98/ME/NT are not supported. Some features of the DBMS software are:

- DBMS can open any MS Access database regardless of the internal structure.
- Tubesheet plots or *maps* can be printed on any Windows compatible printer.
- Tubesheet maps can be exported to *emf* and *bmp* files for use in reports, presentations, emails, etc.
- The database files are stored in MS Access 97, 2000, or 2002 format, making it easy to import and export data to other MS Office products.
- DBMS can simultaneously display any number of query results on a tubesheet map.
- Over 100 different map symbols are available with an unlimited color selection.
- Standard Query Language (SQL) is used to query the database.
- Queries can be setup to output selected database fields in any order on printed lists.
- Formatting features for printed lists such as control of fonts, specifying titles, headers and footers, automatic page numbering, page justification, and more.
- Powerful features are available for inspection planning and tube repair tracking.

Also available in NetView - the network version of the DBMS software. NetView provides users with read-only access across a local network (LAN). Users can query a project's database and have the results displayed on their screen instantly. For more information about NetView and its limitations, please refer to the *NetView Installation Manual*.

### *Getting Started Manual*

Please refer to the *EddyVision32™ v6.0 Getting Started* manual for details regarding:

- System Requirements.
- Technical Support.
- Conventions Used in CoreStar User Manuals.
- Installing EddyVISION32 v6.0.
- Installation Notes.
- Connecting the Security Key.
- Updating HASP Keys.
- Troubleshooting HASP Keys.

### *Starting the DBMS Software*

To start the DBMS software, double-click the **DBMS v6.0** icon on the **Desktop**. After the program starts, the main window of the DBMS program shown in Figure 1 will appear. The project that was in use during the last program session will automatically open as shown in Figure 1.

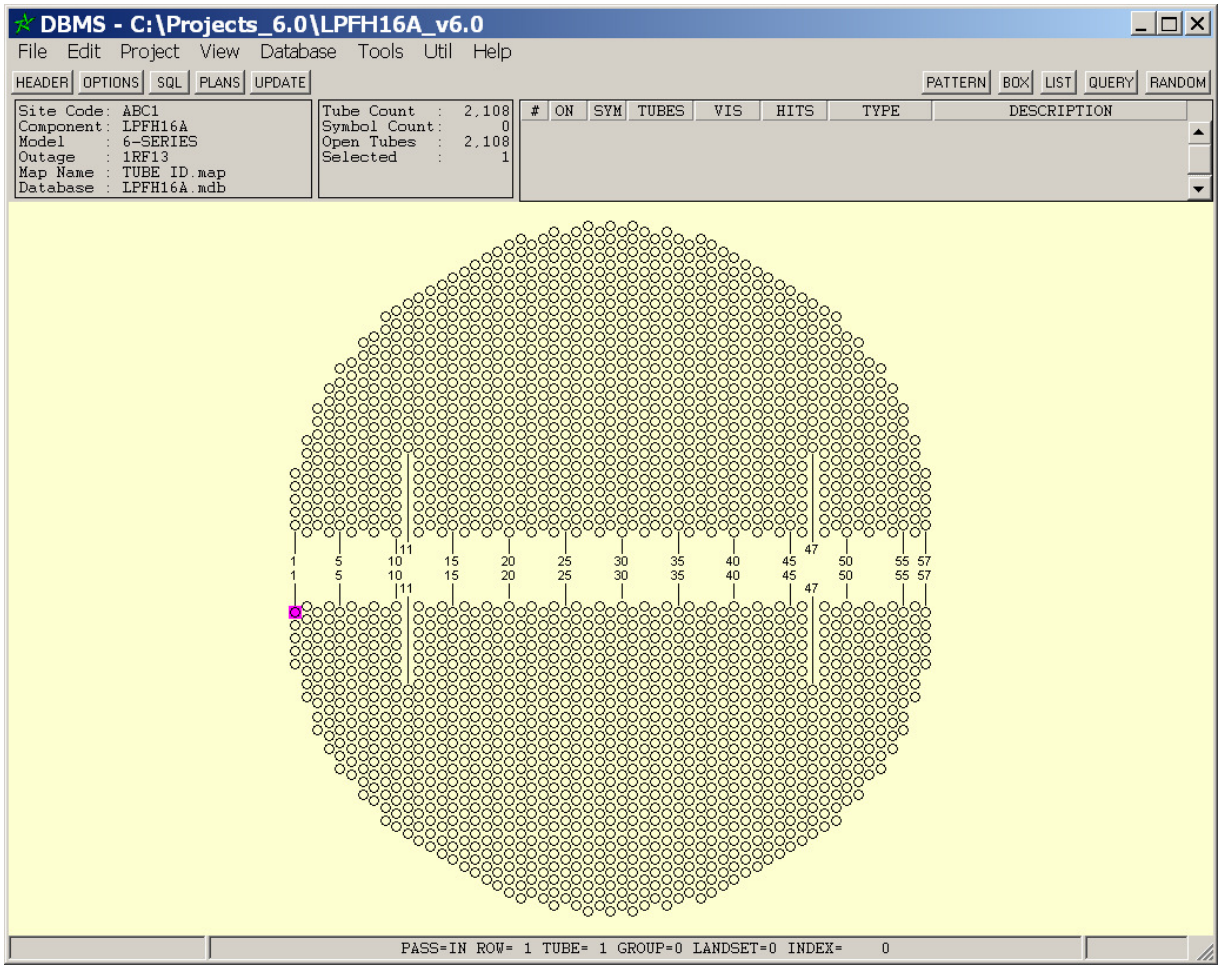


Figure 1. The Main DBMS Window

**NOTE:** If you wish to follow along using the same project as in this manual, copy the directory named ***LPFH16A_v6.0*** from the EddyVision32™ installation CD to your hard drive. Afterwards, open the project in DBMS.

Additionally, if you are using Windows 2000, you will need to remove the read-only attribute from this directory including all sub-directories and files.

### *Main DBMS Window*

All functions of the DBMS software are accessed from the main window shown in Figure 1. Various functions are accessed via pull-down menus along the top left of the window, specialized buttons just below the pull-down menus and on either side, and a popup menu accessed by right-clicking within the working area of the main window.

Figure 2 points out and offers descriptions of the different areas of the main window. Review to the figure in order to familiarize yourself with the main DBMS window.

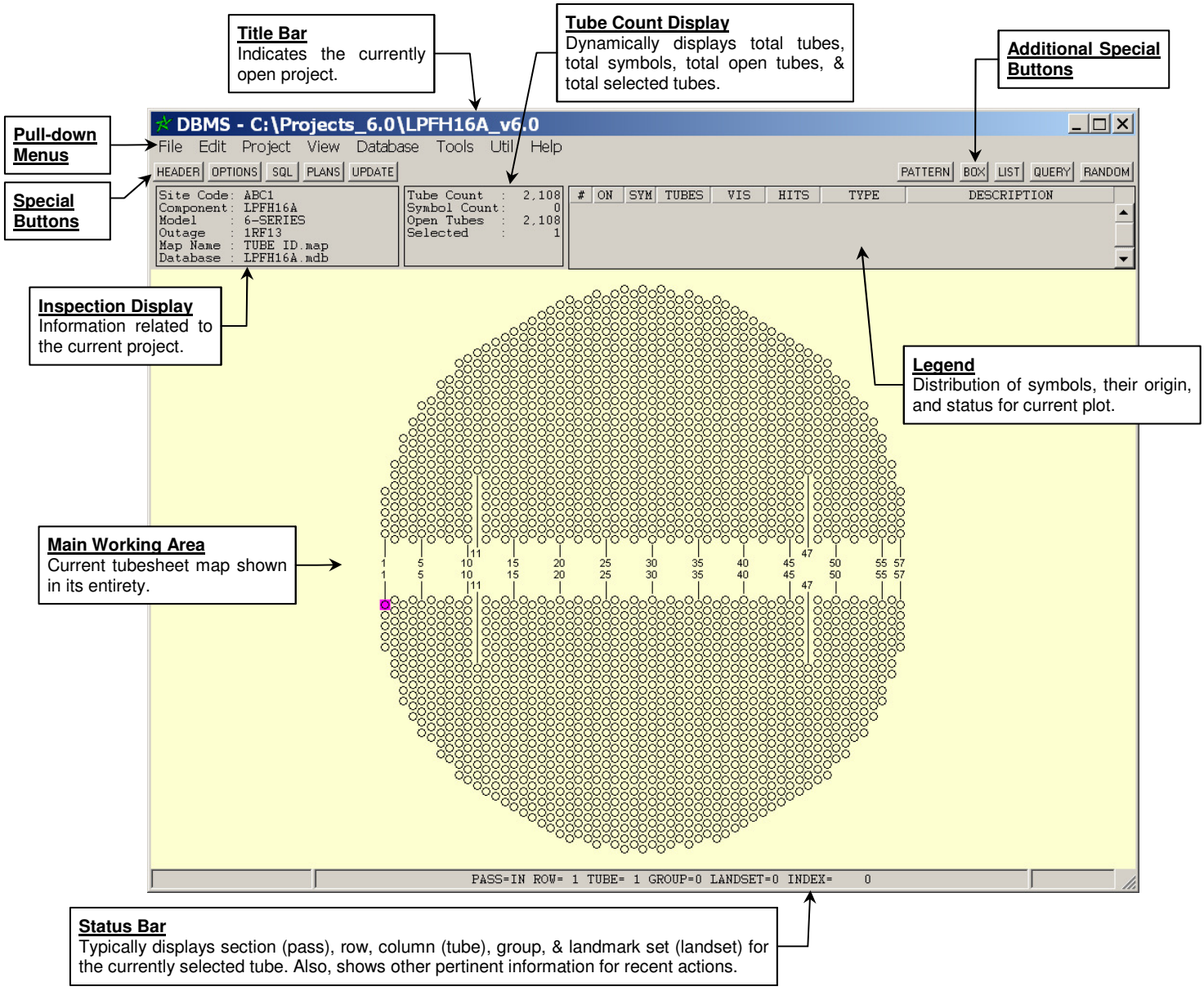


Figure 2. Parts of the Main DBMS Window

### *Menu Bar - Main Window*

#### File Menu

As shown in Figure 3, the **File** menu contains sixteen (16) choices. Each item is discussed below.

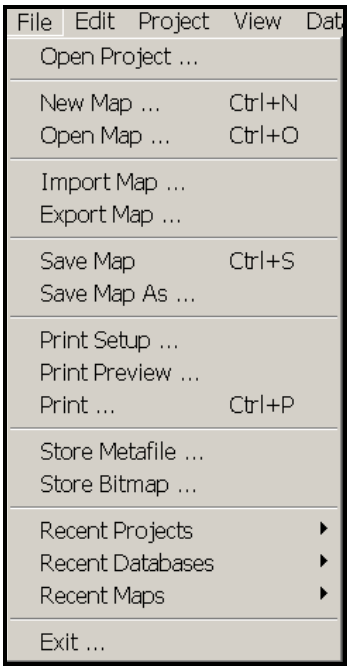


Figure 3. File Menu

- **File | Open Project** displays the **Open Project** dialog shown in Figure 4. Simply select the desired project file from those listed and click the **Open** button. Alternatively, you may simply double-click a file name as with any other Windows program. Afterwards, the program opens the project and displays the tubesheet map (*project.cmp*) in the working area of the main window.

- **File | New Map** (Ctrl+N) clears the **Legend** of all entries, clears the **Map Name** field in the **Inspection Display** area, and resets the **Map Header** dialog to default values for the currently displayed tubesheet plot on the main window.

**TIP:** In DBMS, the term *map* refers to a tubesheet plot complete with the project's *cmp* file, all legend entries, & the *map* header. This plot can be saved as a *map* file and/or printed as a completed document. So, a *map* is the *document* created using DBMS.

Think of it this way, "*doc* files are to Word, what *map* files are to DBMS."

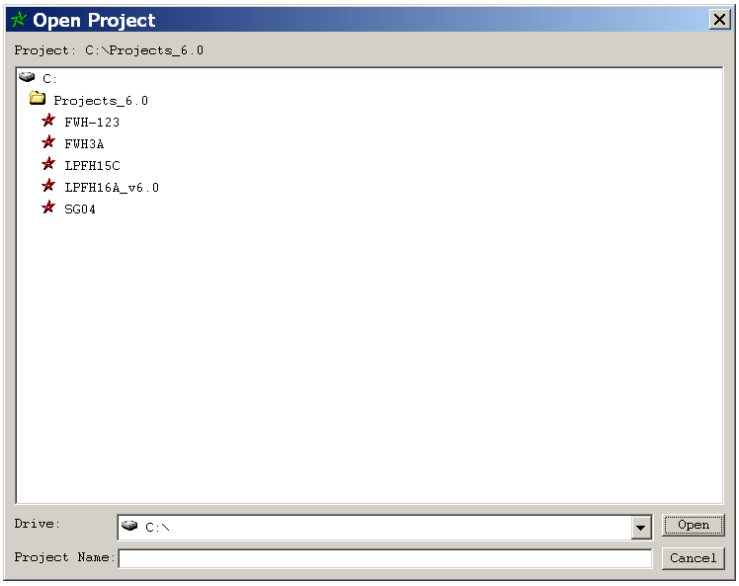


Figure 4. File | Open Project Dialog

- **File | Open Map** (Ctrl+O) displays the **Open** dialog shown in Figure 5. Simply select the desired *map* file from those listed in the ***[project]\maps*** directory and click the **Open** button. Alternatively, you can double-click a file. DBMS loads and displays the selected *map* in the working area of the main window. Information saved with the *map* will fill in the **Legend**, **Inspection Display** area, **Map Header** dialog, and **Tube Count Display**.

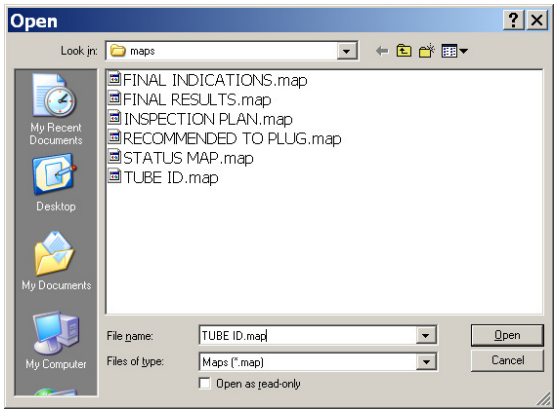


Figure 5. File | Open Map Dialog

| | |
|---|---|
| **TIP:** | You do not need to open a database in order to view and print a *map*; however, to query or update a *map*, you must open a project's database. |

- **File | Import** displays the **Import From User** dialog shown in Figure 6. Simply select the desired *map* file from those listed and click the **Open** button. Alternatively, you may simply double-click a file. The *map* file you select is copied into the ***[project]\maps*** directory. This is handy when you want to use a *map* file between two or more projects. As shown in Figure 6,

  **File | Import Map** defaults to the following location:

  ***[Install_Path]\CoreStar\EddyVision 6.0\user\map_templates***

  Regardless, you may navigate to any drive accessible from your computer in order to import a *map* file.

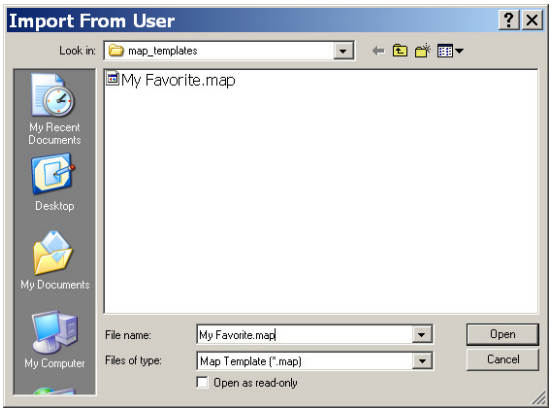


Figure 6. File | Import Map Dialog

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| **IMPORTANT:** | After importing a *map* into a project, you must open the *map* for it to be displayed properly (*see **File | Open Map***). |

- **File | Export Map** displays the **Export To User As** dialog shown in Figure 7. Type the desired name for the *map* file in the **File name:** field. There is no need to add the *.map* extension to the name since the program will add it automatically. The current tubesheet plot (*map*) displayed in DBMS will be exported or *saved* with the filename you choose. This is handy when you want to share a *map* file between two or more projects.

  **File | Export Map** defaults to the following location:

  ***[Install_Path]\CoreStar\EddyVision 6.0\user\map_templates***

  Regardless, you may navigate to any drive accessible from your computer in order to export a *map* file.

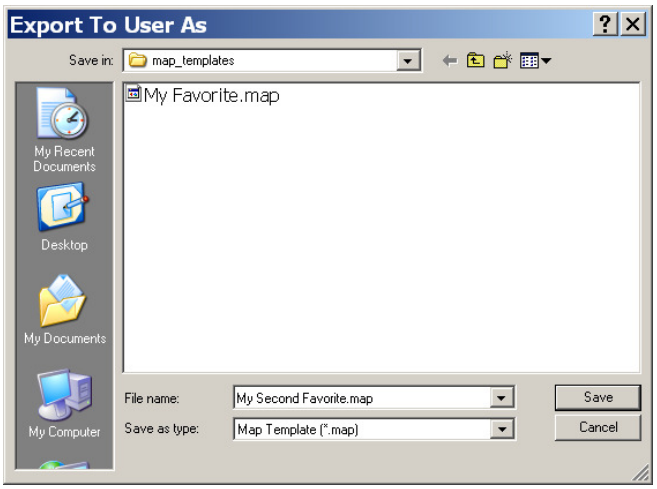


Figure 7. File | Export Map Dialog

- **File | Save Map** (Ctrl+S) automatically saves the currently displayed *map* to the ***[project]\maps*** directory using the same filename. If **File | Save Map** is selected for a *map* that has not been previously saved, a **Save As** dialog like the one shown in Figure 8 is displayed and the instructions below for **File | Save Map As** apply. Once saved, a message in the **Status Bar** is displayed informing the user that the *map* was saved to ***[project]\maps\[map_filename.map]***.

- **File | Save Map As** displays the typical **Save As** dialog shown in Figure 8. Type the desired name for the *map* file in the **File name:** field. There is no need to add the *.map* extension to the name since the program will add it automatically. Once saved, a message in the **Status Bar** is displayed informing the user that the *map* was saved to ***[project]\maps\[map_filename.map]***.

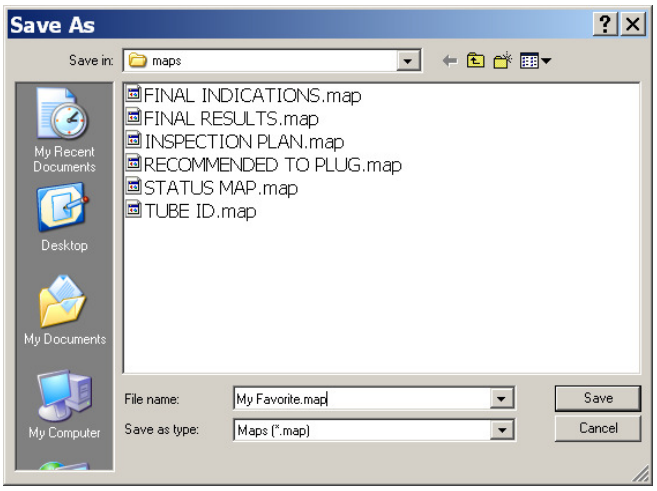


Figure 8. File | Save Map As Dialog

- **File | Print Setup** displays the typical **Print** dialog shown in Figure 9. Select the desired printer and click the **Preferences** button to modify the printer's parameters as desired. Once all options are set, click **Print** for the settings to be saved as the new default **Print Setup**; otherwise, click **Cancel.**

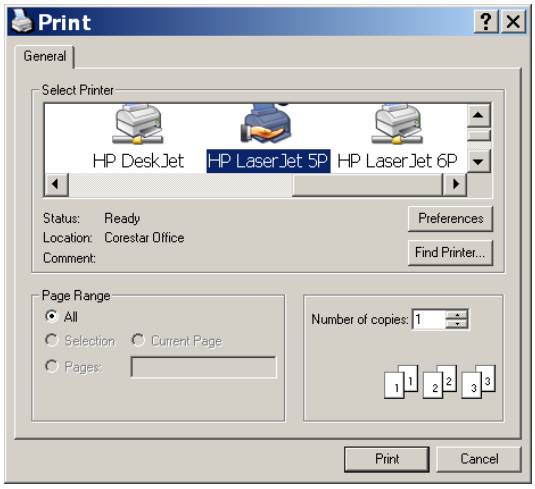


Figure 9. File | Print Setup & Print Dialog

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| **NOTE:** | Even though the dialog in Figure 9 appears to be a typical Windows **Print** dialog, clicking **Print** will not print the current *map* since this dialog was displayed after selecting **File | Print Setup**. In this particular case, the **Print** button functions as an **OK** button. |

- **File | Print Preview** displays a dialog with an approximation of what the *map* will look like when printed based on the default printer settings made using **File | Print Setup**. Clicking either **OK** or **Cancel** on the **Print Preview** dialog simply closes the dialog, while clicking the **Print** button displays a **Print** dialog like the one shown in Figure 9. You may adjust settings if desired; otherwise, click **Print** to send the *map* to the printer.

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| **HINT:** | If the default is a color printer and colored symbols are being used on the current tubesheet *map*, **Print Preview** will display the colors. Conversely, if the default is not a color printer and colored symbols are being used on the current tubesheet *map*, **Print Preview** will display the colors in grayscale. |

- **File | Print** (Ctrl+P) displays the **Print** dialog shown in Figure 9. You may adjust settings if desired; otherwise, click **Print** to send the *map* to the default printer.

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| **TIP:** | To adjust the margins for printed maps, click the **Options** button on the main DBMS window, and then click the **Margins** tab on the **Options** dialog. |

- **File | Store Metafile** allows you to save the current *map* as an enhanced metafile *(emf)*. This allows for easy importing of tubesheet graphics into Windows programs for presentations and reports. A **Save As** dialog will appear defaulting to the ***[project]\temp*** directory. Alternatively, you may navigate to any drive and path accessible from your computer. There is no need to add the *emf* extension to the filename since the program will add it automatically.

| | |
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| **DEFINITION:** | An enhanced metafile *(emf)* is a type of graphics file, used by Windows and other applications, that combines the features of bitmap and vector graphics in one high-resolution graphics format. |

- **File | Store Bitmap** allows you to save the current *map* as a bitmap *(bmp)*. This allows for easy importing of tubesheet graphics into Windows programs for presentations and reports. A **Save As** dialog will appear defaulting to the ***[project]\temp*** directory. Alternatively, you may navigate to any drive and path accessible from your computer. There is no need to add the *bmp* extension to the filename since the program will add it automatically.

| | |
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| **HINT:** | **File | Store Metafile** function creates a much higher quality graphics representation of a tubesheet *map* than **File | Store Bitmap**. Furthermore, the *emf* file size will typically be about one-tenth the file size of a *bmp* file of the same tubesheet *map*. After some experimentation with both choices, you can decide which format best suits your needs. |

- **File | Recent Projects** makes it easy to open a project that was recently opened. By floating the cursor over **File | Recent Projects**, a fly out menu appears listing the most recently opened projects. Simply click one of the listed projects to open that project.

- **File | Recent Databases** makes it easy to open or *connect to* a database that was recently opened in the current project. By floating the cursor over **File | Recent Databases**, a fly out menu appears listing the most recently opened database files in the current project. Simply click one of the listed database files to open or *connect to* that database.

- **File | Recent Maps** makes it easy to open a *map* that was recently opened in the current project. By floating the cursor over **File | Recent Maps**, a fly out menu appears listing the most recently opened *map* files in the current project. Simply click one of the listed *map* files to open that *map*.

| | |
|---|---|
| **NOTE:** | **File | Recent Databases** and **File | Recent Maps** list files specific to the currently opened project. For example, **File | Recent Databases** <u>will not</u> list a database file from a project other than the currently opened project. If it did, this would be contrary to the project-based concept. |

- **File | Exit** simply closes the DBMS software. Clicking the ✕ button in the upper right corner of the main DBMS window performs the same function. If changes have been made to a component of DBMS, i.e., the current *map* header was modified, DBMS will display a message dialog asking if you want to save changes to the *map*. Click **Yes** to save changes, **No** to discard changes, or **Cancel** to close the message box and leave DBMS open.

## Edit Menu

As shown in Figure 10, the **Edit** menu contains seven (7) choices. Each item is discussed below.

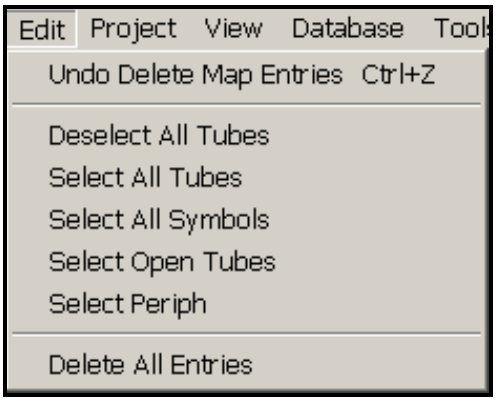



Figure 10. Edit Menu

- **Edit | Undo** (Ctrl+Z) will *undo* the last action performed. Continuing to select **Undo** will continue to *undo* previous actions up to the last 20 actions performed. A description of the next available action to be *undone* is displayed next to **Undo** in the **Edit** menu. For example in Figure 10, the last action was a deletion of an entry(s) on the *map* legend. If no actions are available to be *undone*, then the **Undo** selection will be grayed out.

- **Edit | Deselect All Tubes** simply deselects all tubes on a *map*. This feature is also available on the **Popup menu** discussed later.

**NOTE:** Selected tubes are highlighted with a cursor box of the **Select Color** in the DBMS work area. The **Select Color** is a user-defined setting, which will be discussed later (*see Options Button | Options Tab*). Selecting and deselecting tubes on a *map* is one of the basics to building inspection plans. You will see during the course of this instruction that DBMS offers numerous methods of selecting and deselecting individual tubes, groups, rows, symbols, specific symbols, open tubes, and patterns.

- **Edit | Select All Tubes** selects all tubes on the *map* regardless if there are symbols or not. Selecting all tubes is a quick way to schedule a 100% percent inspection. This feature is also available on the **Popup menu** discussed later.

- **Edit | Select All Symbols** selects all tubes on the *map* that currently have symbols plotted on them. Tubes that do not have symbols on them are considered *open*. This feature is also available on the **Popup menu** discussed later.

- **Edit | Select Open Tubes** serves the opposite purpose as **Edit | Select All Symbols**. All tubes that currently do not have symbols on them are selected, while tubes that have symbols on them are not selected. This feature is also available on the **Popup menu** discussed later.

- **Edit | Select Periph** selects the tubes identified in the *cmp* file as periphery tubes. This is an optional feature of the **MakeComp** software used to create *cmp* files. For more information about identifying tubes as periphery tubes in a *cmp* file, see *EddyVISION32™ MakeComp User Manual*. This feature is also available on the **Popup menu** discussed later.

- **Edit | Delete All Entries** deletes all legend entries and clears all symbols from the current *map*. You should save the current *map* before making this selection since this **is not** an *undoable* function. A **Yes/No** message dialog is displayed before this action is performed.

## Project Menu

As shown in **Figure 11**, the **Project** menu contains only one (1) choice described below.

Figure 11. Project Menu

- **Project | Clear Recent Projects** clears the list on the **Recent Projects** fly out menu for the currently open project. For more information, please see **File | Recent Projects** discussed earlier.

## View Menu

As shown in **Figure 12**, the **View** menu contains four (4) choices, which are discussed in detail below.

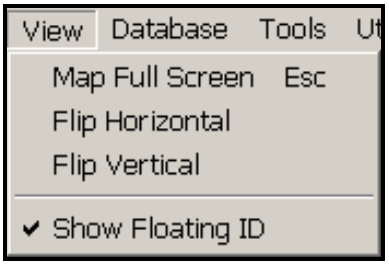



Figure 12. View Menu

- **View | Map Full Screen** (Esc) automatically sizes and centers the currently displayed tubesheet *map* within the working area of the main DBMS window. Many software programs refer to this function as *Fit-to-Screen or Auto-fit*. The mouse shortcut for this function is Ctrl+middle-click.

| | |
|---|---|
| **TIP:** | To **pan** (*or move*) the *map* manually in the main DBMS window, middle-click & drag the *map* to the desired location. |

- **View | Flip Horizontal** automatically *flips* the currently displayed tubesheet *map* horizontally. This function is handy for creating inlet and outlet views of straight-tubed heat exchangers. For example, you build a main condenser waterbox *cmp* file as viewed from the inlet, which will be the inspection reference end. When the time comes to issue plugging maps, customers typically like to have an inlet <u>and</u> outlet view. Once the tubes to be plugged have been plotted and printed for the inlet tubesheet *map*, all the user has to do to produce an outlet tubesheet *map* showing the tubes to be plugged is select **View | Flip Horizontal**. The tubesheet *map* immediately flips and provides an outlet (*mirror*) view of the tubesheet complete with correct section and tube numbers. Now the user only needs to adjust the *map* header to state that this is an outlet view and print.

  Figure 13 shows the tubesheet *map* from Figure 1 after the **View | Flip Horizontal** function has been enabled. Note in the **View** menu of Figure 13 that the **Flip Horizontal** is active as indicated by the small checkmark next to the selection. The horizontal flip is obvious since the lower row numbers now appear on the right side of the tubesheet *map*.

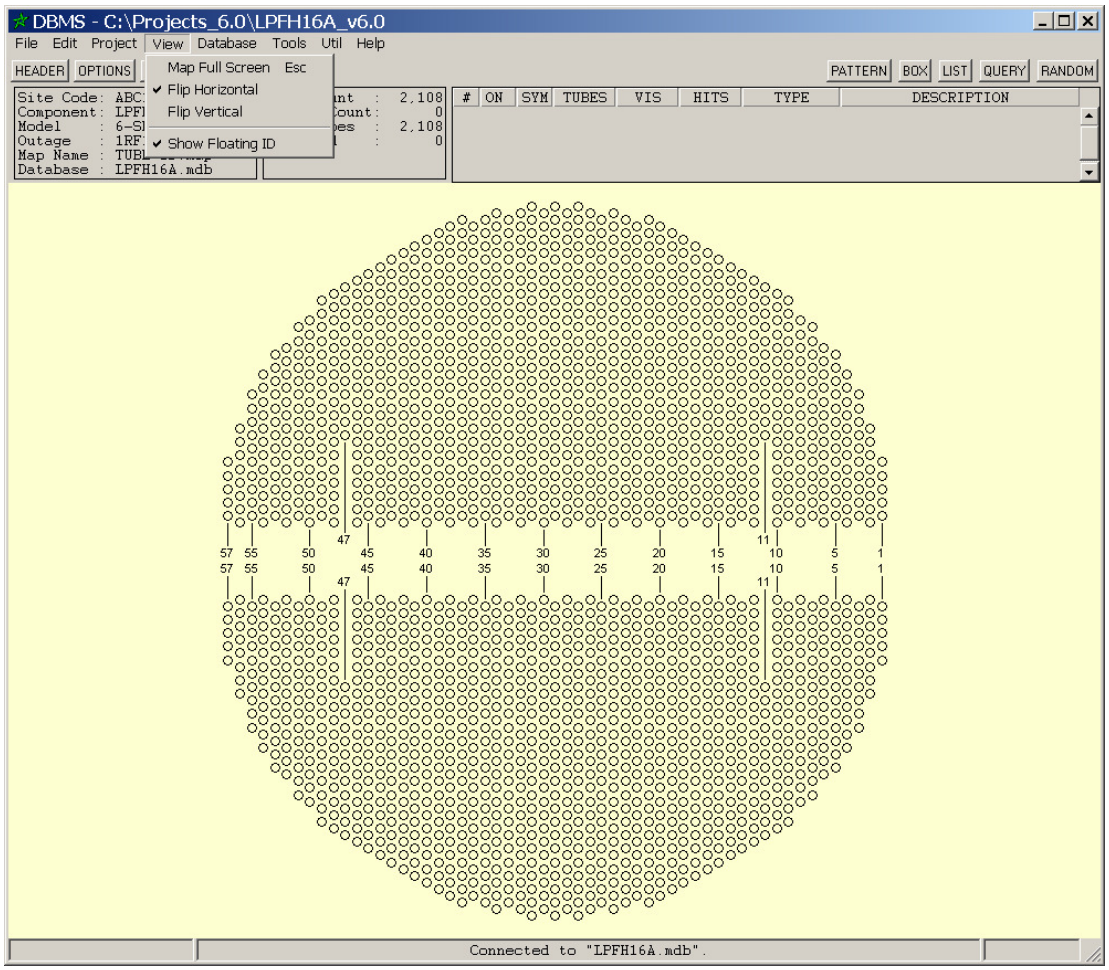



Figure 13. View | Example of Flip Horizontal Function

- **View | Flip Vertical** automatically *flips* the currently displayed tubesheet *map* vertically. This function is handy for creating inlet and outlet views for some heat exchangers. For example, you build a typical U-tubed steam generator tubesheet *cmp* file as viewed from the inlet leg. To view the outlet leg in DBMS, simply select **View | Flip Vertical**. The tubesheet *map* immediately flips from bottom to top and provides an outlet leg view of the tubesheet complete with correct section and tube numbers as applicable.

  Figure 14 shows a pyramid-shaped tubesheet *map*. Figure 15 shows the effect after the **View | Flip Vertical** function has been applied. Note in the **View** menu of Figure 15 that the **Flip Vertical** is active as indicated by the small checkmark next to the selection. The vertical flip is obvious since the row numbers now appear as increasing from top to bottom, plus the tubesheet *map* now appears as an inverted pyramid.

| **TIP:** | Any combination of the horizontal and vertical flip functions may be applied to any *map* file until the desired result is displayed. |
|---|---|

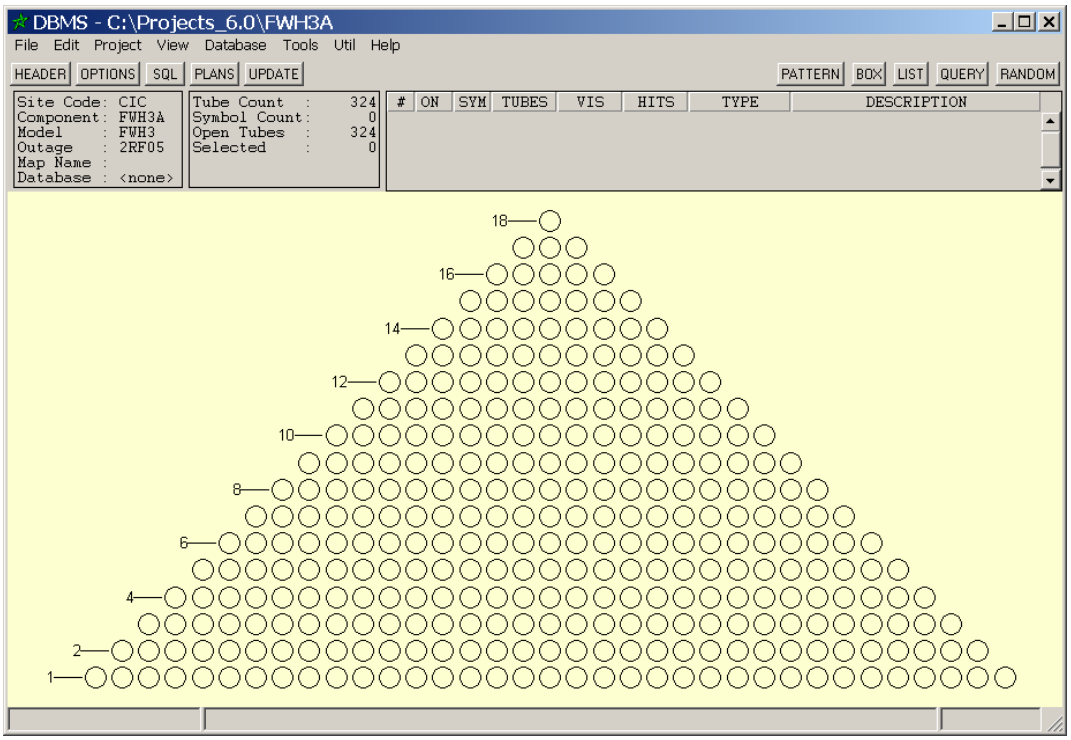



Figure 14. View | Example of the Flip Vertical Function (Before Vertical Flip)

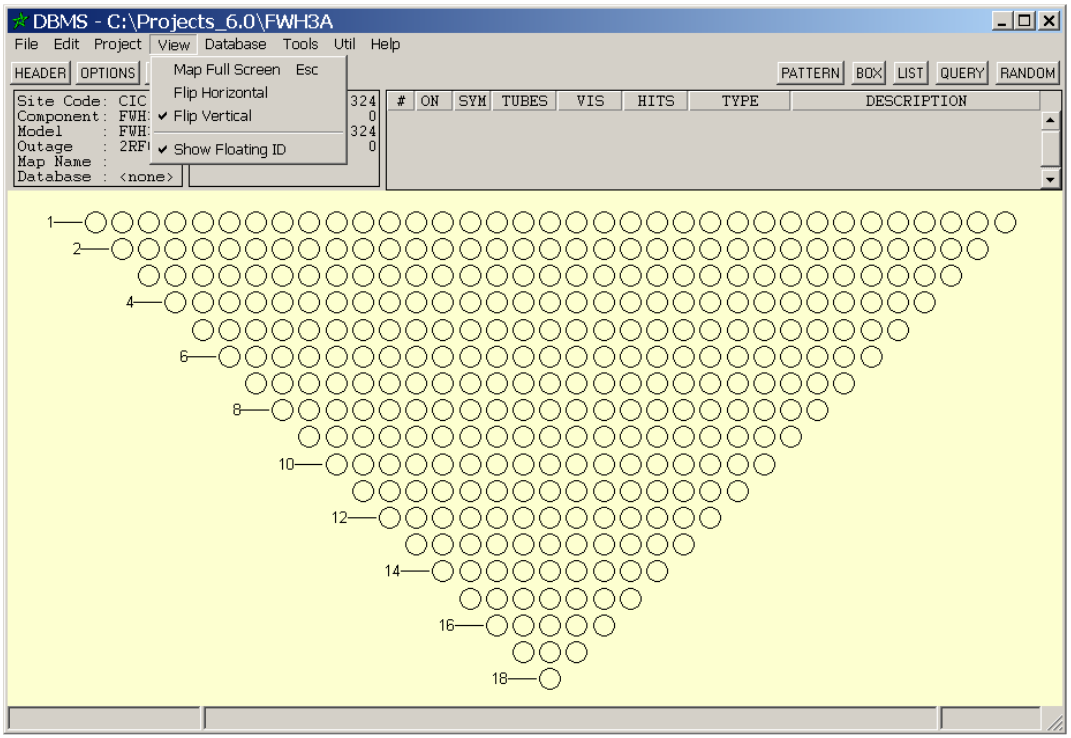



Figure 15. View | Example of the Flip Vertical Function (After Vertical Flip)

## Database Menu

As shown in Figure 16, the **Database** menu contains eight (8) choices, which are discussed in detail below.

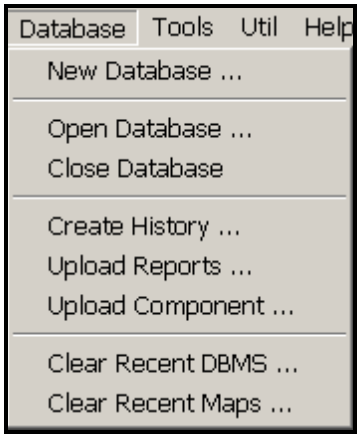



Figure 16. Database Menu

- **Database | New Database** displays a typical **Save As** dialog. Type the desired name for the *mdb* file in the **File name:** field. This filename cannot be the same as an existing database file in the project. There is no need to add the *mdb* extension to the name since the program will add it automatically. The MS Access format (*Access 97, 2000, or 2002*) used by this function is determined by the **DBMS | File Format** selection in **EddyAdmin** for a given project. Please see the *EddyVISION32™ v6.0 EddyAdmin User Manual* for more information about this setting. The default directory for database files is ***[project]\dbms***.

- **Database | Open Database** displays an **Open** dialog. Select the desired *mdb* file from those listed in the ***[project]\dbms*** directory, and then click the **Open** button or simply double-click the filename. Afterwards, the program opens or *connects to* the selected database file, which is displayed in the **Database** field of the **Inspection Display** area of the main DBMS window (*see Figure 2*).

- **Database | Close Database** closes or *disconnects from* the current database. Afterwards, the filename of the database will disappear from the **Database** field of the **Inspection Display** area of the main DBMS window (*see Figure 2*). You do not need to close or *disconnect from* one database to open of *connect to* another. All you have to do is select the other database from either **Database | Open Database** or **File | Recent Databases**.

| | |
|---|---|
| **NOTE:** | In each project, there is normally only <u>one</u> database file. Eddy current inspection results are typically added to a project's database file each outage in order to build a cumulative database of multiple outages. This makes historical comparisons and trending easier to accomplish. |

- **Database | Create History** displays the **History** dialog shown in Figure 17 (*only the upper half of the History dialog is shown in order to conserve space*). During data analysis, history files are very useful in determining if previous eddy current calls have changed. **DBMS** allows you to create a custom **History** file from previous inspection report entries that reside in a given project's database. The **History** file can then be conveniently referenced manually by the analyst or automatically by the analysis software.

**TIP:** Even if **EddyVision** is not used for analysis, the **History** file can be created, printed, and then used as a handy reference during analysis.

Each item on the menu bar of the **History** dialog is discussed below. Afterwards, the remaining components of the dialog will be discussed.

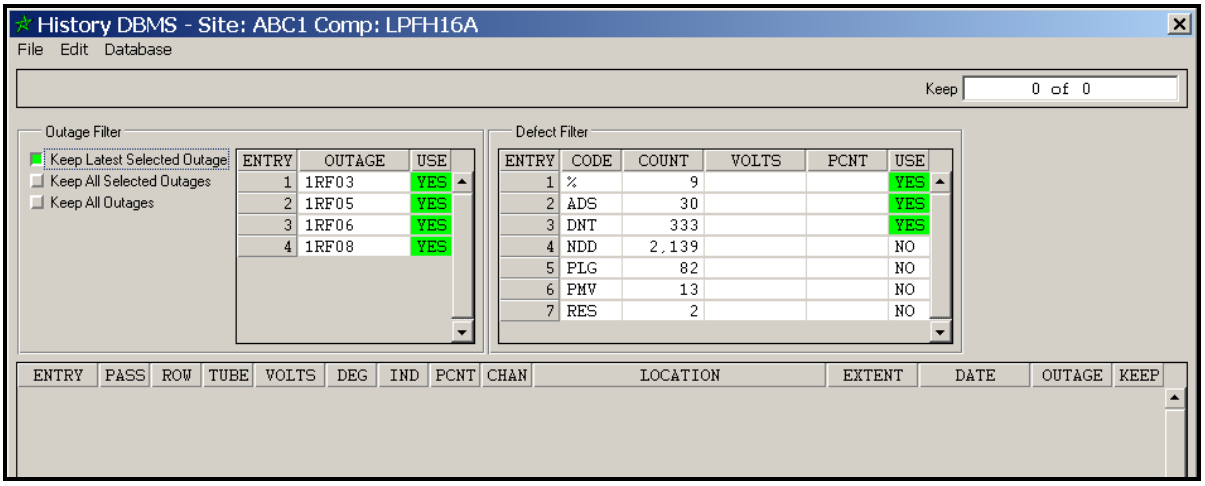



Figure 17. Database | Create History Dialog

History Dialog

***FILE MENU***

In Figure 18 , the **File** menu on the **History** dialog has five (5) choices, which are discussed below.

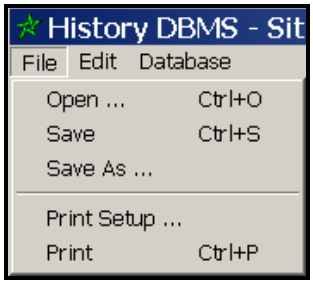



Figure 18. Database | Create History Dialog | File Menu

- **File | Open** (Ctrl+O) displays an **Open** dialog from which an existing *hst* (*history*) file can be opened to view and/or edit. The default path for **DBMS** history files is ***[project]\history\CoreStar***.

- **File | Save** (Ctrl+S) automatically saves the current history file with the same filename to the ***[project]\history\CoreStar*** directory. If **File | Save** is selected for a history file that has not been previously saved, a **Save As** dialog is displayed and the instructions below for **File | Save As** apply.

- **File | Save As** displays a **Save As** dialog. Type the desired name for the *hst* file in the **File name:** field. There is no need to add the *hst* extension to the name since the program will add it automatically. Click **Save** on the **Save As** dialog to store the history file to the ***[project]\history\CoreStar*** directory.

- **File | Print Setup** displays a typical **Print** dialog (*Figure 9*). Select the desired printer and click the **Preferences** button to modify the printer's parameters as desired. Once all options are set, click **Print** for the settings to be saved as the new default **Print Setup** for printing from the **History** dialog; otherwise, click **Cancel.**

- **File | Print** (Ctrl+P) immediately prints the contents of the **History** dialog to the default printer that is selected using **File | Print Setup** above.

***EDIT MENU***

In Figure 19 , the **Edit** menu on the **History** dialog has only one (1) choice discussed below.

Figure 19. Database | Create History Dialog | Edit Menu

- **Edit | Clear History** displays the warning message shown in Figure 20. Click **Yes** to clear the contents of the **History** dialog or **No** to cancel. This function **<u>does not</u>** delete any entries from the database, but rather entries in the **History** dialog. It's handy for starting over when creating a history file.

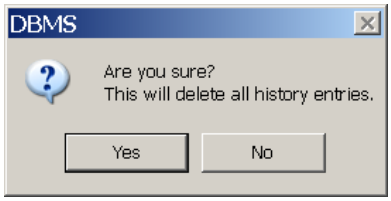



Figure 20. Database | Create History Dialog | Edit Menu | Clear History Message Box

***DATABASE MENU***

In Figure 21 , the **Database** menu on the **History** dialog has only one (1) choice discussed below.

Figure 21. Database | Create History Dialog | Database Menu

- **Database | Fetch History** retrieves all inspection records from the *report* table of the currently opened database and displays them in the lower portion of the **History** dialog as shown in Figure 22.

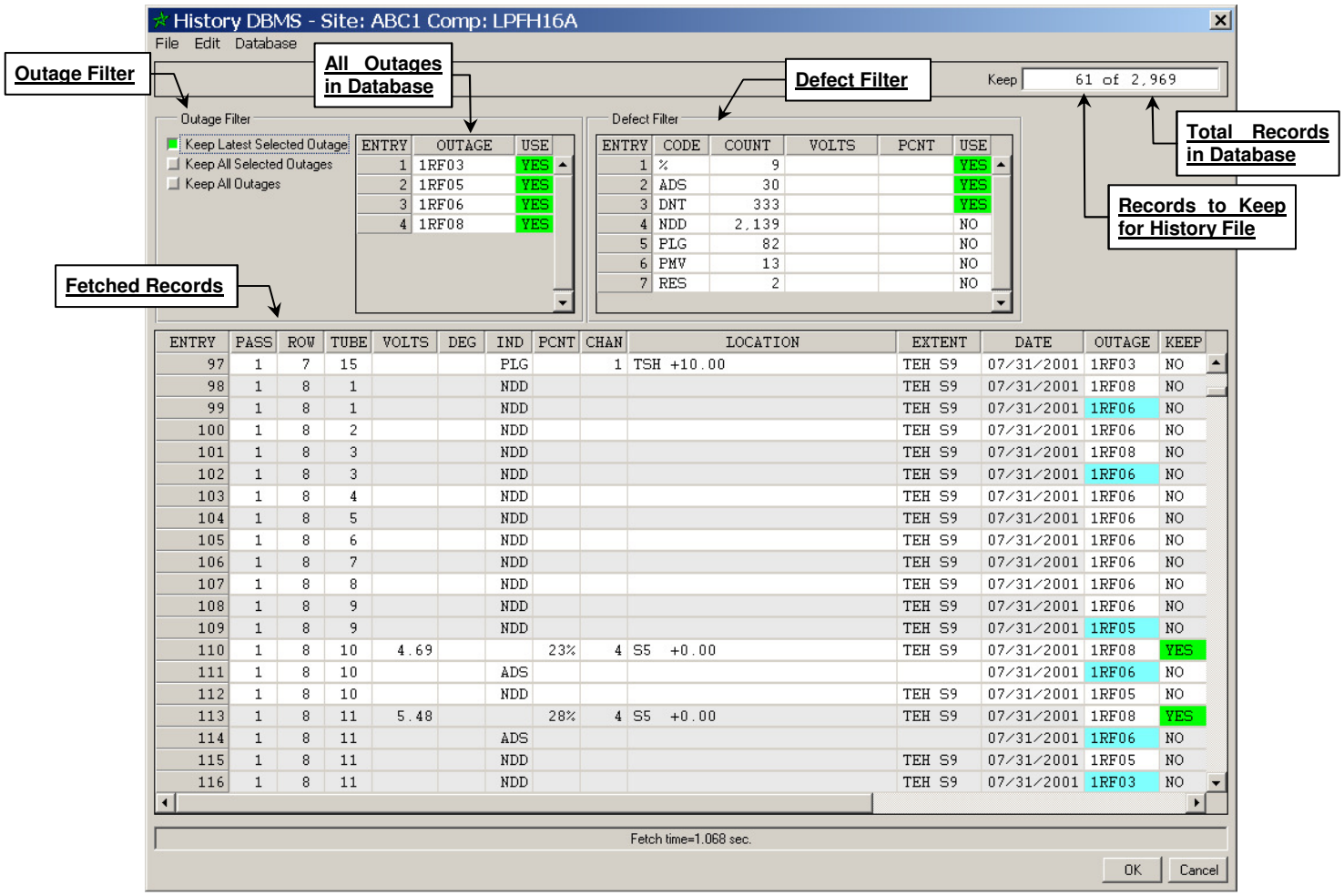



Figure 22. Database | Create History Dialog | Database | Fetch History

***OUTAGE FILTER***

In Figure 22 , the **Outage Filter** section on the **History** dialog is comprised of three (3) buttons and a listing of all the outages that exist in the currently opened database. In the example shown in Figure 22 , there are four (4) outages displayed; therefore, a **History** file can be created using all or some of the inspection records from the displayed outages. In Figure 22, all the outages will be used as indicated by the **YES** beside each outage in the **USE** column. To toggle the state of a **YES/NO** field in any **USE** column on this dialog, simply click in the field. To toggle the state of all the **YES/NO** fields at once in any **USE** column, click **USE**. The records selected for the **History** file will depend not only on the outages that are enabled, but which records within those outages. The enabled outages are further filtered based on the three (3) buttons within the **Outage Filter** section. Each button function is described below.

- **Keep Latest Selected Outage** *keeps* inspection records for the most recent inspection of each tube. For example in Figure 22, note the three (3) records in the **History** dialog for tube number 1-8-10. Only the record for outage *1RF08* will be retained for use in the **History** file since the other two (2) records are for earlier outages. This record will be *kept* for the **History** file as indicated by **YES** in the **KEEP** column for this outage.

- **Keep All Selected Outages** *keeps* all inspection records for all selected outages. For example in Figure 23, note that the records in the **History** dialog for tube number 1-8-10 have changed to two (2) records being *kept* vs. one (1) as in Figure 22. Note that the *NDD* record for this tube is not *kept* because *NDD* is set to **NO** in the **Defect Filter**. The **Defect Filter** is discussed after this topic.

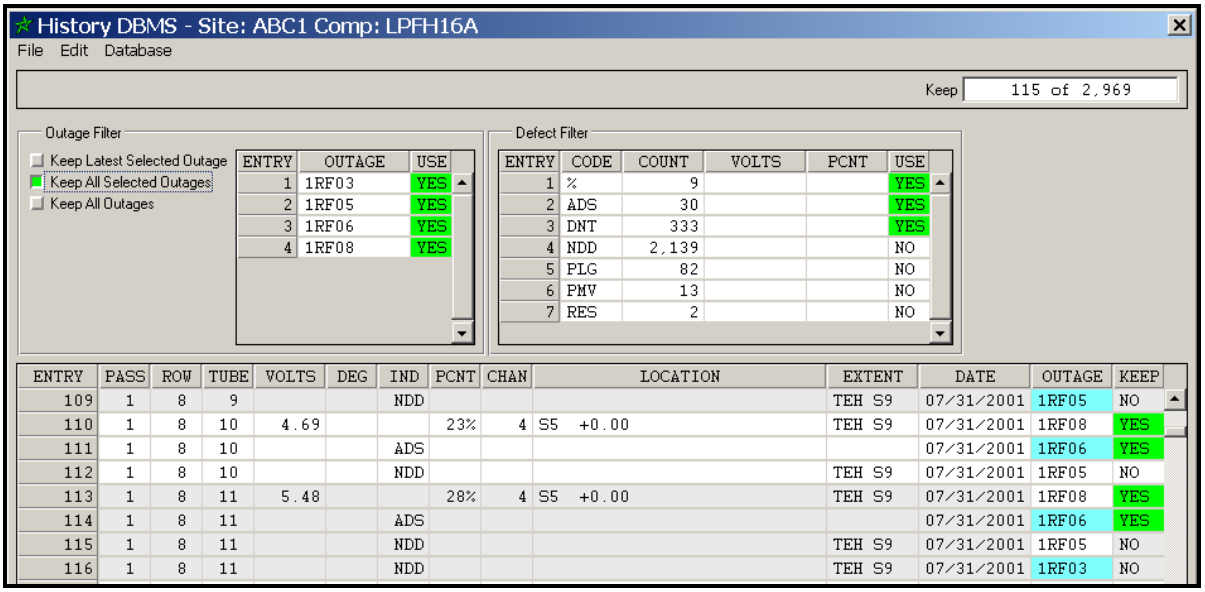



Figure 23. Database | Create History Dialog | Keep All Selected Outages

- **Keep All Outages** simply *keeps* all inspection records for all listed outages regardless of the **USE** column setting within the **Outage Filter** section.

**NOTE:** The **Outage Filter** settings work together with the **Defect Filter** settings to determine which specific records from the *kept* outage(s) will make up a **History** file. After some experimentation with the **History** dialog, you will see the flexibility of making **History** files.

***DEFECT FILTER***

In Figure 22 , the **Defect Filter** section on the **History** dialog is comprised of a listing of all the indication or *defect* codes that exist in the currently opened database. In the example shown in Figure 22 , there are seven (7) defect codes displayed; therefore, a **History** file can be created using all or some of the inspection records from the *kept* outages AND the enabled defect codes. In Figure 22, the first three (3) defect codes will be *kept* as indicated by the **YES** beside each defect code in the **USE** column. To toggle the state of a **YES/NO** field in any **USE** column on this dialog, simply click in the field. To toggle the state of all the **YES/NO** fields at once in any **USE** column, click **USE**. In Figure 22 , only *percent (%), ADS,* and *DNT* defect codes or *calls* from the latest selected outage in the **Outage Filter** section will be included in the **History** file. The **Keep** field in the upper right of the **History** dialog dynamically updates as any of the settings on the dialog are changed. The **Keep** field continually shows the number of records being *kept* based on the overall settings on the **History** dialog. The **Keep** field also displays the total number of inspection records in the currently opened database. In Figure 22 , the **Keep** field indicates that sixty-one (61) of the 2,969 available inspection records in the currently opened database will be included in the **History** file. The purpose of each column in the **Defect Filter** section is discussed below.

- **CODE** displays all the defect codes for which inspection records exist in the *report* table of the currently opened database.

- **COUNT** displays the total number of each defect code for which inspection records exist in the *report* table of the currently opened database. For example in Figure 22 , the current database contains a total of 333 dent (*DNT*) calls.

- **VOLTS** may be used to further filter selected defect codes. Simply click in the **VOLTS** field for a defect code and set the desired voltage threshold. In Figure 24, a voltage threshold of ≥ *5.00* has been entered for the *DNT* defect code. Observe that only one (1) of the *DNT* calls for tube number 1-42-5 will be *kept* for the **History** file, while the remaining two (2) *DNT* calls will not be kept because they don't meet the voltage criteria. The number of records being kept has also changed compared to Figure 22 from sixty-one (61) to thirty-four (34).

- **PCNT** may be used to further filter selected defect codes. Simply click in the **PCNT** field for a defect code and set the desired percent wall loss threshold. In Figure 24, a percent threshold of ≥ *15%* has been entered for the % defect code. Only the percent calls that meet the **PCNT** criteria AND the **Outage Filter** criteria will be *kept* for inclusion in the **History** file. All percent calls < *15%* will be excluded from the **History** file.

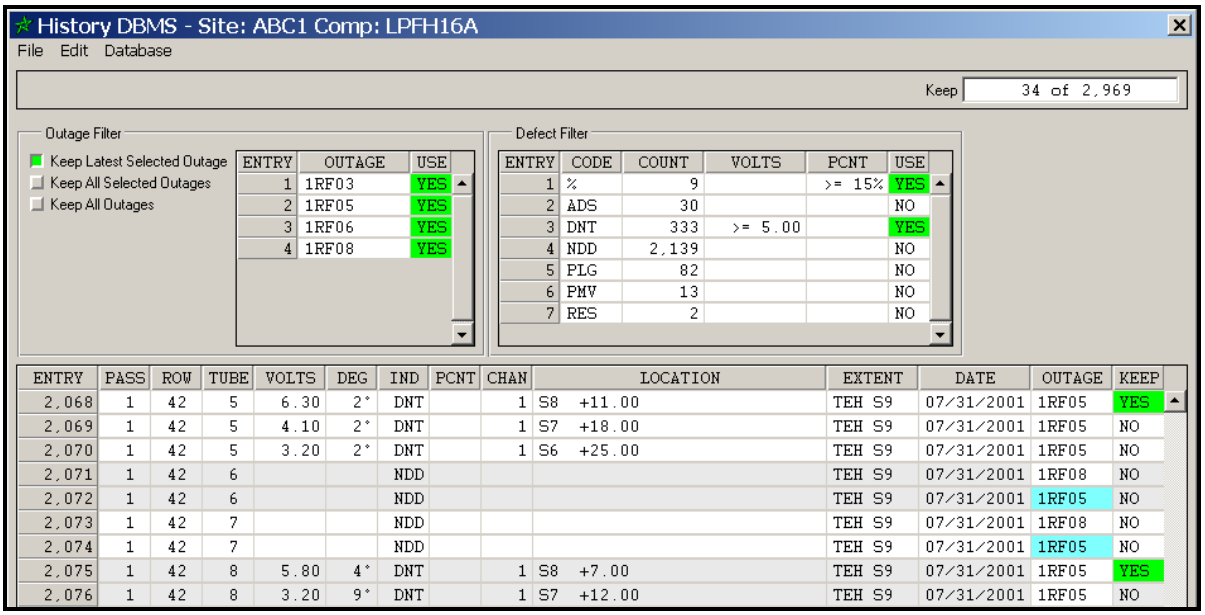



Figure 24. Database | Create History Dialog | Outage Filter

The creation of a **History** file is included later in this manual as part of the **Tutorial**.

**TIPS:**

- The first action on the **History** dialog when starting a new **History** file should be **Database | Fetch History**.
- Any **History** file may be *tweaked* at anytime during an inspection. Just be sure to copy the *tweaked* **History** file to all EddyVISION32 workstations for the specific project.
- What you include or exclude in a **History** is up to you.
- You can make multiple history files if desired. One for bobbin calls last outage, another for RPC calls, etc. Just give them different filenames.
- Including *NDD* calls in a **History** file is a good idea because it gives an analyst a quick reference to determine damage calls that may be new.

- **Database | Upload Reports** displays the **Import Report** dialog shown in Figure 25. This is one of the most important functions of DBMS, which is, uploading eddy current analysis reports into the database. DBMS v6.0 uploads only CoreStar-format analysis reports. Previous versions of EddyVision contained several other non-CoreStar report formats; however, maintaining the software code to import these *foreign* report formats became cumbersome and expensive. EddyVision v6.0 has addressed this issue by incorporating a report converter, which allows a user to design a report conversion specification he can use to convert a *foreign* text report into CoreStar-format so that the report can then be uploaded into the database. The report converter is discussed later under the *Util | Convert Reports* topic. Quality checks made by DBMS occur in the background during report uploads to indicate to the user problems that may exist in a given report. It is extremely important for database use and proper operation that data be entered into each field of a table in a database in an ordered predicable manner. For example, numbers, not text, can only reside in number formatted database fields. In addition, certain database fields require entries, while other fields do not. These quality checks may produce warning messages during report uploads to alert the user that something's not quite right with the report or that the report's missing a required piece(s) of information.

  Each item on the menu bar of the **Import Report** dialog is discussed below. Afterwards, the remaining components of the dialog will be discussed.

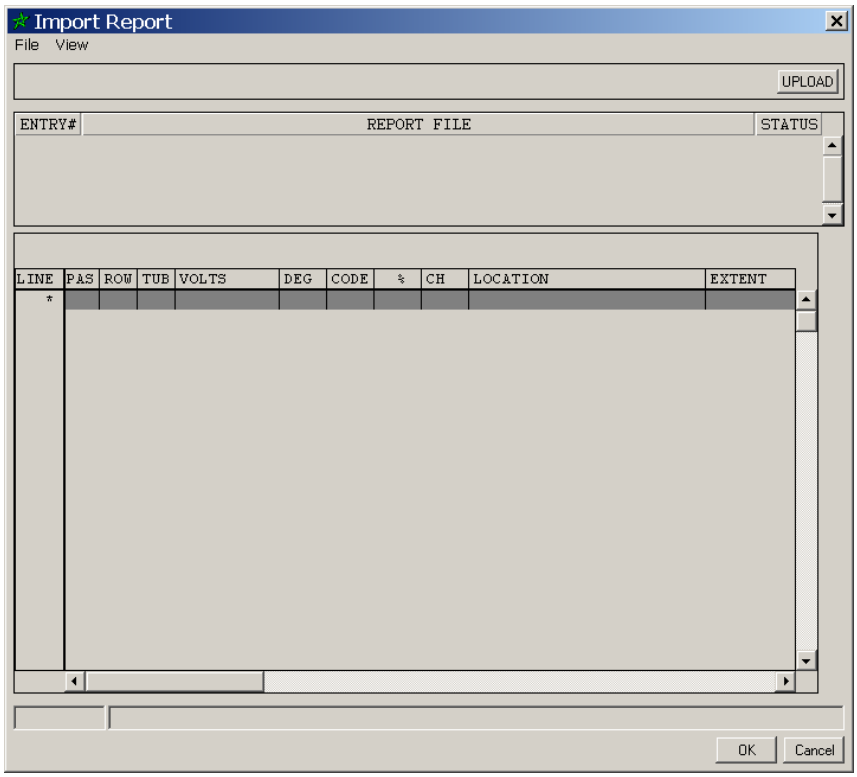



Figure 25. Database | Upload Reports | Import Report Dialog

Import Report Dialog

***FILE MENU***

In Figure 26 , the **File** menu on the **Import Report** dialog has two (2) choices, which are discussed below.

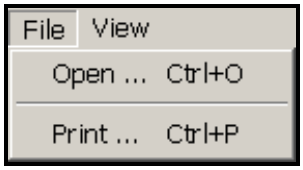



Figure 26. Database | Upload Reports | Import Report Dialog | File Menu

- **File | Open** (Ctrl+O) displays an **Open** dialog from which an existing *rep* (*Corestar-format report*) file can be opened in the **Import Report** dialog to view and/or upload. The default path for report files is ***[project]\reports***; however, you may navigate to any drive and path accessible from your PC to locate a report file for uploading.

- **File | Print** (Ctrl+P) displays a typical **Print** dialog (*Figure 9*). Select the desired printer. Click the **Preferences** button to modify the printer's parameters as desired. Once all options are set, click **Print** to send the contents of the **Import Report** dialog (*the currently displayed report*) to the printer; otherwise, click **Cancel.**

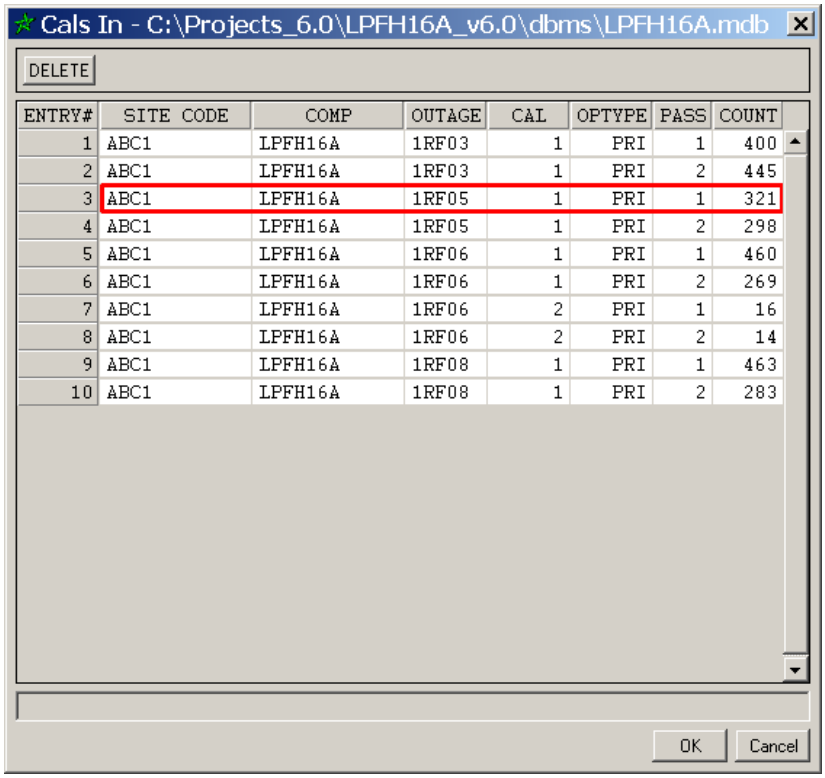
***VIEW MENU***

In **Figure 27** , the **View** menu on the **Import Report** dialog has only one (1) choice, which is discussed below.

Figure 27. Database | Upload Reports | Import Report Dialog | View Menu

- **View | All Database Cals** displays the **Cals In** dialog shown in Figure 28. This dialog allows the user to view all the cal groups that have been uploaded to the *report* table of the currently opened database and/or permanently delete selected cal groups. The columns on this dialog are self-explanatory. For example, the highlighted row (*Entry# 3*) shown in Figure 28 indicates:

  1) there are 321 report entries (*or records*) in the *report* table of the database,
  2) that were analyzed by the *Primary* analyst,
  3) all of which are part of *Cal* group number *1* in *Pass* (*or section*) number *1*,
  4) of *Comp* (*or component*) *LPFH16A* located at the *ABC1 site* (*or plant*), and
  5) inspected during *Outage 1RF05*.




| ENTRY# | SITE CODE | COMP | OUTAGE | CAL | OPTYPE | PASS | COUNT |
|---|---|---|---|---|---|---|---|
| 1 | ABC1 | LPFH16A | 1RF03 | 1 | PRI | 1 | 400 |
| 2 | ABC1 | LPFH16A | 1RF03 | 1 | PRI | 2 | 445 |
| 3 | ABC1 | LPFH16A | 1RF05 | 1 | PRI | 1 | 321 |
| 4 | ABC1 | LPFH16A | 1RF05 | 1 | PRI | 2 | 298 |
| 5 | ABC1 | LPFH16A | 1RF06 | 1 | PRI | 1 | 460 |
| 6 | ABC1 | LPFH16A | 1RF06 | 1 | PRI | 2 | 269 |
| 7 | ABC1 | LPFH16A | 1RF06 | 2 | PRI | 1 | 16 |
| 8 | ABC1 | LPFH16A | 1RF06 | 2 | PRI | 2 | 14 |
| 9 | ABC1 | LPFH16A | 1RF08 | 1 | PRI | 1 | 463 |
| 10 | ABC1 | LPFH16A | 1RF08 | 1 | PRI | 2 | 283 |

Figure 28. Database | Upload Reports | Import Report Dialog | View Menu | All Database Cals | Cals In Dialog

To delete a cal group from those listed in the **Cals In** dialog, click on the entry to highlight it as shown in Figure 28, then click the **Delete** button in the upper left of the dialog. DBMS will display a **Yes/No** message asking if you want to delete the selected cal group. Click **Yes** to delete the selected cal group; else, click **No**. Repeat this step for additional cal groups you wish to delete.

If you delete one or more cal groups, clicking **OK** on the **Cals In** dialog will immediately make all deletions permanent , while clicking **Cancel** on the **Cals In** dialog will display a **Yes/No/Cancel** message asking if you want to save changes (*deletions*). Click **Yes** to make all deletions permanent, click **No** to *undo* all cal group deletions, or click **Cancel** to clear the message from the screen and leave the **Cals In** dialog open pending a final decision by the user.

**WARNING!** It is **strongly recommended** that you **BACKUP** the applicable database **BEFORE** deleting any cal groups using the **Cals In** dialog. You will need to close *or disconnect from* the database in order make a backup copy using Windows Explorer. Once the backup is made, simply re-open the database and continue.

***USING THE IMPORT REPORT DIALOG***

In Figure 29, three (3) typical analysis reports (*CoreStar-format*) have been opened using **File | Open** (*discussed earlier*) on the menu bar of the **Import Report** dialog. As shown, you may open more than one (1) report at a time. In the **Open** dialog, displayed after selecting **File | Open** on the menu bar of the **Import Report** dialog, simply select additional report files by holding down either the **Control** or **Shift** keys on the keyboard while clicking the desired report files. For example in Figure 29, the first three (3) report files were selected as indicated in the upper portion of the **Import Report** dialog. Under the **Report File** column header, each report file is shown along with the complete path. To display the contents of a report shown in the **Report File** list, simply click on a report entry. The contents of the selected report file will be immediately displayed in the lower portion of the **Import Report** dialog.

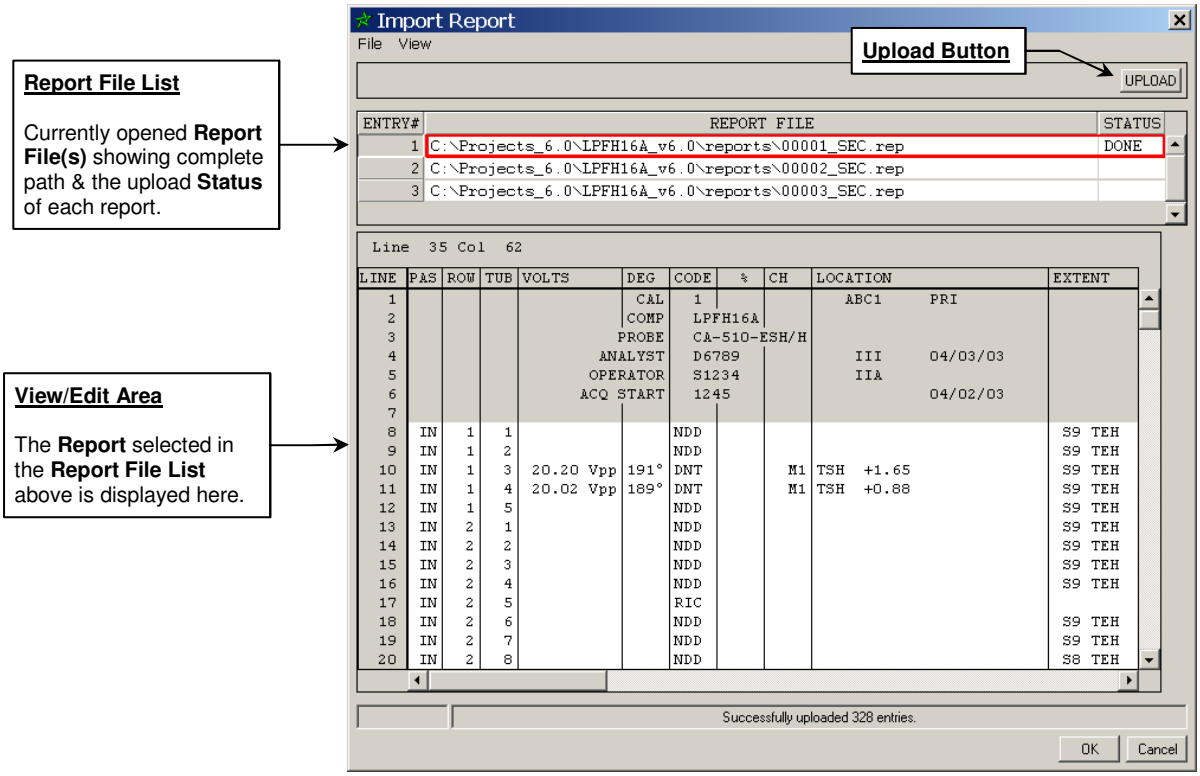



Figure 29. Database | Upload Reports | Import Report Dialog with a Report Opened

To upload a selected report to the currently opened database, click the **Upload** button in the upper right of the **Import Report** dialog. As shown in Figure 29, the first report file has been uploaded as indicated by 1) **Done** displayed in the **Status** column beside the first report file, and 2) a *Successfully uploaded xxx entries* message is displayed in the **Status Bar** at the bottom of the dialog.

**TIP:** Before uploading, reports should be carefully reviewed by the database administrator to ensure their accuracy and completeness. Inaccurate, incomplete, or questionable report entries should be brought to the attention of the responsible analyst for correction before uploading.

During a typical inspection, the analysis reports will become available as they are completed by the analyst(s). Report files are normally stored in each specific cal group directory where the eddy current data resides and was analyzed from; therefore, reports will be opened in the **Import Report** dialog and uploaded one at a time.
If the report you are trying to upload already exists in the database, a **Yes/No/Cancel** message box similar to the one in Figure 30 will be displayed.

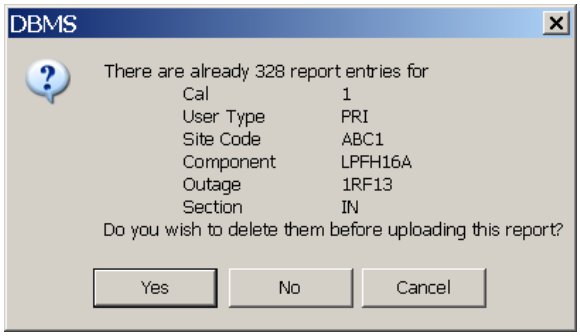



Figure 30. Database | Upload Reports | Import Report Dialog | Message Dialog When Re-uploading a Report

The message box in Figure 30 provides information about the existing report entries in the database and asks if you would like to delete the entries before loading the new report. Answering **Yes** in this example will delete the existing *328* entries for *primary cal 1* of section *IN* of *outage 1RF13* before loading the new *primary cal 1*. **Cancel** will abort the upload process leaving the database as it is, while **No** will load the new *primary cal 1* without deleting the existing entries, therefore, creating duplicate entries for *primary cal 1* in the database.

It is common to re-upload reports from time to time during an inspection. Typical reasons for re-uploading reports are that an analyst did not analyze all the tubes in a cal group(s), the report was not edited correctly by the analyst, or the analyst did not store his final edited report to the cal group. Even though the database administrator has the same editing tools in the **Import Report** dialog as the analyst has in the **Analysis** software, edits by the database administrator should be restricted since the edits performed by the database administrator in the **Import Report** dialog cannot be saved back to the original report file and, in many cases, the database administrator may not be a certified eddy current analyst. Regardless, the editing tools available in the **Import Report** dialog will be discussed shortly.

Attempting to upload a report that has entries with tube identification numbers that do not exist in the *cmp* file of the project will cause a warning message similar to the one shown in Figure 31 to appear. Click **Yes** to continue uploading the valid report entries, while not uploading the invalid entries. A new warning message will appear for each invalid entry. Click **No** to abort the upload process.

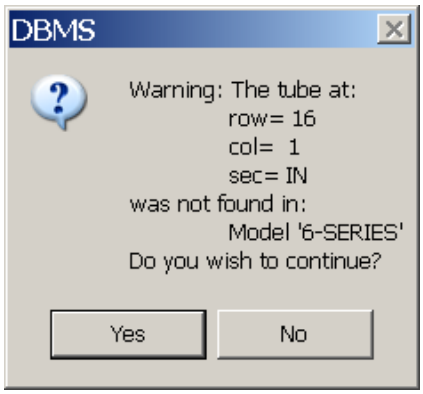



Figure 31. Database | Upload Reports | Import Report Dialog | Warning Message during Report Upload for Non-existent Tubes

The **View/Edit Area** in Figure 29 is the large area in the center of the **Import Report** dialog. The report selected in the **Report File List** in the upper portion of this dialog is displayed in this area. Lines in the report with a gray background will not be uploaded into the database. For example in Figure 29, lines 1 through 7, which make up an embedded report header, are grayed-out and will not be uploaded.

You can toggle the state any report line manually by double-clicking on the line number at the far left in the **Line** column. To insert a line into the report first click on the line below where you want the new line then press the **Insert** key on the keyboard. To delete a line(s), click & drag across the report line(s) you wish to delete to highlight it, and press the **Delete** key on the keyboard. If you make a mistake, click on the report line in the **Report File List** to bring back the original report into the **View/Edit Area**.

**TIP:** All edits done to any report loaded in the **Import Report** dialog are only temporary since there is no way to save the modified report file, which, from a quality assurance stand-point, would not be an appropriate action. Any edits done by the DBMS administrator should be kept to a minimum and only with the approval of the job lead. The best way to correct a report is to have the analyst that analyzed the data edit and resave his/her report to the cal group directory.

If you need to make a global edit to a report column(s), there are two (2) editing tools that can help. The **Global Change** dialog shown in Figure 32 or the **Report Update** dialog shown in Figure 33.

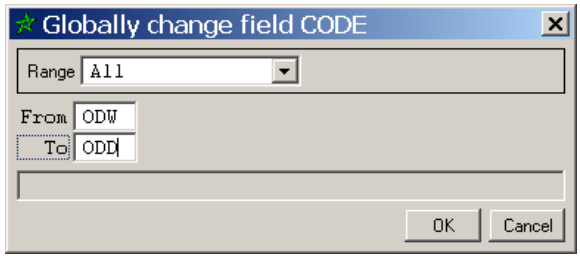



Figure 32. Database | Upload Reports | Import Report Dialog | Global Change Dialog

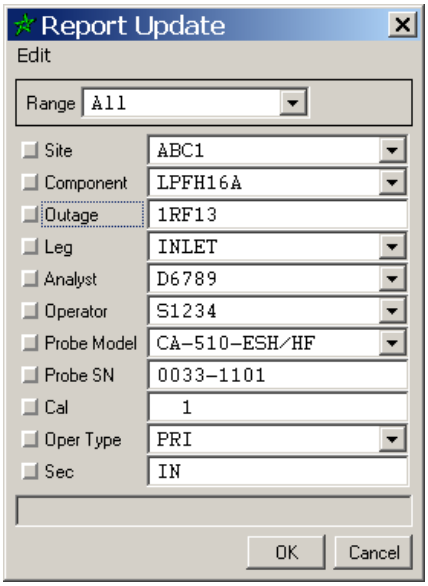



Figure 33. Database | Upload Reports | Import Report Dialog | Report Update Dialog

Right-click on the report column name that you want to edit. As listed in Figure 33, the **Report Update** dialog will appear for the following fields: *Site, Component, Outage, Leg, Analyst, Operator, Probe Model, Probe Serial Number, Cal, Operator Type, and Section*. For all other fields, the **Global Change** dialog will appear.

The **Global Change** dialog acts like a find and replace tool. The value you specify will be changed **From** *x* **To** *y* within the **Range** selected. For example in Figure 32, we need to edit the **CODE** column in the report. The name of the column is shown in the title bar of the dialog. *ODW* was automatically entered in the **From** field because the report line that was selected just before we brought up the **Global Change** dialog had *ODW* in the **CODE** column. You can manually type in this box as many characters as the column allows. For **CODE**, the maximum is four (4) characters. We need to change *ODW* to *ODD. S*o, we simply type *ODD* in the **To** box.

Before we click **OK** to make the global change, we need to select a range of report entries in which this change will occur. Click the **Range** dropdown list shown in Figure 34 to display the available choices. In our example, we want to change all the *ODW* calls in the **CODE** column to *ODD* calls. So, we would select the default of **All** in the **Range** field.

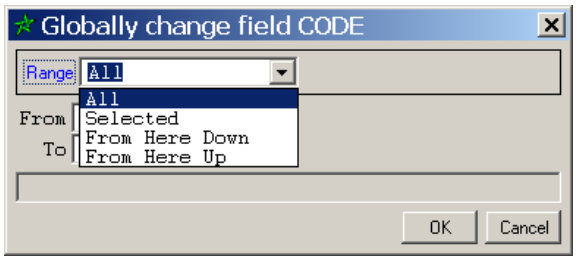



Figure 34. Database | Upload Reports | Import Report Dialog | Global Change Dialog | Selecting a Range

**Range** selections include:

- **All**: Selects all instances of the **From** value in the selected report field and changes them to the value in the **To** field.

- **Selected**: Intended to change only the selected line. This option is currently under development; therefore, for a one-line edit, you must manually type over the desired values in the report.

- **From Here Down**: Changes all instances of the **From** value starting at the selected line down to the bottom of the report. Lines from the selected line up to the beginning of the report are unchanged. The selected line in Figure 35 is line 14.

- **From Here Up**: Changes all instances of the **From** value starting at the selected line up to the beginning of the report. Lines from the selected line down to the end of the report are unchanged. The selected line in Figure 35 is line 14.

**TIP:** The **Range** dropdown list shown in Figure 34 is the same for both the **Global Change** or **Report Update** dialogs.

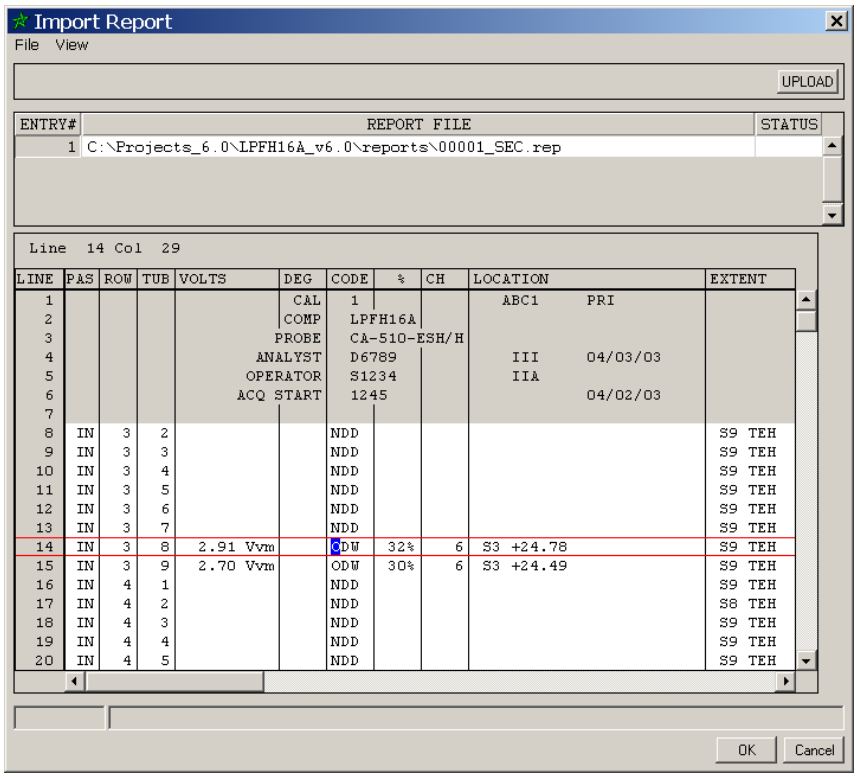



Figure 35. Database | Upload Reports | Import Report Dialog with a Report Opened & Report Line Selected

As previously mentioned, right-clicking a report column header in order to globally change any of the fields shown in Figure 33 will bring up the **Report Update** dialog. The **Outage** and **Probe SN** fields are the only fields that can be edited manually. The sources of all remaining fields are from the **Lookup** tables, **Summary** fields, or entries on the **EddyAdmin** dialog for the project. All of these fields, with the exception of **Probe Model** and **Probe SN**, are required for the report to be uploaded. If one or more of these fields is empty, a warning will appear when attempting to upload the report indicating that you must have information in that field(s) before it can be uploaded. The **Report Update** dialog is the only way to edit one of these fields.

As shown in Figure 36, there are two (2) selections on the **Edit** menu of the **Report Update** dialog (*Figure 33*). To better understand the purpose of these selections, please review the following foreword.

There are three report entries of interest: the initial entry, the modified entry, and the default entry. The initial entry comes from the currently selected row in the report being modified. When you first open the **Report Update** dialog, the modified entry is set equal to the initial entry. The modified entry is the one whose values are displayed and will be used for any global changes. When you click **OK**, any modified entries are stored in a file as the new default entries. As you modify entries, the indicators to

the left of these entries appear depressed (*green*) for any value that differs from the initial value. For example, if the **Outage** entry starts out as *1RF12* and you type in *1RF13*, the indicator to the left of the **Outage** field turns green and depressed. If you then click **OK**, *1RF13* will be stored as the new default value for the **Outage** field.

Sometimes, not all of the information is filled in for certain reports - especially converted reports. **Edit | Use Defaults For Invalid** leaves the valid information as it is and replaces only the invalid entries with the default. For example, if the **Cal** number entry is incorrect, you can change the **Cal** number to make it valid, and fill in the rest with **Edit | Use Defaults For Invalid**. Using **Edit | Use Defaults** simply restores all the default values.

- **Edit | Use Defaults** will fill in all the fields with default (*modified*) values that the user has previously selected and/or manually entered. The boxes to the left of the fields that will be changed will appear depressed and green.

- **Edit | Use Defaults For Invalid** is similar to **Edit | Use Defaults** however, default values are only entered in fields that are invalid in the report.

These two (2) functions are handy when uploading *foreign* (non-CoreStar) reports where some of the required information was not originally in the converted report.

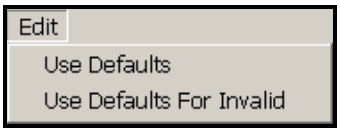



Figure 36. Database | Upload Reports | Import Report Dialog | Report Update Dialog | Edit Menu

Using the **Report Update** dialog is easy. Any field or combination of the fields listed can be modified. For example, say you need to change the **Operator** field in the report. When the **Report Update** dialog first opens, all the boxes on the left are gray (*not depressed and green*) as shown in Figure 37. Once you make a selection, the box next to that field will turn green and appear depressed. In Figure 38, *A3579* has been selected as the new **Operator**. No other changes have been made in our example, so the indicators to the left of the remaining fields stay gray and appear raised. The **Range** dropdown list works the same as previously discussed (*Figure 34*). We chose **From Here Down** to demonstrate the change.

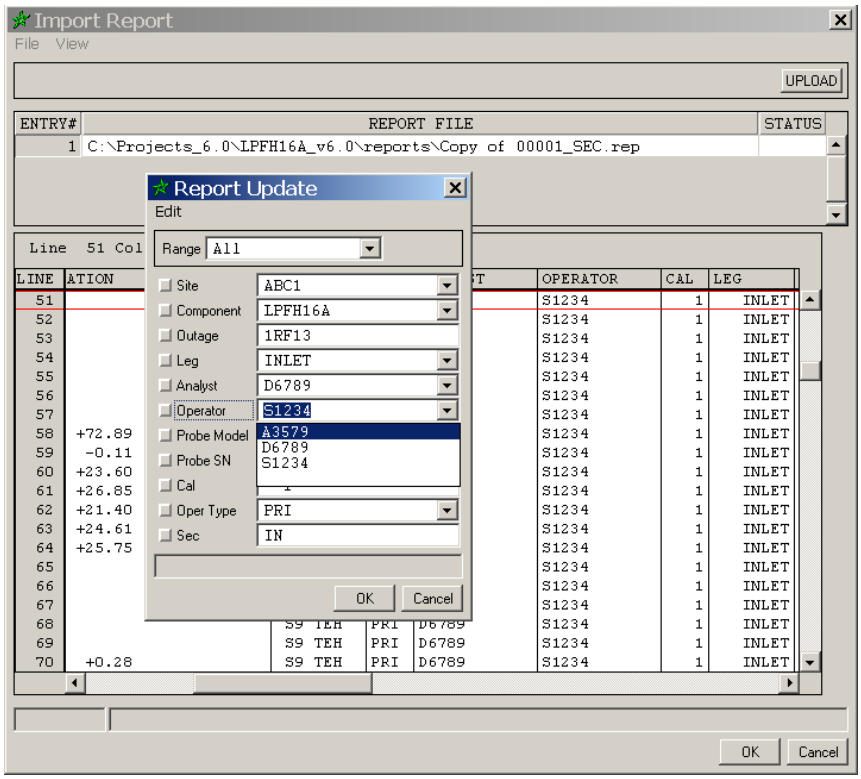



Figure 37. Database | Upload Reports | Import Report Dialog | Changing a Field Using the Report Update Dialog-1

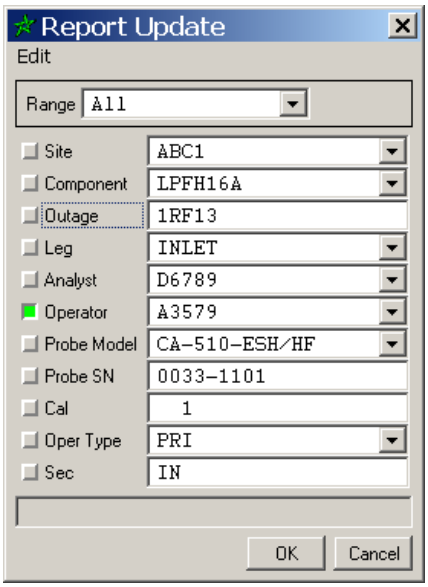



Figure 38. Database | Upload Reports | Import Report Dialog | Changing a Field Using the Report Update Dialog-2

The report after changing the **Operator** field is shown in Figure 39. **Line** 50 was selected, so the **Operator** was changed from *S1234* to *A3579* from **Line** 50 to the end of the report. The **Status Bar** at the bottom of the dialog shows what has changed.

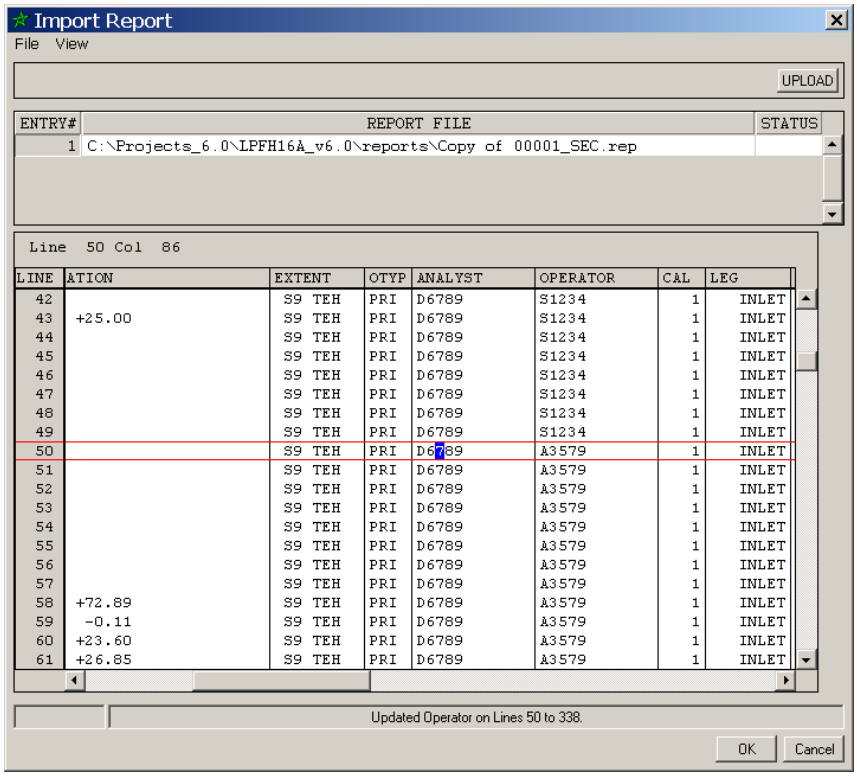



Figure 39. Database | Upload Reports | Import Report Dialog after Changing the Operator Field *From Here Down*

**REMEMBER:** All edits done to any report loaded in the **Import Report** dialog are only temporary since there is no way to save the modified report file, which, from a quality assurance standpoint, would not be an appropriate action. Any edits done by the DBMS administrator should be kept to a minimum and only with the approval of the job lead.

The best way to correct a report is to have the analyst that analyzed the data edit and resave the report to the cal group directory.

- **Database | Upload Component** loads information from the *project.cmp* file into the **Tubes** and **Landmarks** tables in the database. When you create a new database, these tables are empty. This step is optional and not required in order to use the DBMS software. Information uploaded to the **Tubes** table is handy when performing tube numbering conversions, while the information uploaded to the **Landmarks** table is handy for publishing a list or table of landmarks from MS Access to MS Word for an eddy current report. If you modify the *project.cmp* file in MakeComp and have been using the information in the **Tubes** and/or **Landmarks** tables, you will need to select **Database | Upload Component** again to update the information in these tables.

  You can familiarize yourself with the table structure of the database by exploring it using either MS Access 97, 2000, or 2002 on your PC.

- **Database | Clear Recent DBMS** clears the list on the **File | Recent Databases** fly-out menu for the currently open project. For more information, please see **File | Recent Databases** discussed earlier.

- **Database | Clear Recent Maps** clears the list on the **File | Recent Maps** fly-out menu for the currently open project. For more information, please see **File | Recent Maps** discussed earlier.

## Tools Menu

As shown in Figure 40, the **Tools** menu contains two (2) choices, which are discussed below.

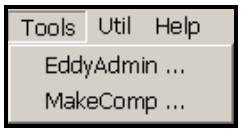



Figure 40. Tools Menu

- **Tools | EddyAdmin** starts and displays the **EddyAdmin** dialog. **EddyAdmin** is a separate stand-alone utility in **EddyVision**, which functions somewhat like a hub of information for each project. **EddyAdmin** can be opened and modified apart from the other programs. For more details about the purpose and use of **EddyAdmin**, please refer to the *EddyVision32™ v6.0 EddyAdmin User Manual*.

  Opening **EddyAdmin** from within **DBMS** has the advantage that any edits done and saved for the project in **EddyAdmin** will be dynamically changed in **DBMS** once **EddyAdmin** is closed. The **DBMS** main window will be disabled until **EddyAdmin** is closed.

- **Tools | MakeComp** starts and displays the main window of the **MakeComp** software. **MakeComp** is a separate stand-alone software module in **EddyVision**. **MakeComp** is used to create component (*cmp*) files for projects. **MakeComp** can be opened and modified apart from the other programs. For more details about the purpose and use of **EddyAdmin**, please refer to the *EddyVision32™ v6.0 MakeComp User Manual*.

  Opening **MakeComp** from within **DBMS** has the advantage that any edits done and saved for the project in **MakeComp** will be dynamically changed in **DBMS** once **MakeComp** is closed. The **DBMS** main window will be disabled until **MakeComp** is closed.

## Util Menu

As shown in Figure 41, the **Util** (*Utility*) menu contains three (3) choices, which are discussed below.

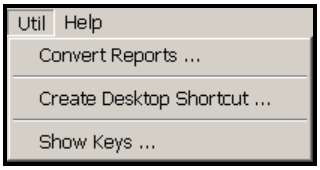



Figure 41. Util Menu

- **Util | Convert Reports** displays the dialog shown in Figure 42. This is a new feature in **EddyVision v6.0** that allows users to convert non-CoreStar or *foreign* analysis reports that are in text format to CoreStar binary format that can then be uploaded into the database. As previously mentioned, all non-CoreStar report import formats have been removed from **EddyVision v6.0**. This dialog provides a method to better handle the *ever-changing* foreign report formats in the industry by giving the user the ability to create custom report conversion routines as needed. In Figure 42, an EddyNet® format has been loaded as indicated in the title bar of the dialog. The filename (*without the file extension*) of the currently opened report converter file will always be shown in the title bar.

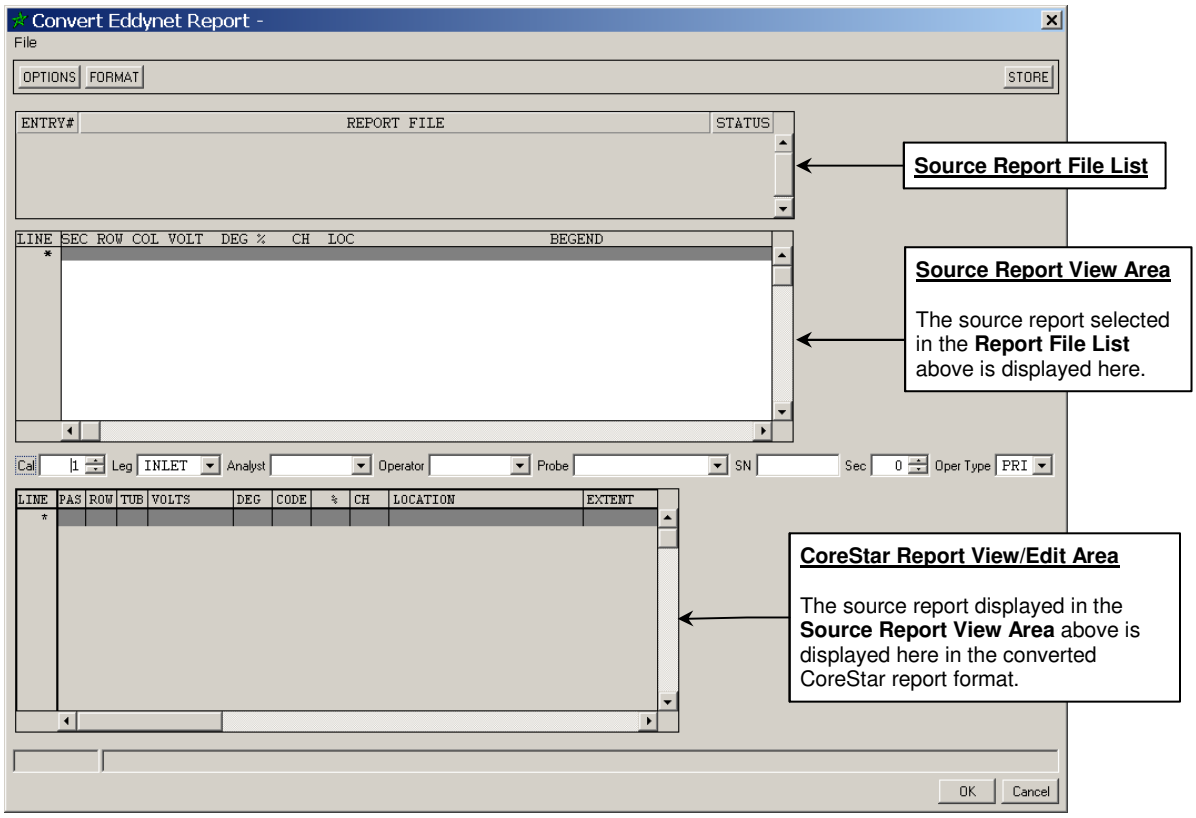



Figure 42. Util | Convert Report Dialog

Convert Reports Dialog

This topic will discuss the **Convert Report** dialog beginning with the menu selections, followed by on-dialog buttons, any underlying dialogs and menu selections on those dialogs, and the description and use of the three (3) main parts of the **Convert Report** dialog as shown in Figure 42. For the purpose of this discussion, the EddyNet® format (*included with EddyVision v6.0*) and associated report files will be used.

| | |
|---|---|
| **IMPORTANT:** | The report converter works only with source reports saved as text files. For example, when an analysis report is saved in EddyNet®, both an encrypted report file (*redb*) and text report files are saved. |

***FILE MENU***

The **File** menu on the **Convert Report** dialog has two (2) choices as shown in Figure 43.

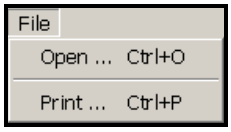



Figure 43. Util | Convert Report Dialog | File Menu

- **File | Open** (Ctrl+O) displays an **Open** dialog from which a source (*non-CoreStar*) report file can be opened. This presents the report file that needs to be converted to CoreStar-format. The source file must be in text format and of the fixed column width type, i.e., no delimiters can be used at this time. Comma-delimited support is planned for a future v6.x maintenance release. As shown in Figure 44, the source file contents will be displayed in the **Source Report View Area** of the **Convert Report** dialog, while the filename is displayed in the **Source Report File List**. In addition, the converted report, based on the currently loaded format, will be displayed in the **CoreStar Report View/Edit Area** (*see Figure 42*).

| | |
|---|---|
| **NOTE:** | You may navigate to any path accessible from your computer in the **File | Open** dialog to locate and open a source report file for conversion. |

- **File | Print** (Ctrl+P) displays a typical **Print** dialog (*Figure 9*). Select the desired printer. Click the **Preferences** button to modify the printer's parameters as desired. Once all options are set, click **Print** to send the converted CoreStar report (*CoreStar Report View/Edit Area*) to the printer; otherwise, click **Cancel.**

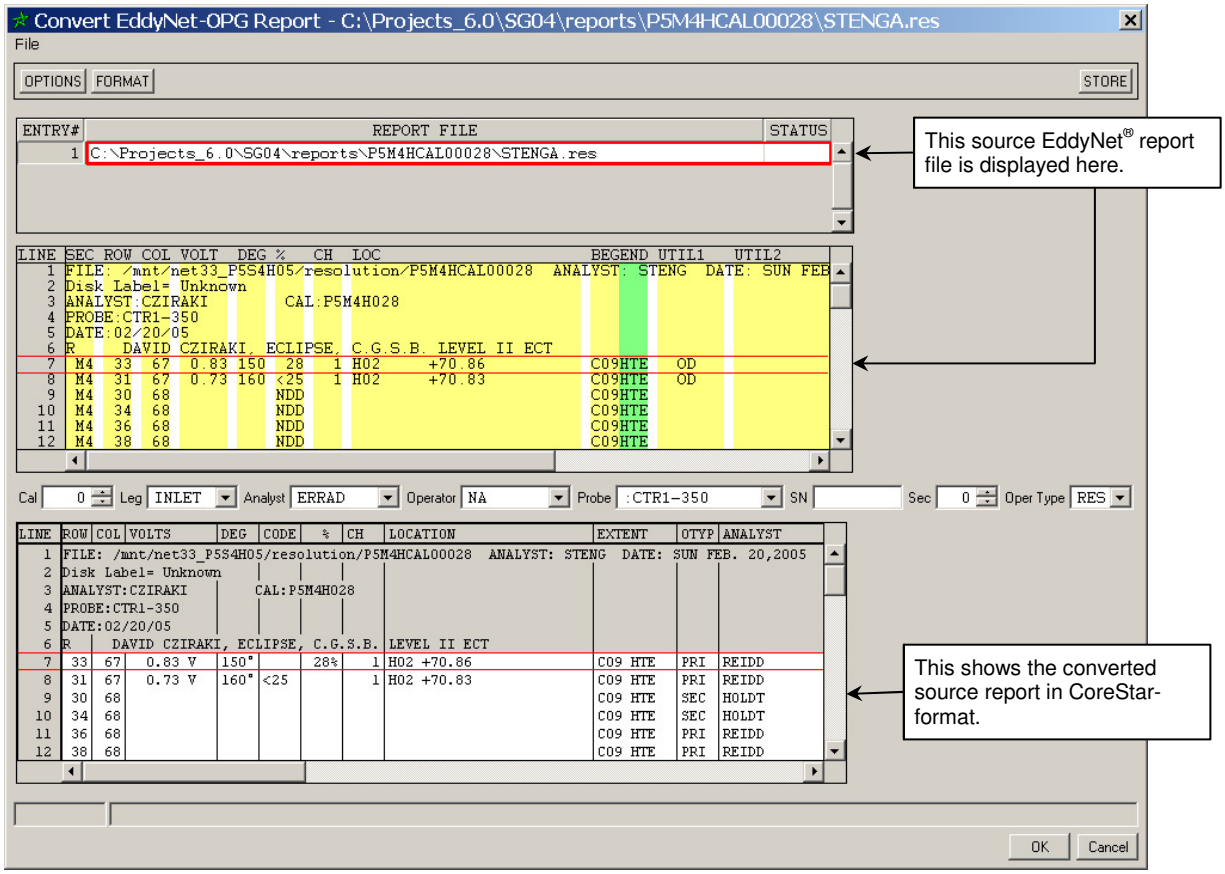



Figure 44. Util | Convert Report Dialog with Source EddyNet® Report Opened

***OPTIONS BUTTON***

Clicking the **Options** button in the upper left corner of the **Convert Report** dialog displays the **Report Convert Options** dialog shown in Figure 45. These parameters are set by the user to meet his/her viewing preferences. The five (5) available settings on this dialog are discussed next.

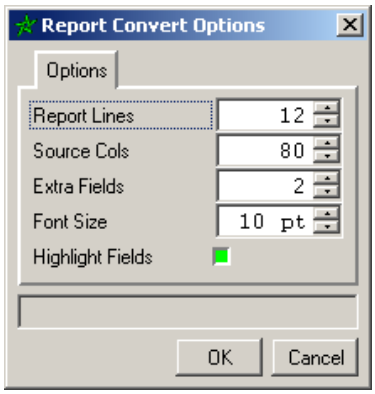



Figure 45. Util | Convert Report Dialog | Options Button | Report Convert Options Dialog

- **Options | Report Lines** controls the number of report lines displayed in both the **Source Report View Area** and the **CoreStar Report View/Edit Area** of the **Convert Report** dialog. This setting ranges from 4 to 30.

- **Options | Source Cols** controls the number of report columns displayed in the **Source Report View Area** of the **Convert Report** dialog. This setting ranges from 4 to 200.

- **Options | Extra Fields** controls the number of report fields displayed beyond the **Extent** field in **CoreStar Report View/Edit Area** of the **Convert Report** dialog. This setting ranges from 0 to 14.

- **Options | Font Size** controls the size of the font displayed in the **CoreStar Report View/Edit Area** of the **Convert Report** dialog. This setting ranges from 8 to 12. The size of the font displayed in the **Source Report View Area** is fixed at 10. This setting is not dynamic – that is, the project must be closed and reopened for the change to take effect.

- **Options | Highlight Fields** enables (*green*) or disables (*gray*) whether the fields are highlighted in the **Source Report View Area**. This feature is a necessity when initially creating a new conversion format. The highlight color is controlled by the user in the **Format** dialog discussed next. Assuming you are reviewing this manual electronically, **Highlight Fields** is enabled in Figure 44 as indicated by the columns that are highlighted yellow and green.

***FORMAT BUTTON***

Clicking the **Format** button in the upper left corner of the **Convert Report** dialog displays the **Format** dialog shown in Figure 46. Figure 46 has been edited (*shortened*) in order to show the **OK** and **Cancel** buttons on the dialog. The **Format** dialog is used to open, modify, and/or create report format conversion files (*fmt*). The menu bar, the tabs, and the buttons on this dialog will be discussed in this order next.

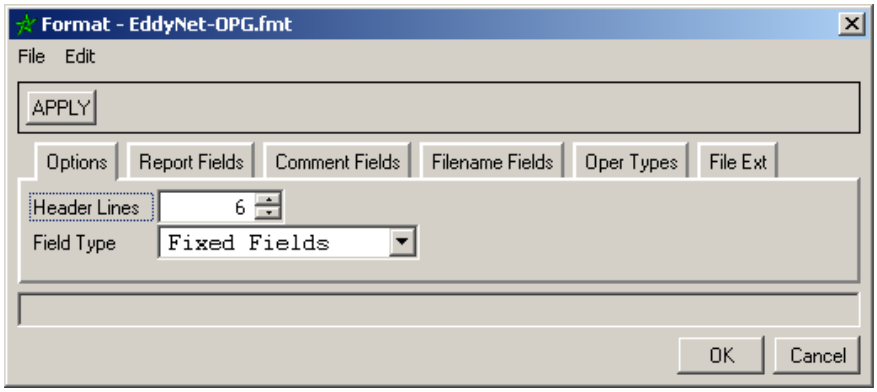



Figure 46. Util | Convert Report Dialog | Format Button | Format Dialog

*File Menu*

The **File** menu on the **Format** dialog has four (4) selections shown in Figure 47, which are discussed below.

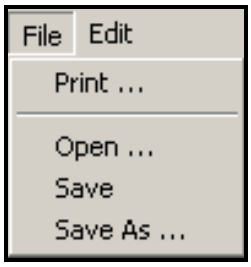



Figure 47. Util | Convert Report Dialog | Format Dialog | File Menu

- **File | Print** displays a typical **Print** dialog (*Figure 9*). Select the desired printer. Click the **Preferences** button to modify the printer's parameters as desired. Once all options are set, click **Print** to send the contents of each tab on the **Format** dialog (*the currently opened fmt file*) to the printer; otherwise, click **Cancel**. If a given tab has no entry, then a page will not be printed for that tab.

- **File | Open** displays an **Open** dialog from which an existing *fmt* file (*report format conversion file*) can be opened in the **Format** dialog. The default path for *fmt* files is ***[project]\report_formats***; however, you may navigate to any drive and path accessible from your PC to locate and open a *fmt* file.

**NOTE:** For pre-v5.7.2 projects, you will need to create the ***\report_formats*** directory under each project and copy any existing *fmt* files you wish to use in each project to this directory. For example, if you want to copy and use the basic EddyNet® report conversion file (*Eddynet.fmt*) that comes with EddyVision v6.0, the file is located in:

***[install_path]\CoreStar\EddyVision 6.0\system\report_formats***

- **File | Save** immediately saves the currently opened *fmt* file using the same filename and path. This action is reported in the **Status Bar** along the bottom of the **Format** dialog.

- **File | Save As** displays a **Save As** dialog from which the user can save the currently opened *fmt* file to a different location and/or using a different filename. This action is reported in the **Status Bar** along the bottom of the **Format** dialog.

*Edit Menu*

The **Edit** menu on the **Format** dialog has two (2) selections as shown in Figure 48, which are discussed below.

Figure 48. Util | Convert Report Dialog | Format Dialog | Edit Menu

- **Edit | Set Default Colors** resets all highlight colors on the **Report Fields** tab (*discussed later*) to default shades of gray.

- **Edit | Reset** is under development and not yet implemented.

*Options Tab*

The **Options** tab on the **Format** dialog has two (2) settings as shown in Figure 46, which are discussed below.

- **Options Tab | Header Lines** specifies how many lines from the top of the source report that should be skipped before valid report entries begin. For example in Figure 44, the header makes up the first six (6) lines of the source report in the top of the **Convert Report** dialog; therefore, a value of '*6*' should be entered in the **Header Lines** field of the **Options** tab. Note in Figure 44 that the corresponding six (6) lines in the CoreStar report in the bottom of the **Convert Report** dialog are grayed-out.

  Any line of the source report that does not have a valid tube identification number *(i.e., sec, row, & col*) in the project's component file (*cmp*) will also be treated as a comment line. The report converter in DBMS v6.0 requires that you use sections – that is, a name for section <u>must be entered</u> in the *project.cmp* file. Typical choices are *SEC, PASS, ZONE, QUAD*, etc. Please refer to the *Parameters Button* | *Parameters Tab* topic in the *EddyVision32 v6.0 MakeComp User Manual* for more information.

- **Options Tab | Field Type** specifies the expected format of the text in the source report as either **Fixed Fields** or **Comma Delimited**. **Fixed Fields** means that given values are always in the same columns, while **Comma Delimited** establishes columns based on commas between each column in the source report. The **Comma Delimited** field type has not been implemented yet and is still under development

*Report Fields Tab*

The **Report Fields** tab on the **Format** dialog is shown in Figure 49. This is one of the most important parts of the report converter in DBMS v6.0. This interface is used to specify where parts of each source report line goes in the CoreStar report during conversion. For example in Figure 49, the text in columns 5 through 7 of the source report will fill the *Row* column in the CoreStar report for each valid report entry. Each column of the **Report Fields** tab is described below.

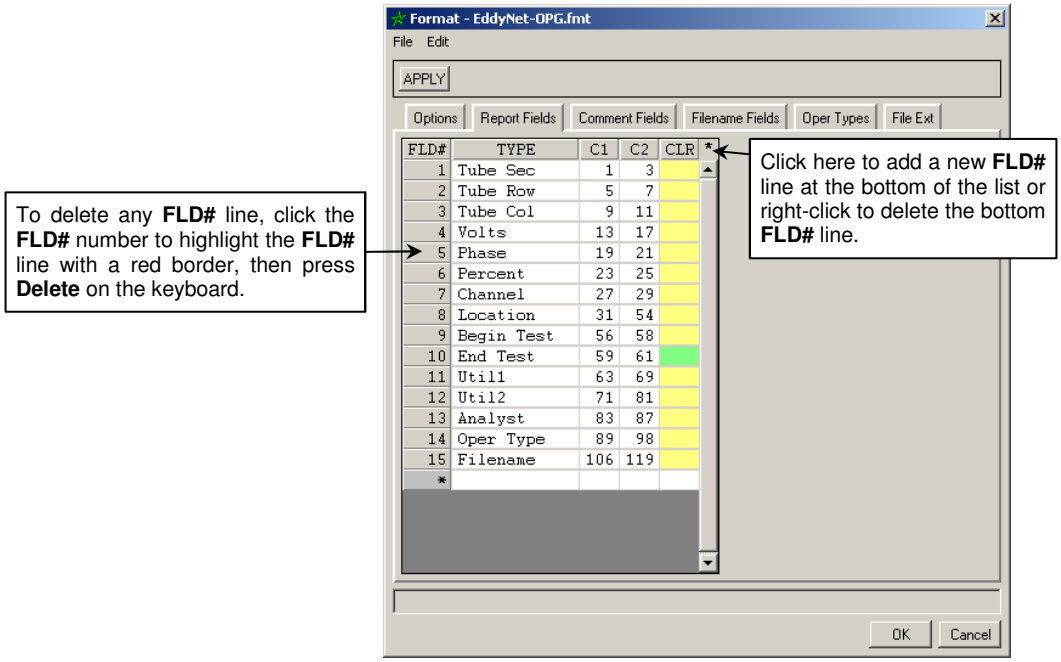



Figure 49. Util | Convert Report Dialog | Format Dialog | Report Fields Tab

- **Report Fields Tab | FLD#** is an abbreviation for 'field number.' This column simply increments the **FLD#** for each new line added to the **Report Fields** tab. To add or delete **FLD#** lines, please review Figure 49. To *Undo* all changes, simply click **Cancel**, then click **No** on the message box that appears.

- **Report Fields Tab | Type** specifies the column of the CoreStar report where the text indicated by **C1** and **C2** from the source report will reside after conversion. Click or right-click a **Type** field to toggle through the available columns in a CoreStar report. Middle-click a **Type** field to set it to *Skip*. For example in Figure 49, the information for the CoreStar report *Row* column will be extracted starting with the 5$^{th}$ column (**C1**) and ending with the 7$^{th}$ column (**C2**) in the source report. The **C1** and **C2** values are inclusive.

- **Report Fields Tab | C1** specifies the beginning column of a range of the source report that will be used to fill the column specified in the **Type** field for a given **FLD#**. Click to increase by *1*, Shift+click to increase by *10*, Ctrl+click to increase by *100*, and middle-click to reset to *1*. Alternatively, right-click to decrease by *1*, Shift+ right-click to decrease by *10*, and Ctrl+ right-click to decrease by *100*. For example in Figure 49, the information for the CoreStar report *Volts* column will be extracted starting with the 13$^{th}$ column (**C1**) and ending with the 17$^{th}$ column (**C2**) in the source report. The **C1** and **C2** values are inclusive.

- **Report Fields Tab | C2** specifies the ending column of a range of the source report that will be used to fill the column specified in the **Type** field for a given **FLD#**. Click to increase by *1*, Shift+click to increase by *10*, Ctrl+click to increase by *100*, and middle-click to reset to *1*. Alternatively, right-click to decrease by *1*, Shift+ right-click to decrease by *10*, and Ctrl+ right-click to decrease by *100*. For example in Figure 49, the information for the CoreStar report *Phase* column will be extracted starting with the 19$^{th}$ column (**C1**) and ending with the 21$^{th}$ column (**C2**) in the source report. The **C1** and **C2** values are inclusive.

- **Report Fields Tab | CLR** specifies the background color of the column defined by **C1** and **C2** in the source report. To use this feature, click in any **CLR** field to toggle between the two (2) default shades of gray, middle-click to set the background color to white, or right-click to pick your own background colors. The same button clicks on the **CLR** title field will perform the same operations, but for all the fields at once.

As you modify the **C1** and **C2** fields, you will see them dynamically highlight with the selected background colors in the source report. Fields can be adjacent and even overlap. This is where using different background colors or shades of gray become extremely useful. For example, in the *Eddynet-OPG.fmt* shown in Figure 49, *Begin Test* and *End Test* have been assigned two (2) different colors. These are adjacent columns in the source report as well. To see the effect of the highlight colors for these two (2) columns, look at the *BEG* and *END* columns of the source report in Figure 44, which can best be viewed in the PDF version of this manual.

Finally, if the **Percent** column of the source report contains both numeric values (*percent*) and alpha characters (*3-letter codes*), the report converter will automatically parse numeric values into the **Percent** column of the CoreStar report, while the alpha characters will be parsed into the **Code** column of the CoreStar report. For example in Figure 49, note that there is only a **Percent** field **Type** in use for columns *23* through *25* of the source report and no **Code** field is listed. Now look at Figure 44 and you can see that the *28%* call was parsed out to the **Percent** column in the CoreStar report, while the *<25* and *NDD* codes were parsed out to the **Code** column.

**NOTE:** *NDD* calls in a source report are parsed out as *null* values in the **Code** column of the Corestar report; however, after uploading the converted CoreStar report, *NDD* will actually be stored in the *defect* field of the *report* table.

*Comment Fields Tab*

The **Comment Fields** tab on the **Format** dialog is shown in Figure 50. This interface allows the user to extract information from *Comment* lines in the source report. Examples of *Comment* lines include embedded headers and footers. The columns of the **Comment Fields** tab are discussed below.

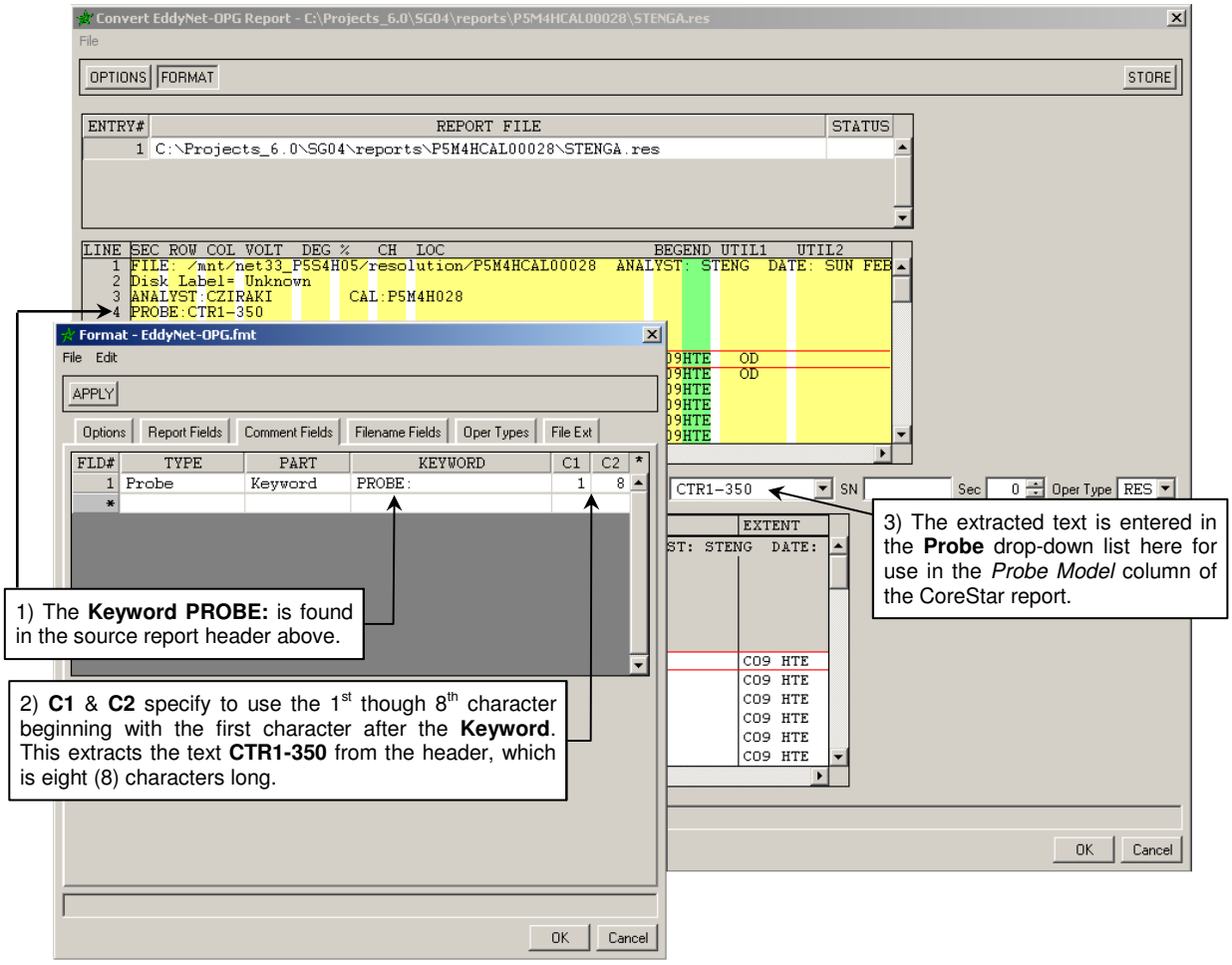



Figure 50. Util | Convert Report Dialog | Format Dialog | Comment Fields Tab

- **Comments Fields Tab | FLD#** is an abbreviation for 'field number.' This column simply increments the **FLD#** for each new line added to the **Comment Fields** tab. To add or delete **FLD#** lines, please review Figure 49. To *Undo* all changes, simply click **Cancel**, then click **No** on the message box that appears.

- **Comments Fields Tab | Type** specifies the column of the CoreStar report where the extracted text from the source report will reside after conversion. Click or right-click a **Type** field to toggle through the available columns in a CoreStar report. For example in Figure 50, the information for the CoreStar report *Probe* column will be extracted beginning with the 1st character (**C1**) after the **Keyword** (*PROBE:*) and ending with the 8th character (**C2**) in the source report. The **C1** and **C2** values are inclusive.

- **Comments Fields Tab | Part** specifies whether a **Keyword** or **Fixed Cols** will be used to extract the information specified in the **Type** field.

- **Comments Fields Tab | Keyword** specifies a *keyword* if used. Simply enter the *keyword* in this field. If **Fixed Cols** is being used instead, this field will be empty.

- **Report Fields Tab | C1 & C2** specifies the beginning column of a range of the source report that will be used to fill the column specified in the **Type** field for a given **FLD#**. Click to increase by *1*, Shift+click to increase by *10*, Ctrl+click to increase by *100*, and middle-click to reset to *1*. Alternatively, right-click to decrease by *1*, Shift+ right-click to decrease by *10*, and Ctrl+ right-click to decrease by *100*. For example in Figure 50, the information for the CoreStar report *Probe* column will be extracted beginning with the 1st character (**C1**) after the **Keyword** (*PROBE:*) and ending with the 8th character (**C2**) in the source report. The **C1** and **C2** values are inclusive.

  If in **Fixed Cols** mode, it is from the start of the line – that is, the first char being *1*. If in **Keyword** mode, the conversion looks for the *keyword* in the comment and then **C1** and **C2** are relative to the first character after the *keyword*.

*Filename Fields Tab*

The **Filename Fields** tab on the **Format** dialog is shown in Figure 51. This interface allows the user to extract information from the source report filename displayed in the **Source Report File List** of the **Convert Report** dialog (*see Figure 42*).

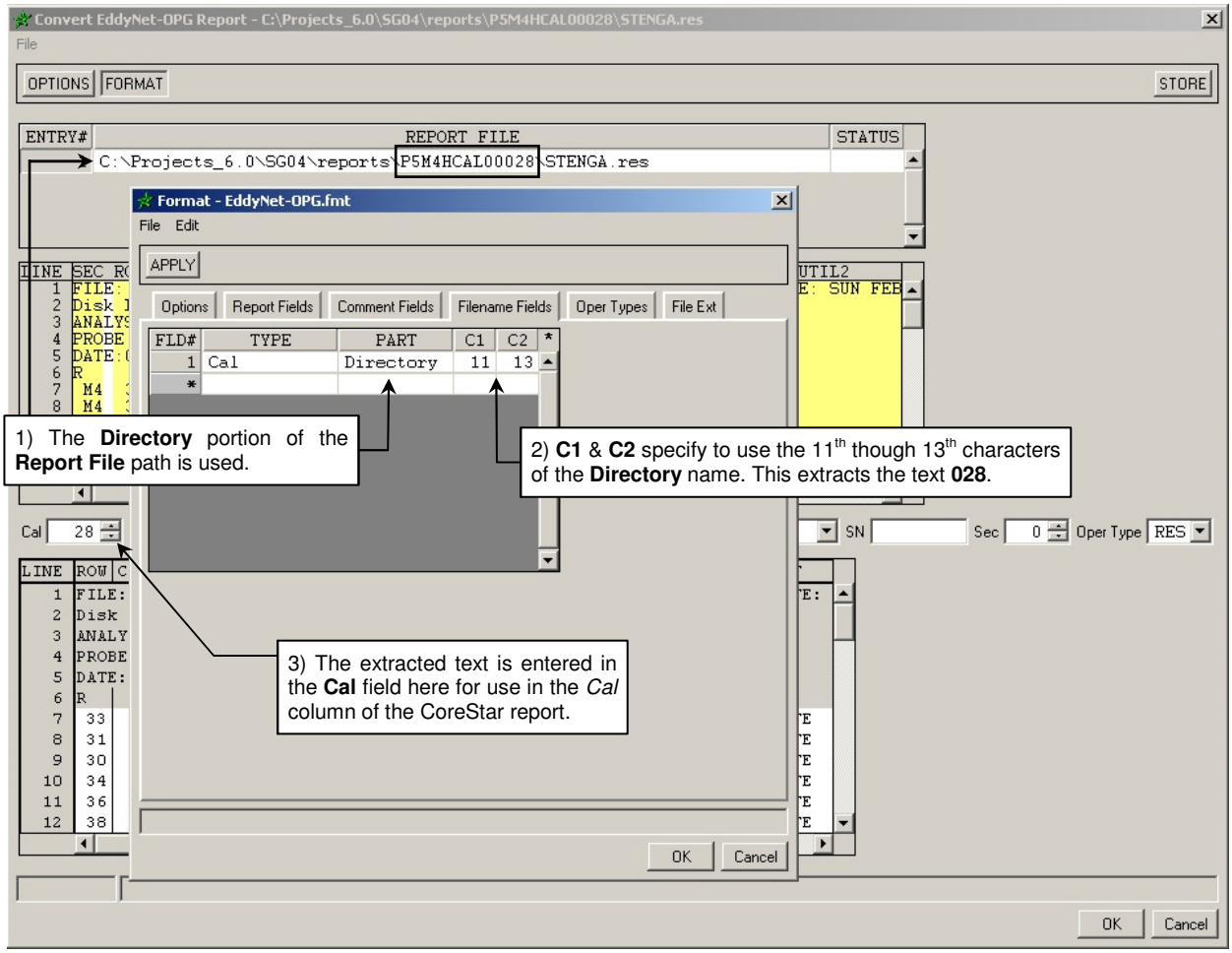



Figure 51. Util | Convert Report Dialog | Format Dialog | Filename Fields Tab

- **Filename Fields Tab | FLD#** is an abbreviation for 'field number.' This column simply increments the **FLD#** for each new line added to the **Filename Fields** tab. To add or delete **FLD#** lines, please review Figure 49. To *Undo* all changes, simply click **Cancel**, then click **No** on the message box that appears.

- **Filename Fields Tab | Type** specifies the column of the CoreStar report where the extracted text from the source report will reside after conversion. Click or right-click a **Type** field to toggle through the available columns in a CoreStar report.

- **Filename Fields Tab | Part** specifies the portion of the source report file path that will be used to extract the information specified in the **Type** field. The three (3) choices are **Directory**, **Filename**, and **Extension**. The **Directory** is the parent directory of the file.

  For example in Figure 51, the source report file path displayed is:

  **`C:\Projects_6.0\SG04\reports\P5M4HCAL00028\STENGA.res`**

  the **Directory** is **`P5M4HCAL00028`**,
  the **Filename** is **`STENGA`**, and
  the **Extension** is **`res`** (not **`.res`**).

- **Filename Fields Tab | C1 & C2** specifies the first and last character of a range of the selection in the **Part** field that will be used to fill the column specified in the **Type** field for a given **FLD#**. Click to increase by *1*, Shift+click to increase by *10*, Ctrl+click to increase by *100*, and middle-click to reset to *1*. Alternatively, right-click to decrease by *1*, Shift+ right-click to decrease by *10*, and Ctrl+ right-click to decrease by *100*.

For example in Figure 51, the information for the CoreStar report *Cal* column will be extracted beginning with the 11$^{th}$ character (**C1**) of the **Directory** portion of the source report file path displayed in the upper portion of the **Convert Report** dialog and ending with the 13$^{th}$ character (**C2**). The **C1** and **C2** values are inclusive.

*Oper Types Tab*

The **Oper Types** tab on the **Format** dialog is shown in Figure 52. This interface *translates* source report operator-types to CoreStar report operator-types.

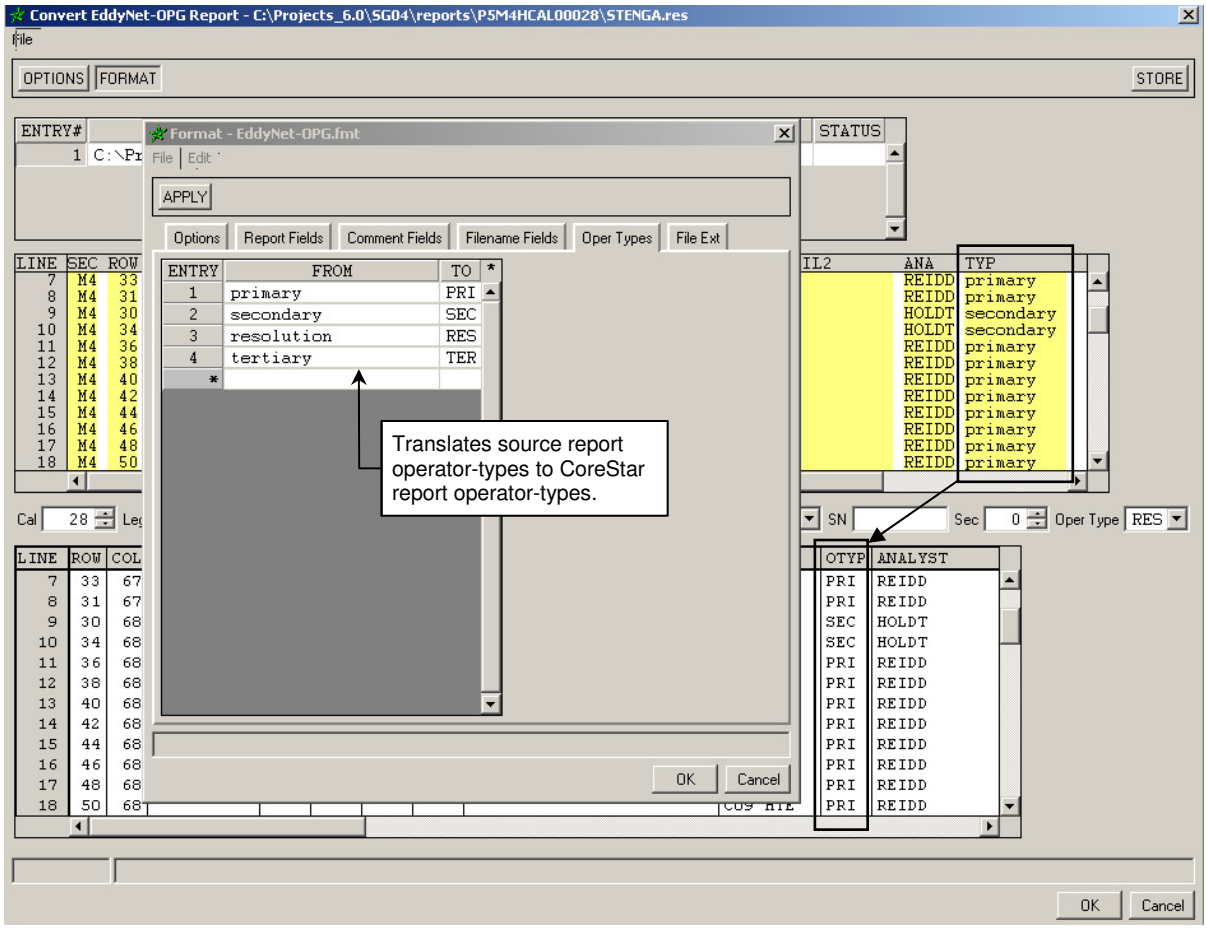



Figure 52. Util | Convert Report Dialog | Format Dialog | Oper Types Tab

- **Oper Types Tab | Entry** column simply increments the entry number for each new line added to the **Oper Types** tab. To add or delete **Entry** lines at the bottom of the list, click or right-click the asterisk (*) above the scroll bar. The add or delete an **Entry** line within the list, click the **From** or **To** field of the line you want to delete or where you want the new entry to appear, then on the keyboard, press **Shift+Delete** to delete the selected line or **Shift+Insert** to insert a new **Entry** above the selected line. To *Undo* all changes, simply click **Cancel**, then click **No** on the message box that appears.

- **Oper Types Tab | From** column specifies the operator-types from the source report.

- **Oper Types Tab | To** column specifies the operator-types of the CoreStar report.

In the example shown in Figure 52, the source operator-types of *primary*, *secondary*, *resolution*, and *tertiary* will translate to *PRI*, *SEC*, *RES*, and *TER*, respectively, in the converted CoreStar report.

*File Ext Tab*

The **File Ext** tab on the **Format** dialog is shown in Figure 53. This interface allows the user to modify the list of file extensions available in the **File | Open** dialog of the main **Convert Report** window. This is very useful to filter only the source report files of interest when using the report converter utility.

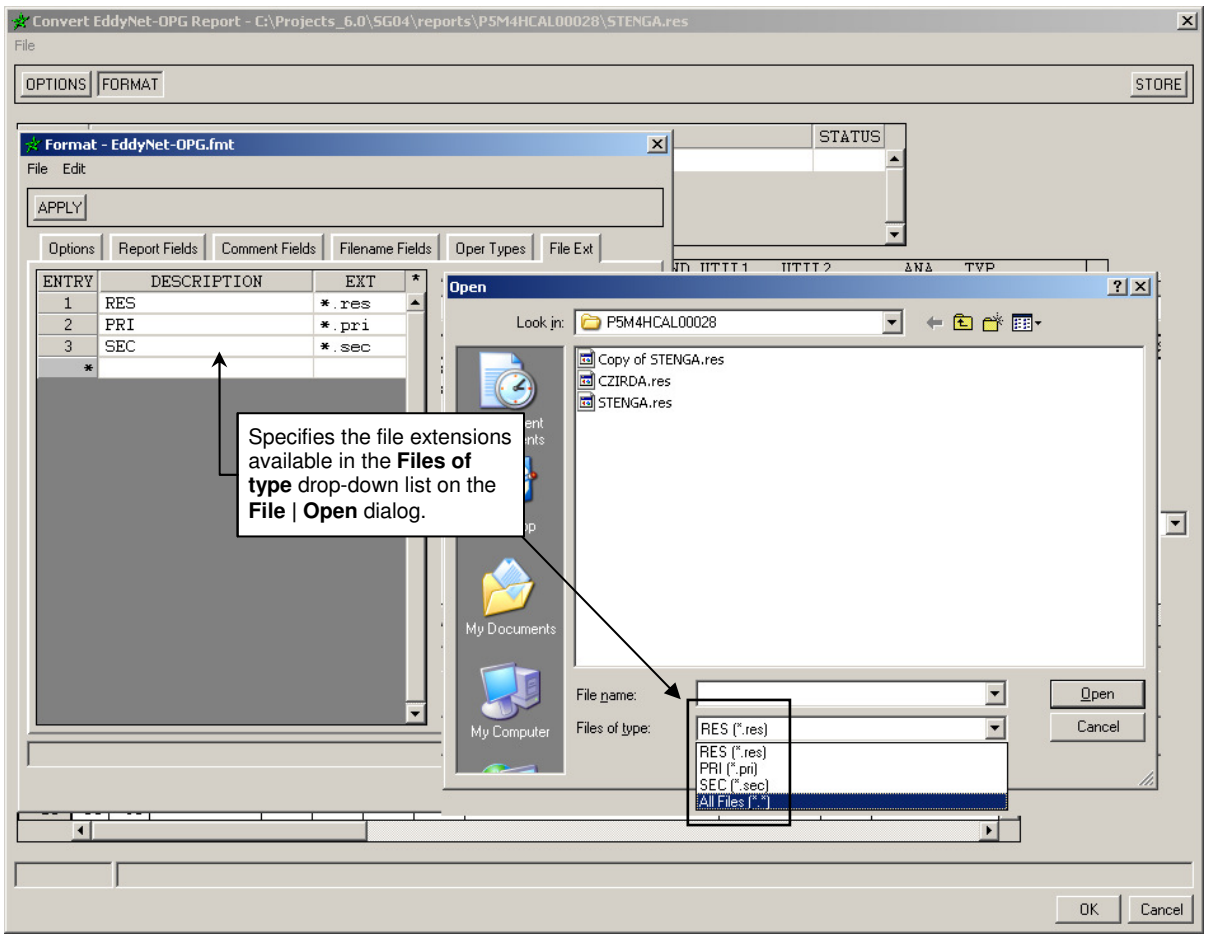



Figure 53. Util | Convert Report Dialog | Format Dialog | File Ext Tab

- **File Ext Tab | Entry** column simply increments the entry number for each new line added to the **File Ext** tab. To add or delete **Entry** lines at the bottom of the list, click or right-click the asterisk (*) above the scroll bar. The add or delete an **Entry** line within the list, click the **From** or **To** field of the line you want to delete or where you want the new entry to appear, then on the keyboard, press **Shift+Delete** to delete the selected line or **Shift+Insert** to insert a new **Entry** above the selected line. To *Undo* all changes, simply click **Cancel**, then click **No** on the message box that appears.

- **File Ext Tab | Description** column simply allows the user to enter user-defined descriptions of the each file extension type. Descriptions are limited to a maximum of twenty (20) characters including spaces. For example, *primary* source report descriptions could include "primary", "PRI", "All primary reports", etc.

- **File Ext Tab | Ext** specifies extensions as they will appear in the **Files of type** drop-down list on the **File | Open** dialog as shown in Figure 53. The extension must be in the form of **`*.pri`**, **`*.txt`**, etc. Extension names are limited to a maximum of six (6) characters after the dot, i.e., **`*.123456`**.

  An **All Files (`*.*`)** filter is automatically added and should not be included here.

*Apply Button*

Clicking the **Apply** button at any time on the **Format** dialog immediately activates or *applies* any changes made on any tabs of the **Format** dialog. This is useful while modifying an existing format or creating a new one to see if you are getting the desired results in the CoreStar report area on the main **Convert Report** dialog without having to save and close the **Format** dialog.

*OK Button*

Clicking the **OK** button at any time on the **Format** dialog closes the dialog and saves the currently opened *fmt* file using the same filename.

*Cancel Button*

Clicking the **Cancel** button on the **Format** dialog simply closes the **Format** dialog; however, if changes have been made, a question dialog will appear asking if you wish to save changes. Click **Yes** to save changes, **No** to discard changes, or **Cancel** to return to the **Format** dialog and continuing working. You can see that the **Cancel** button works much like an *undo* function if you've gotten to a point where you wish to start over.

***REPORT ATTRIBUTE FIELDS***

You can modify certain attributes such as the **Cal** number using the eight (8) fields shown bordered in red in Figure 54 above the CoreStar report area in the **Convert Report** dialog. These values will be used for fields that are not filled in when you **Store** the converted CoreStar report. Whenever possible, they should be extracted from the source report, which is determined by the *fmt* file used for conversion. The user can change any of these attribute fields as desired. In addition, the site information, i.e., site code, comp, outage, etc., if not defined by the source report and *fmt* file in use, will use the values defined in the project.

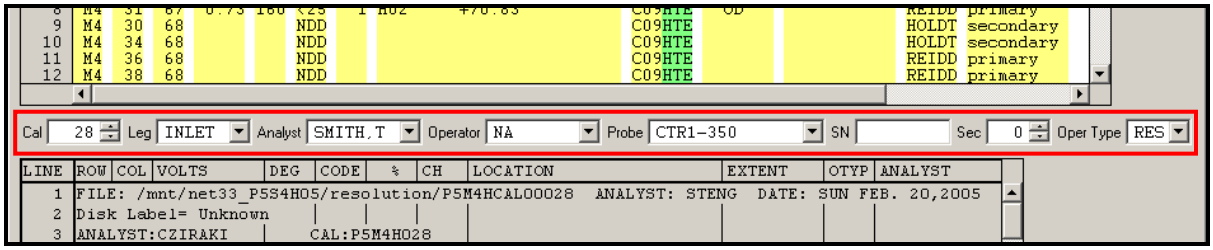



Figure 54. Util | Convert Report Dialog | Report Attribute Fields

***STORE BUTTON***

The **Store** button is the upper right corner of the **Convert Report** dialog must be clicked in order to save or *store* the converted CoreStar report. This is the final action the user must perform before closing the **Convert Report** dialog. Clicking the **Store** button does not upload the report to the database in the project. After storing the converted CoreStar report, the user can then upload this report in the normal way (*see the **Import Report** dialog topic discussed earlier*).

When the **Store** button is clicked, the converted CoreStar report is saved in the *reports* directory of the current project in the format **`#####_XXX.rep`**, where **`#####`** is a 5-digit cal group number using the value in the **Cal** attribute field, while **`XXX`** is the analysis report type using the **Oper Type** attribute field (*Figure 54*).

For example, the converted CoreStar report in Figure 54 will be saved as **`00028_RES.rep`** in the *reports* directory of the current project. In addition, after the **Store** button is clicked, a message similar to the one shown in Figure 55 is displayed.

Figure 55. Util | Convert Report Dialog | Status Bar Message After Storing a Report

The remaining selections on the **Util** menu (Figure 41) are discussed below

- **Util | Create Desktop Shortcut** simply creates a shortcut on your desktop for the currently opened project. If you are opening a certain project(s) often, a shortcut can simplify the task by double-clicking the applicable shortcut. These shortcuts may be deleted from your desktop at any time without affecting the project. The use of this feature is optional.

- **Util | Show Keys** displays the **HASP Keys** dialog shown in Figure 56, on which the user can check the status of a HASP key(s) currently connected to the computer or update a HASP key(s). In Figure 56, Analysis and Test keys are currently connected to USB ports of the computer, while no DBMS key is connected. The **Timeout** dates of all keys should be checked as part of inspection planning to ensure a key(s) will not timeout during the inspection. This menu selection is available in all the other software modules of EddyVision as well. For details on updating and/or troubleshooting HASP keys, please see the *Getting Started* manual.

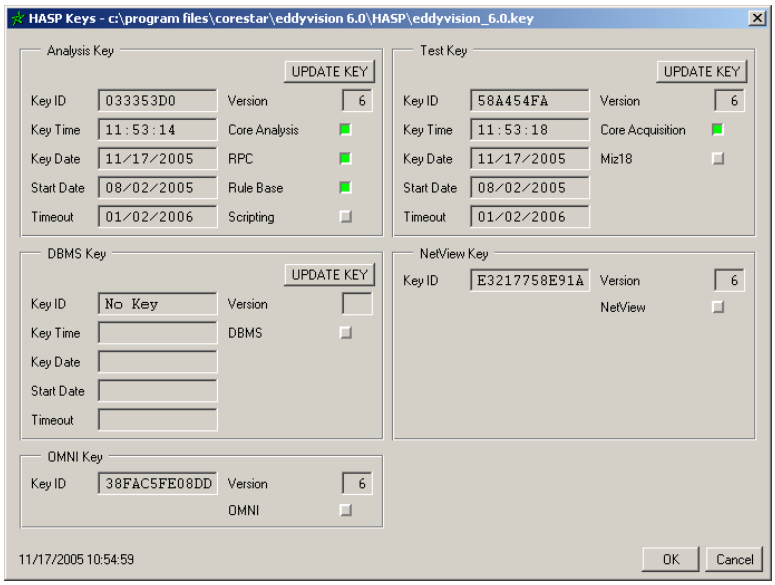



Figure 56. Util | Show Keys | HASP Keys Dialog

## Help Menu

As shown in Figure 57, the **Help** menu contains two (2) choices. Each item is discussed below.

Figure 57. Help Menu

- **Help | Project Info** displays the dialog shown in Figure 58. The dialog contains information pertinent to the currently open project.

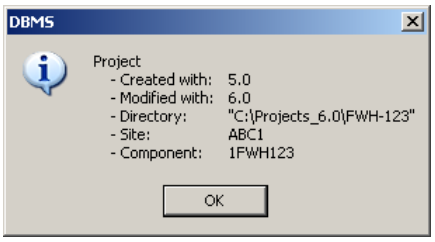



Figure 58. Help | Project Info Dialog

- **Help | About DBMS** displays the **About** dialog shown in Figure 59. This dialog includes software version and technical support information.

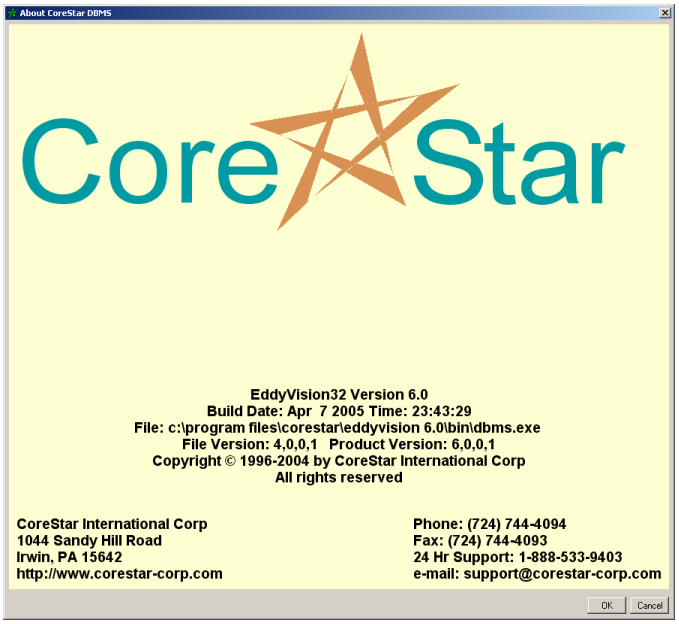



Figure 59. Help | About DBMS Dialog

### *Special Buttons – Main Window*

This topic will discuss the purpose and use of each specialized button located along the top of the main DBMS window immediately below the pull-down menus. Review Figure 60 for a brief description about the function of each button.

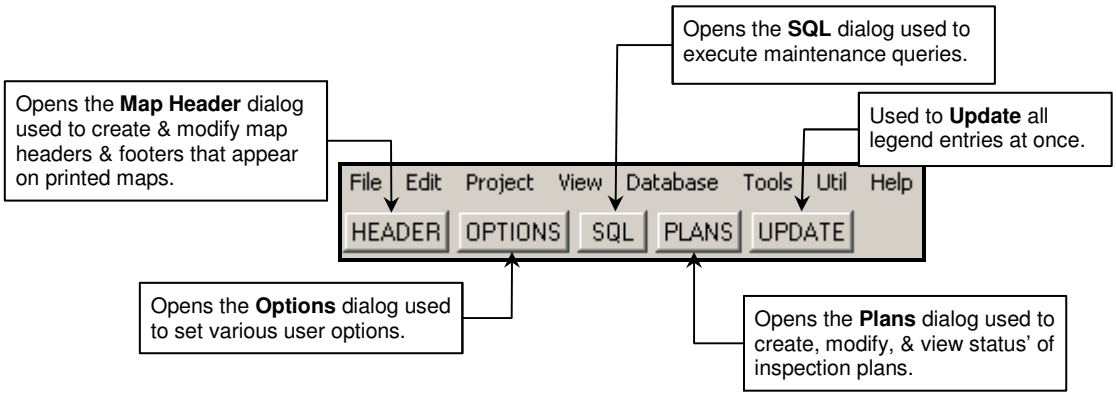



Figure 60. Special Buttons on Main Window

## Header Button

Clicking the **Header** button in Figure 60 opens the **Map Header** dialog shown in Figure 61. This dialog is used to create and modify map headers and footers that appear on the maps or *plots* printed using DBMS.

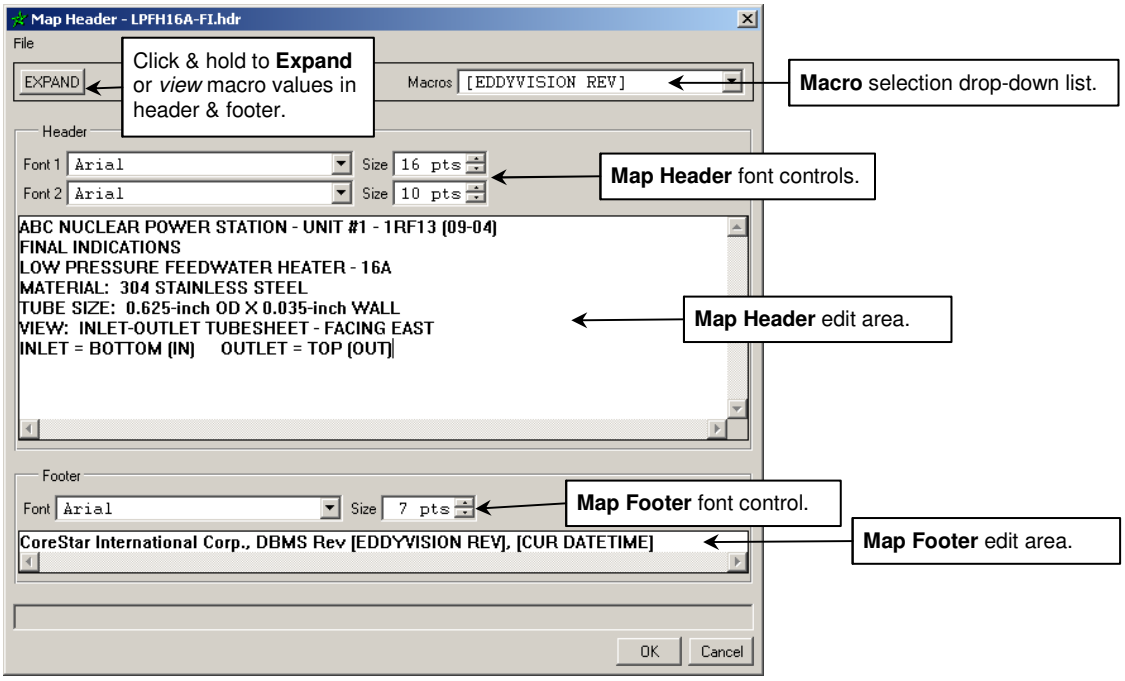



Figure 61. Header Button | Map Header Dialog

Map Header Dialog

This topic will discuss the **Map Header** dialog (Figure 61) beginning with the menu selections, followed by drop-down boxes, on-dialog buttons, and then edit areas.

***FILE MENU***

The **File** menu on the **Map Header** dialog has five (5) selections as shown in Figure 62.

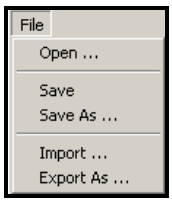



Figure 62. Header Button | Map Header Dialog | File Menu

- **File | Open** displays an **Open** dialog from which a header file, already saved in the project, may be opened. Project header files (*hdr*) are stored in the ***project]\map_headers*** directory.

- **File | Save** automatically saves the currently displayed header to the ***[project]\map_headers*** directory using the same filename. If **File | Save** is selected for a header that has not been previously saved, a **Save As** dialog is displayed and the instructions below for **File | Save As** apply. Once saved, a message in the **Status Bar** is displayed informing the user that the header was saved to ***[project]\map_headers\[filename.hdr]***.

- **File | Save As** displays a **Save To Project As** dialog. Type the desired name for the header file in the **File name:** field. There is no need to add the *hdr* extension to the name since the program will add it automatically. Once saved, a message in the **Status Bar** is displayed informing the user that the header was saved to ***[project]\map_headers\[filename.hdr]***.

- **File | Import** displays an **Import From User** dialog. Simply select the desired header file from those listed and click the **Open** button. Alternatively, you may simply double-click a file. The header file you select is copied into the ***[project]\map_headers*** directory. This is handy when you want to use a header file between two or more projects. **File | Import** defaults to the following location:

  ***[Install_Path]\CoreStar\EddyVision 6.0\user\map_headers***

  Regardless, you may navigate to any drive accessible from your computer in order to import a header file.

- **File | Export As** displays an **Export To User As** dialog. Type the desired name for the header file in the **File name:** field. There is no need to add the *hdr* extension to the name since the program will add it automatically. The current header in the **Map Header** dialog will be exported or *saved* with the filename you choose. This is handy when you want to share a header file between two or more projects. **File | Export As** defaults to the following location:

  ***[Install_Path]\CoreStar\EddyVision 6.0\user\map_headers***

  Regardless, you may navigate to any drive accessible from your computer in order to export a header file.

**HINT:** Map headers are saved as part of the map file discussed earlier (*see Tip under **File | New Map***). Saving and exporting *hdr* files is optional.

***FONT CONTROLS***

The **Map Header** dialog has three (3) controls that are used to select the font type and size for the header and footer of a printed map. Review Figure 61 for the locations of the font controls.

- **Header | Font 1** and **Size** control the type and size of the font used in the first line of the printed **Map Header**.

- **Header | Font 2** and **Size** control the type and size of the font used in the second and all remaining lines of the printed **Map Header**.

- **Footer | Font** and **Size** control the type and size of the font used in the footer line of the printed **Map Header**.

**NOTE:** The effect of font selections and sizes can only be viewed using **File | Print Preview** on the main menu or on the actual printed map.

***MACROS DROP-DOWN LIST & EXPAND BUTTON***

Macros are like shorthand tools used for automatically entering varying values such as the current date and time, and/or repetitive phrases, i.e., Unit, Site, Component, etc. Macros are useful in headers and footers to avoid typing redundant strings of text. Used wisely, macros can completely automate the map header and footer task for each map you print. In addition, macros are useful in queries and query headers for printed lists (*discussed later*).

There are two different kinds of macros available in EddyVision - **System** and **User**. **System** macros are fixed, cannot be modified, and include macros such as date, time, software revision, component name, etc. **User** macros are user-defined and a user can create as many macros as desired to reduce typing tasks. You can view the available macros in a given project on the **Options** dialog under the **Options** button (*discussed later*).

To use a macro as part of a **Map Header**, place the cursor where you wish to include a macro, and then select the macro from the **Macros** drop-down list in the upper right corner of the **Map Header** dialog. The macro selected will appear at the cursor's position. In the footer area, shown in Figure 61, two (2) **System** macros are in use, i.e., *[EDDYVISION REV]* and *[CUR DATETIME]*. Note the syntax of the macros – that is, they are all capital letters and enclosed inside square brackets. You may simply type in the macro if you know its name; however, the macro must exist in the project and it must be entered using the syntax above. **System** macros exist in every project automatically, but **User** macros exist only in the project where they were created.

To temporarily view the value that will be entered in the place of a macro, click and hold the **Expand** button in the upper left corner of the **Map Header** dialog. When the **Expand** button is released, the macros will be displayed again.

With some experimentation, you'll quickly start to see how useful and powerful using macros can be in map headers, map footers, queries, query headers, and query footers.

**TIPS:**

- To 'import' a set of existing **User** macros from one project to another, copy the ***`[project]\config\dbms\dbms.opt`*** file from the source project to the target project using Windows Explorer. Afterwards, the 'imported' **User** macros may have to be 'tweaked'. Be aware that the ***`dbms.opt`*** file contains all DBMS options, including, but not limited to, user macros, margin settings for printed maps, color controls for viewing, border controls for printed maps, and tick sizes.
- If you use the **Replicate** function in EddyAdmin to create a new project, any **User** macros that exist in the project source project will be automatically copied to the newly replicated project. For more information about creating projects, please see the *EddyAdmin User's Manual*.

## Options Button

Clicking the **Options** button in Figure 60 opens the **DBMS Options** dialog shown in Figure 63, which has been cropped to enhance the view. This dialog is used to adjust certain user options such as main window background color, enable or disable borders on a printer map around either the title, legend, or map, margins around a printed map, watermark color, user macros, and more. The **DBMS Options** dialog contains five (5) tabs. The purpose and settings on each tab will be discussed below.

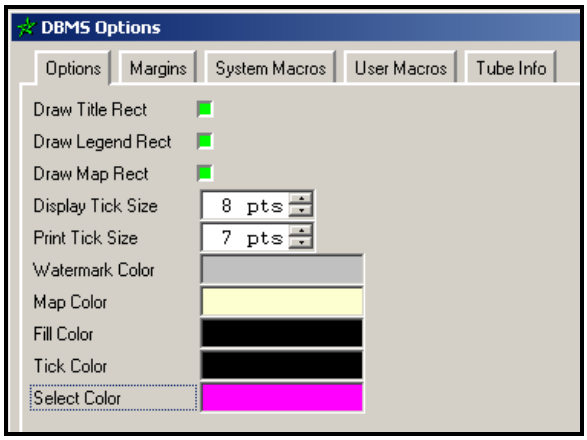



Figure 63. Options Button | DBMS Options Dialog | Options Tab

### DBMS Options Dialog

This topic will discuss the **DBMS Options** dialog (Figure 63) beginning with each tab and the parameters and settings in each tab.

#### *OPTIONS TAB*

As shown in Figure 63, there are ten (10) settings or *controls* on the **Options** tab of the **DBMS Options** dialog that may be adjusted by the user. Each control is discussed below.

- **Draw Title Rect** only affects printed maps. The box will appear depressed and green when enabled resulting in a border being drawn around the title on printed maps.

- **Draw Legend Rect** only affects printed maps. The box will appear depressed and green when enabled resulting in a border being drawn around the legend on printed maps.

- **Draw Map Rect** only affects printed maps. The box will appear depressed and green when enabled resulting in a border being drawn around the map area on printed maps.

- **Display Tick Size** allows the user to adjust the size of the font used to display the row and/or columns tick marks on the monitor. Range: 4 to 20 pts.

- **Print Tick Size** allows the user to adjust the size of the font used for the row and/or columns tick marks when the map is printed. Range: 4 to 20 pts.

- **Watermark Color** displays the currently selected color of the printed watermark(s). This only pertains to components with section labels turned on in the component file (s*ee the MakeComp User's Manual for more information*). See note below to change color.

- **Map Color** displays the currently selected color of the background of the map as viewed on the monitor. See note below to change color.

- **Fill Color** displays the currently selected color of the inside area of each tube displayed in the main DBMS window as viewed on the monitor. Black is default and transparent. See note below to change color.

- **Tick Color** displays the currently selected color used for row and/or column ticks as viewed on the monitor <u>and</u> as printed.

- **Select Color** displays the currently selected color used for the selection cursor box as viewed on the monitor. You should set this to a rarely used color.

**NOTE:** To change an optional color in EddyVision, right-click the color control for a given attribute, select or adjust the color as desired on the **Color** dialog that appears, and then click **OK**.

***MARGINS TAB***

The controls shown in Figure 64 on the **Margins** tab of the **DBMS Options** dialog are used to adjust the margins around a printed map.

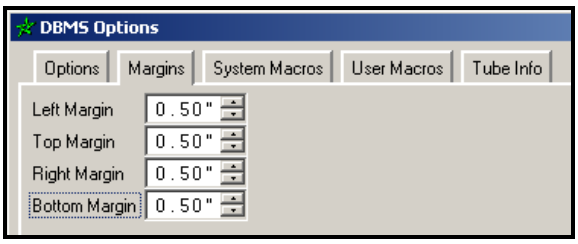


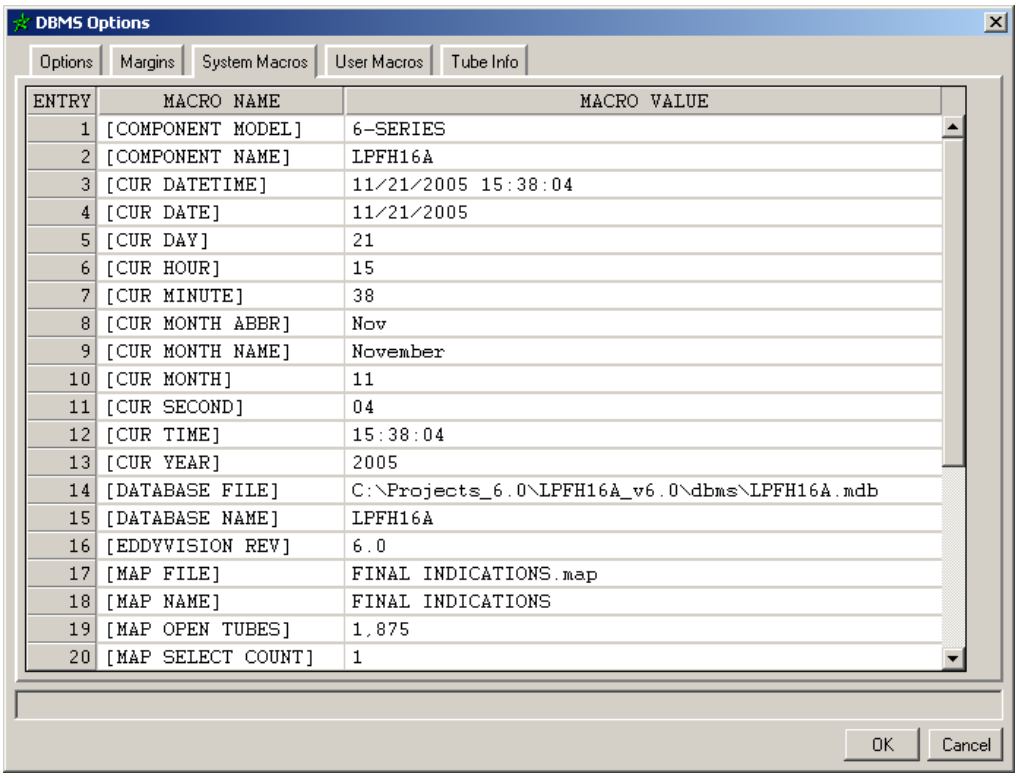

Figure 64. Options Button | DBMS Options Dialog | Margins Tab

### *SYSTEM MACROS TAB*

Macros are like shorthand for text that you use repeatedly (company, name) or values that change constantly (date, time). So, instead of editing your maps and lists every time you use a given project, macros will update automatically.

Shown in Figure 65 is the **System Macros** tab of the **DBMS Options** dialog. This dialog is used to view the **System Macros** (*31 total*) and the current values or text strings associated with each one. **System Macros** cannot be modified or changed in anyway. To use a macro, simply type the name of the macro as shown under the **Macro Name** column where you wish the value or string of the macro to appear. For example, you may want a current date and timestamp added to the footer of each map or query list you print. You could add the macro named *[CUR DATETIME]* to the footer line in the **Map Header** dialog for a given map and/or use the same macro in the page footer of a printed query list.

The next topic, **User Macros**, will show you how you can completely automate a **Map Header** using both **System** and **User Macros**.

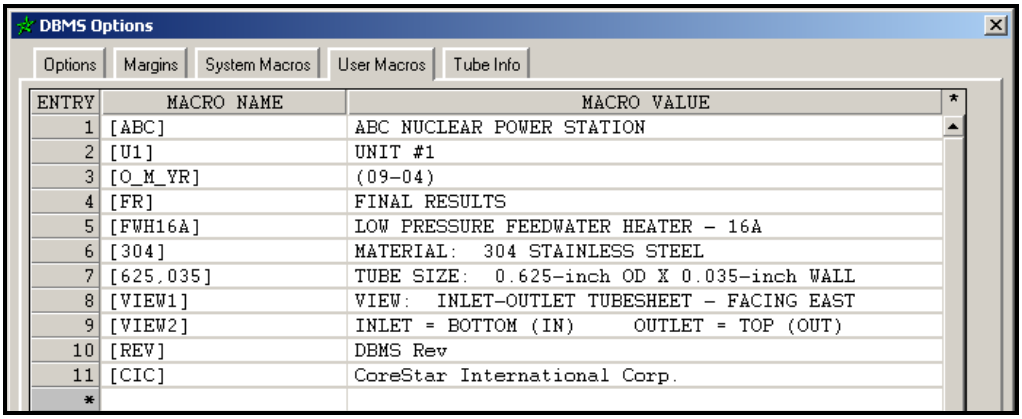



| ENTRY | MACRO NAME | MACRO VALUE |
|---|---|---|
| 1 | [COMPONENT MODEL] | 6-SERIES |
| 2 | [COMPONENT NAME] | LPFH16A |
| 3 | [CUR DATETIME] | 11/21/2005 15:38:04 |
| 4 | [CUR DATE] | 11/21/2005 |
| 5 | [CUR DAY] | 21 |
| 6 | [CUR HOUR] | 15 |
| 7 | [CUR MINUTE] | 38 |
| 8 | [CUR MONTH ABBR] | Nov |
| 9 | [CUR MONTH NAME] | November |
| 10 | [CUR MONTH] | 11 |
| 11 | [CUR SECOND] | 04 |
| 12 | [CUR TIME] | 15:38:04 |
| 13 | [CUR YEAR] | 2005 |
| 14 | [DATABASE FILE] | C:\Projects_6.0\LPFH16A_v6.0\dbms\LPFH16A.mdb |
| 15 | [DATABASE NAME] | LPFH16A |
| 16 | [EDDYVISION REV] | 6.0 |
| 17 | [MAP FILE] | FINAL INDICATIONS.map |
| 18 | [MAP NAME] | FINAL INDICATIONS |
| 19 | [MAP OPEN TUBES] | 1,875 |
| 20 | [MAP SELECT COUNT] | 1 |

Figure 65. Options Button | DBMS Options Dialog | System Macros Tab

### *USER MACROS TAB*

Shown in Figure 66 is the **User Macros** tab of the **DBMS Options** dialog. This dialog is used to create, view, edit, or delete any existing **User Macros** including the **Macro Name** and/or **Macro Value**.




| ENTRY | MACRO NAME | MACRO VALUE |
|---|---|---|
| 1 | [ABC] | ABC NUCLEAR POWER STATION |
| 2 | [U1] | UNIT #1 |
| 3 | [O_M_YR] | (09-04) |
| 4 | [FR] | FINAL RESULTS |
| 5 | [FWH16A] | LOW PRESSURE FEEDWATER HEATER - 16A |
| 6 | [304] | MATERIAL: 304 STAINLESS STEEL |
| 7 | [625,035] | TUBE SIZE: 0.625-inch OD X 0.035-inch WALL |
| 8 | [VIEW1] | VIEW: INLET-OUTLET TUBESHEET - FACING EAST |
| 9 | [VIEW2] | INLET = BOTTOM (IN) OUTLET = TOP (OUT) |
| 10 | [REV] | DBMS Rev |
| 11 | [CIC] | CoreStar International Corp. |
| * | | |

Figure 66. Options Button | DBMS Options Dialog | User Macros Tab

You can add any **Macro Name** you like up to a maximum of twenty (20) characters including the required square brackets. The **Macro Value** can be up to a maximum of fifty (50) characters. To add a line to the **Users Macros** table, click in the small gray box in the upper right corner above the specific scroll bar. This box contains an asterisk (*). To delete the bottom line of the table, right-click in this box. To delete a line other than the bottom one, click on any field of the entry you wish to delete and press Shift+Delete. You may also insert lines by using Shift+Insert.

To demonstrate the use of **System** and **User Macros**, the **Map Header** dialog shown in Figure 67 is using all macros both in the header and footer section.

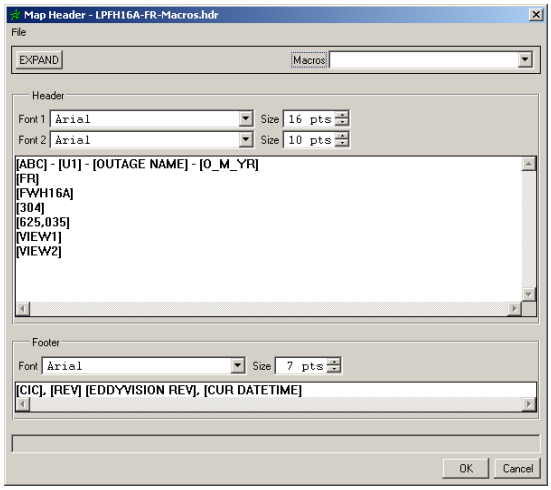



Figure 67. Using Macros in a Map Header

Figure 68 shows what the printed map header will look like using the macros shown in Figure 67.

ABC NUCLEAR POWER STATION - UNIT #1 - 1RF13 - (09-04)
FINAL RESULTS
LOW PRESSURE FEEDWATER HEATER - 16A
MATERIAL: 304 STAINLESS STEEL
TUBE SIZE: 0.625-inch OD X 0.035-inch WALL
VIEW: INLET-OUTLET TUBESHEET - FACING EAST
INLET = BOTTOM (IN) OUTLET = TOP (OUT)

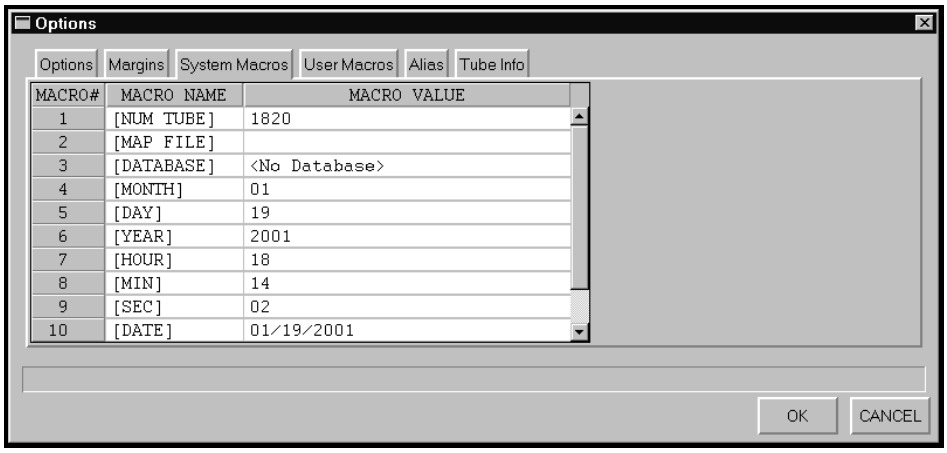
Figure 68. Printed Map Header Using Macros in From Figure 67

You can use any of the **System** and **User Macros** that reside in a given project in printed query lists and in queries as well. For example, a given query may call for records only for the current outage. Instead of using WHERE OUTAGE = '1RF13' in the query, you could use WHERE OUTAGE = [OUTAGE NAME]. The current outage name entered in **EddyAdmin** will automatically be used when the query is executed.

With the use of macros, you can automate a significant number of common tasks in DBMS, thus increasing productivity and reducing your personal stress.

Systems Macros

Macros are shorthand for values that you don't want to type repeatedly (company, name) or values that change constantly (date, time) instead of editing your work every time you look at it, the macro will update automatically. Under the System Macros tab in the Options window there is a list of the permanent macros in the program. See Figure 3-62 below.




| MACRO# | MACRO NAME | MACRO VALUE |
|---|---|---|
| 1 | [NUM TUBE] | 1820 |
| 2 | [MAP FILE] | |
| 3 | [DATABASE] | <No Database> |
| 4 | [MONTH] | 01 |
| 5 | [DAY] | 19 |
| 6 | [YEAR] | 2001 |
| 7 | [HOUR] | 18 |
| 8 | [MIN] | 14 |
| 9 | [SEC] | 02 |
| 10 | [DATE] | 01/19/2001 |

Figure 3-62. System Macros Tab

The Macro Name field shows what you would type to use the macro. The Macro Value field shows the current value the macro represents. For example, [DATE] has the value of 01/19/2001. Therefore [MONTH] has the value of 01, [DAY] of 19 and [YEAR] 2001. Here is a list and a brief explanation of the system macros.

[NUM TUBE] The number of tubes in the current component.
[MAP FILE] The name of the current map file.
[DATABASE] The name of the current database.
[MONTH] The current month from the operating system.
[DAY] The current day of the month from the operating system.
[YEAR] The current year from the operating system.
[HOUR] The current hour, in military time, from the operating system
[MIN] The current minute of the hour according to the system clock.
[SEC] The current second of the minute according to the system clock.
[DATE] The date for today, MM/DD/YYYY, from the operating system.
[TIME] The current time, HH:MM:SS, according to the system clock
[DATETIME] The current date, MM,DD,YYYY, and time, HH:MM:SS.

User Macros

**User Macros** work like the system macros discussed above but are defined by the user and are not hardwired into the software. Figure 3-63 shows the **User Macros** tab.

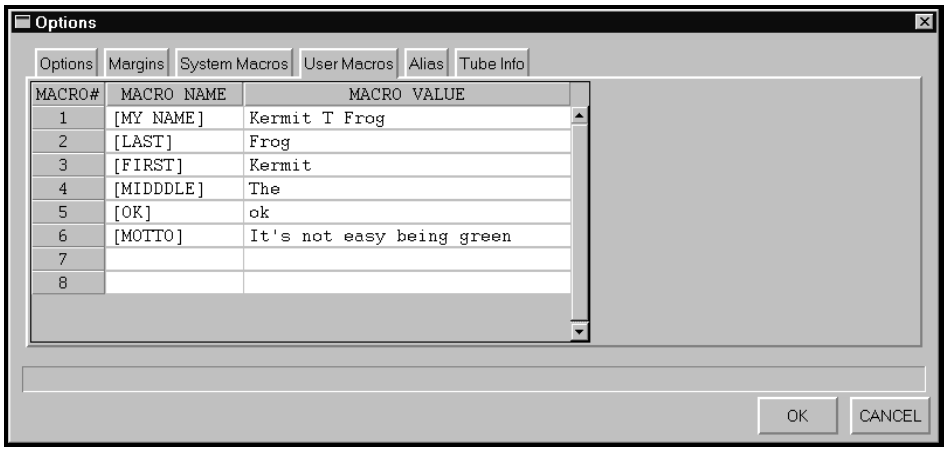



Figure 3-63. User Macros Tab

You can add any macro name you like as long as it is in brackets. The macro value can be up to 30 characters. To add a line, **click** in the small gray **Add/Delete** box in the upper right of the table. **Right-clicking** in the **Add/Delete** box will delete the last line in the table. To delete a line from the body of the table, highlight a field on the line and press **Shift+Delete**. You may also insert lines by using **Shift+Insert**.

Alias Tab

Figure 3-64 below shows the **Alias Tab**. This alias refers to a foreign database, as from ISIS, and what *row, col* and *sec* are called in that database. In order for DBMS to place the symbols on a map correctly, the field names must be *row, col* and *sec*.

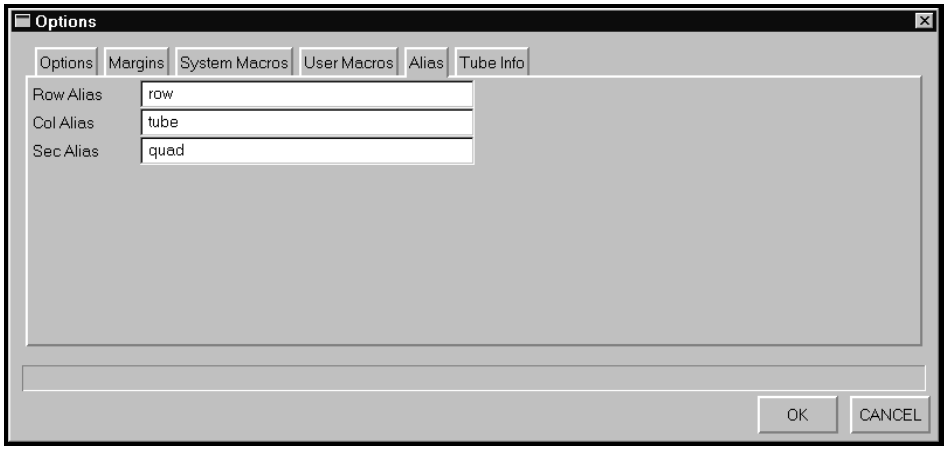



Figure 3-64. Alias Tab

If section is called *quad* in the new database, then the software must understand that q*uad* is the same as *sec*. The **Alias Tab** lets you enter the values of *row, col* and *sec* from the database so that the software understands where to place symbols.

Tube Info Tab

The Tube info Tab works in conjunction with the feature allowing you to double-click on a tube in the map and a Tube Editor Window appears with current data from the database on that tube.

When you add a line to the table, Figure 3-65, a new tab is added to the Tube Editor Window. To add a line, click on the small gray Add/Delete box in the upper right of the table. To delete the bottom line of the table, right-click in the Add/Delete box. In order to delete a line from the body of the table, click one of the fields of the line and press Shift+Delete. You may also add lines by using Shift+Insert.

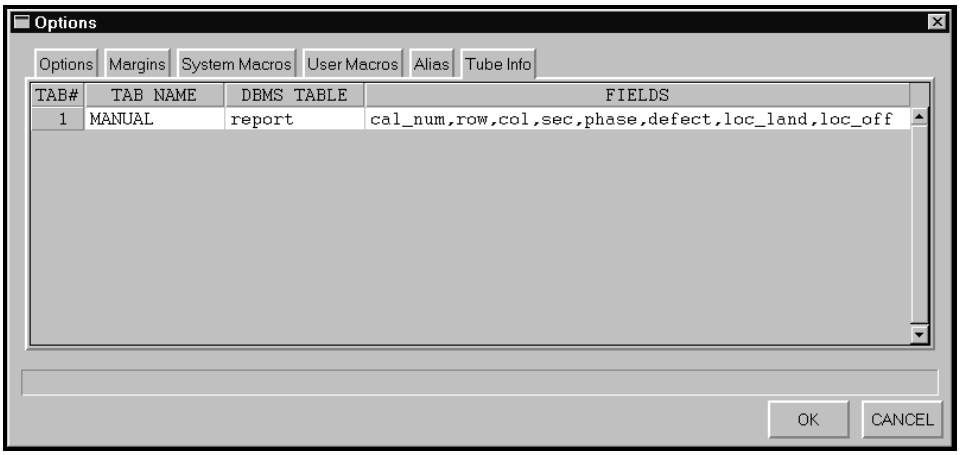



Figure 3-65. Tube Info Tab

There are three fields in the Tube Info Table. They are TAB NAME, DBMS TABLE and FIELDS.

- TAB NAME: What you want to appear in the tab heading.
- DBMS TABLE: What table from the database you want to draw data from to display under this tab.
- FIELDS: Fields from the chosen table to be displayed. Any fields can be selected, but there is a limitation in the space provided under FIELDS. Look for this to change in future revisions of the software. For now, be aware of the limitation and choose fields accordingly.

Once a new tab is created you will need to close and re-start DBMS for changes to take effect. Having done this, the table entry in Figure 3-65 above creates a tab in the Tube Editor Window, Figure 3-66.

Figure 3-66. Tube Editor Window

Without creating any tabs under the Tube Info Tab only the Report tab appears in the Tube Editor Window. This shows all the data currently in the *Report* table of the database. The tab created also displays data from the *Report* table, but in a different way. Likewise, data from any table in the database can be displayed.

IMPORTANT: The Tube Editor is directly linked to the database and any changes made here are made in the database. For example, changing the defect code in the Tube Editor changes the code in the database. Clicking OK *saves changes made to the database.* Afterward the only way to regain data is to reload selected reports. Clicking CANCEL closes the window and no changes are saved.

## SQL Button

Selecting the SQL button from the main DBMS window causes the SQL Window shown in Figure 3-67 to appear. Features of the SQL Window are accessed by pull-down menus, special buttons, or found in the view/edit area. See the section devoted to the SQL Window below for a discussion of its parts and functions.

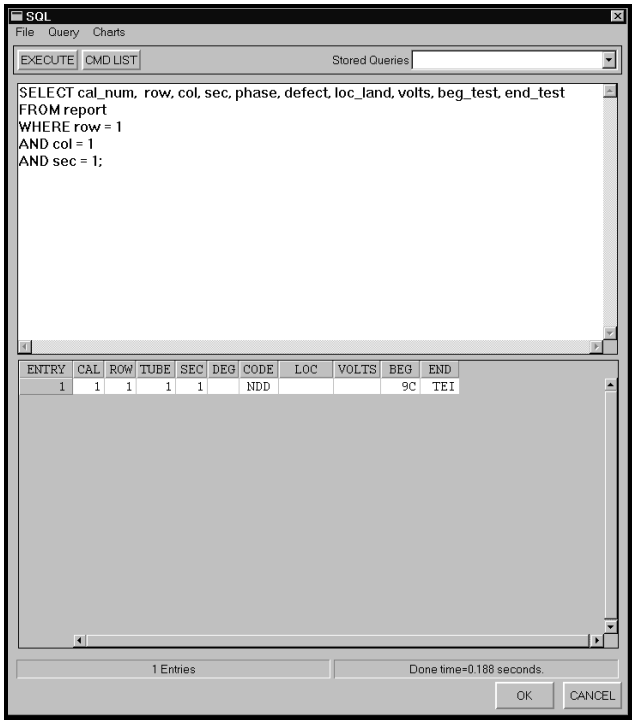



Figure 3-67. SQL Window

## PLANS Button

Selecting the PLANS button from the main DBMS window causes the Insp Plans dialog, shown in Figure 3-68, to appear. Features of the Insp Plans dialog are accessed by pull-down menus and drop-down lists. See the section devoted to the Inspection Plan Window below for a discussion of its parts and functions.

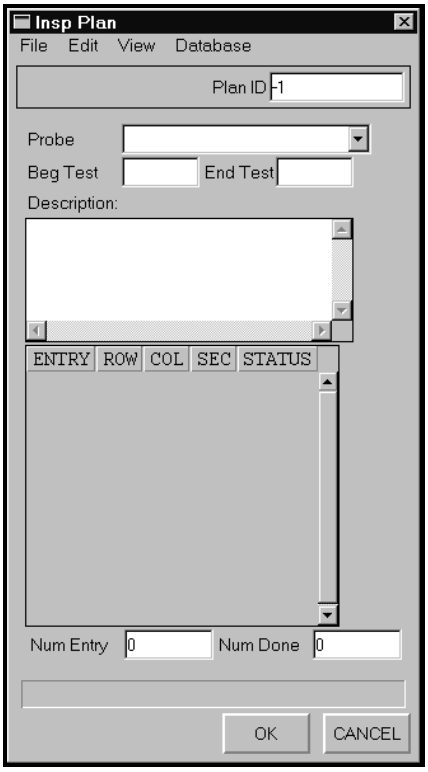



Figure 3-68. Inspection Plan Window

### TUBE SET Button

The TUBE SET button opens the Tube Set Window that allows users to create special tube sets that can be tracked separately. It might be used for looking at all tubes of a certain region or all tubes with a certain heat treat.

### Tube Set Window

The Tube Set Window is used to create tube lists that are stored in the *tube_set_entry* table of the database. Review figure 3-69 to familiarize yourself with the parts of the Tube Set Window.

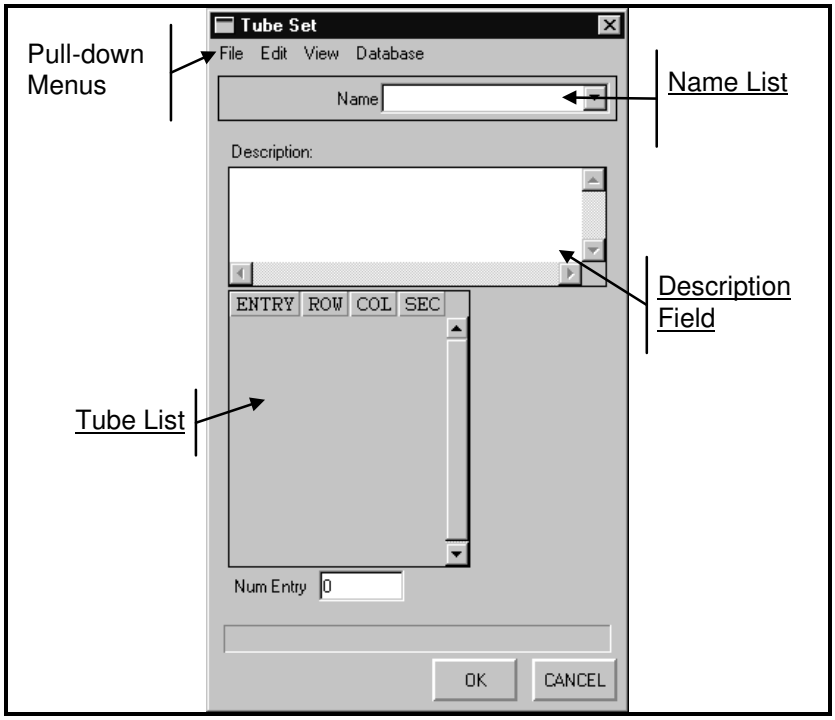



Figure 3-69. Tube Set Window

### File Menu

As shown in Figure 3-70, the File menu contains one (1) choice - File New.

Figure 3-70. Tube Set > File Menu

- Tube Set > File> File New clears the Tube List and Name List.

### Edit Menu

As shown in Figure 3-71, the Edit menu contains three (3) choices. They are Add Symbols, Add Selected and Clear List….

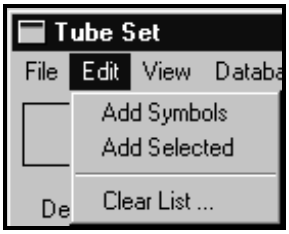



Figure 3-71. Tube Set > Edit Menu

- Tube Set > Edit > Add Symbols loads the current symbols showing on the map into the Tube List.

- Tube Set > Edit > Add Selected loads the tubes currently selected on the map into the Tube List.

- Tube Set > Edit > Clear List clears the Tube List. A warning will appear asking if you are sure you want to clear the list. Click YES to clear the list and NO to abort.

### View Menu

As shown in Figure 3-72, the View menu contains one (1) choice, Add To Map.

Figure 3-72. Tube Set > View Menu

- Tube Set > View > Add To Map places symbols on the map based on the Tube List.

### Database Menu

As shown in Figure 3-73, the Database menu contains two (2) choices. They are Upload Tube Set… and Delete Tube Set….

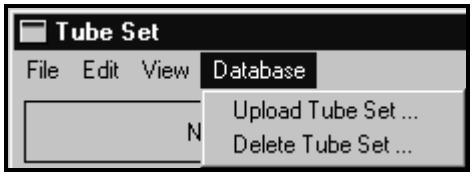



Figure 3-73. Tube Set > Database Menu

- Tube Set > Database > Upload Tube Set uploads the current Tube List to the *tube_set_entry* table of the database. A name must first be typed in the Name field. The tube set will be stored under this name and appear in the Name List drop-down. Remember that when querying tube sets, the *tube_set_entry* table should be queried.

- Tube Set > Database > Delete Tube Set deletes the current tube set from the *tube_set_entry* table in the database.

### Other Features

- Name List: A drop-down listing the names of stored tube sets. Choose a set and the tubes will appear in the Tube List.

- Description: A place to type comments that will be stored with each tube set. The text area will scroll to follow your typing.

## UPDATE Button

The UPDATE button works with maps stored with query fills. Query fills are described below. Once a map is opened, selecting UPDATE runs all the queries stored with the map against the latest data. The new results update the legend entries and symbols on the map.

So if you create a map at the beginning of the inspection with queries that you know you will need throughout the inspection, that map can be updated periodically to reflect the current database. This method can save much time and effort during and after an inspection.

### *SQL Window*

The most powerful attribute of DBMS is query capability. Users are given full advantage of **SQL**, *Standard Query Language*, to manipulate the database. Queries can be quite powerful and quite complex. A brief discussion of **SQL** is found in *Appendix B* of this manual, however, it is strongly recommended either to have some instruction or, at least, purchase one of the many books devoted to **SQL**.

Review Figure 3-74 to familiarize yourself with the **SQL Window**.

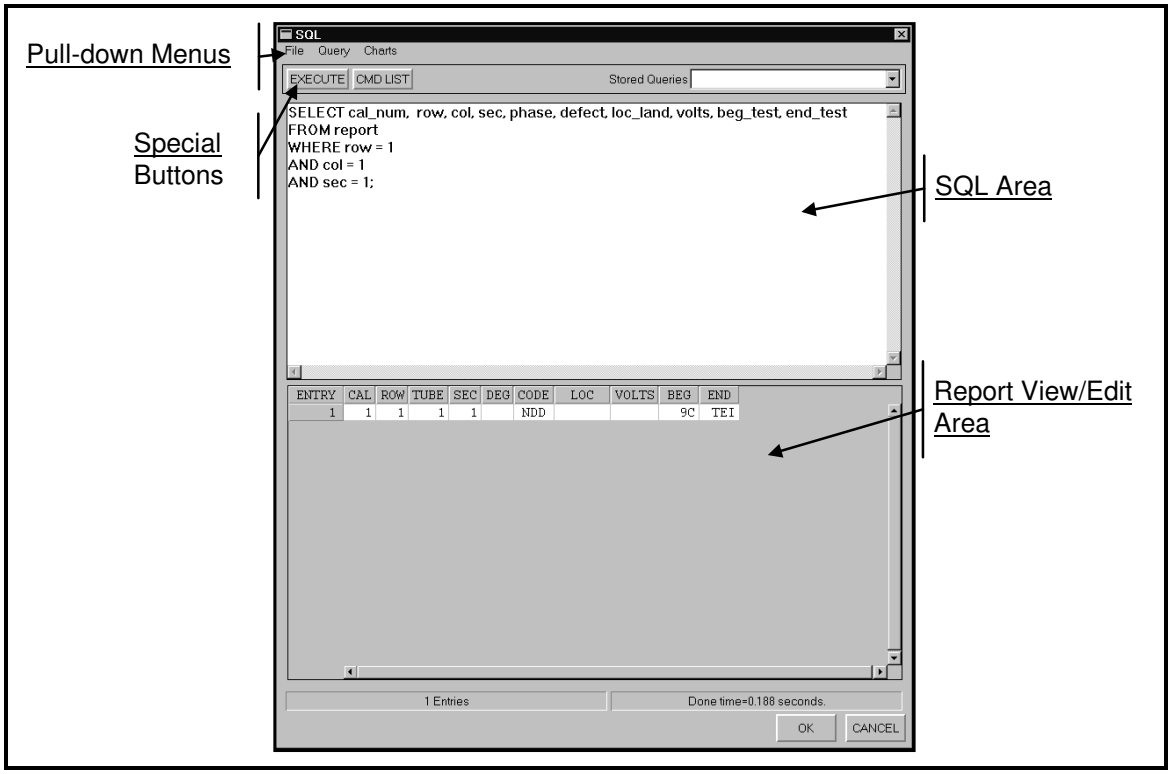



Figure 3-74. SQL Window

## SQL Window – Menu Items

### File Menu

As shown in Figure 3-75, the File menu contains eight (8) choices. They are Open…, Save, Save As…, Print Setup…, Print, Print Current Page…, Options Setup…, and Export To….

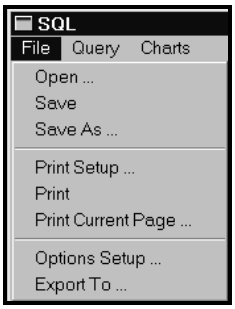



Figure 3-75. SQL > File Menu

- SQL > File > Open brings up an Open window defaulting to *\corestar\queries*. Select a *.qry* file from those listed and click the Open button. You can also double-click a file name as with any other Windows-type program. Afterwards, the program loads and displays the desired query in the SQL area of the window.

- SQL > File > Save automatically saves the current query to the directory and under the same file name as it was opened last. No warning or permission window comes up when this option is used to save a *.qry* file so be careful editing since the query you save will overwrite the previous one. If there is any reason you might need to reference the old query a good idea would be to use the File > Save As option to save the new query under a distinct name. If File > Save is selected for a query that has not previously been saved a Save As window is displayed and the instructions for File > Save As apply.

- SQL > File > Save As displays a Save As window shown in Figure 3-7. Type the desired name for the *.qry* file in the File name: field. There is no need to add the *.qry* extension to the name since the program will add it automatically. The default directory for *.qry* files is *\corestar\queries*.

- SQL > File > Print Setup opens a Print window like the one shown in Figure 3-9. Choose the settings you want for query report printouts. Select the desired printer to use in the Name drop-down box. Click the Properties button to modify the printer's parameters as desired, i.e., portrait, landscape, etc. Once all options are as you like click OK for the settings to be saved as the new default, otherwise click Cancel.

- SQL > File > Print prints the query report per the settings specified in Print Setup. No print window or warning appears. As soon as the Print option is selected, the report is sent to the printer.

- SQL > File > Print Current Page prints the page currently showing. The settings are chosen from the Print Setup option. No print window or warning appears. As soon as the Print option is selected, the report is sent to the printer.

- SQL > File > Options Setup is where you choose the headers, footers and margins for the printed report.

  There is one option for the Edit menu, shown in Figure 3-76, Set Defaults. Select Set Defaults and all colors and field options throughout the window will return to the default settings. Any text in the boxes, however, will remain unchanged.

Figure 3-76. Print Options > Edit Menu

The three tabs in the Options Setup window are Headers, Footers, and Options.
The options are the same for all parts of the Headers and Footers tabs.

- Font: Controls what font is used in this section. Fonts are listed in a pull-down menu. The font on the screen will not change, only on the printed copy.

- Size: Determines the font size. Clicking on the number increases the number while right-clicking decreases it.

- Align: Determines the alignment of the text. Clicking on the field will toggle between *Right*, right justification, *Left*, left justification, and *center*, center justification of the text.

- Spacing: Controls the spacing between the text lines of this section.

- Color: Shows the text color for that section. Right-click on the color box to select from an unlimited choice of colors.

## Headers Tab

There are three sections to the Headers Tab, Figure 3-77. They are Report Title, Report Header and Page Header.

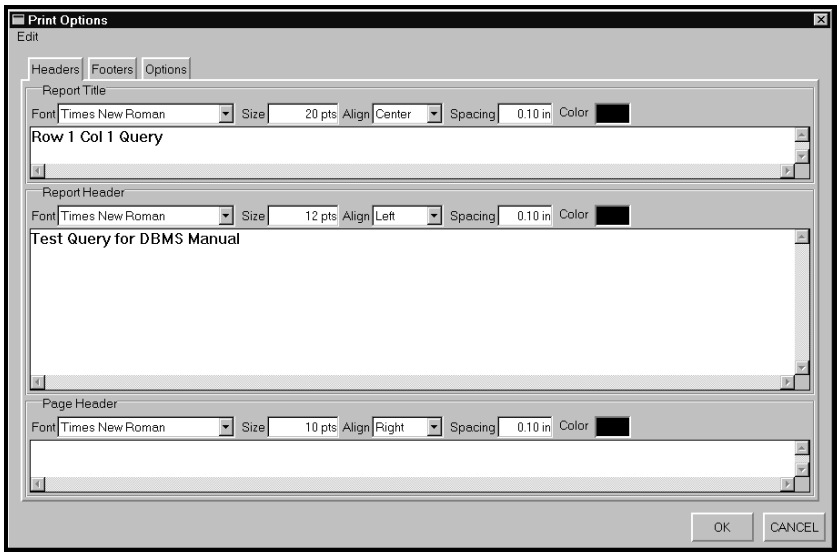



Figure 3-77. Print Options > Headers Tab

- **Report Title:** Main title of the report appearing once at the top of the first page.
- **Report Header:** A header that will appear once at the top of the first page.
- **Page Header:** A header that will appear at the top of each page of the report.

## Footers Tab

There are four sections to the **Footers Tab**, Figure 3-78. They are **Report Body, Page Footer, Report Footer** and **Report Version**.

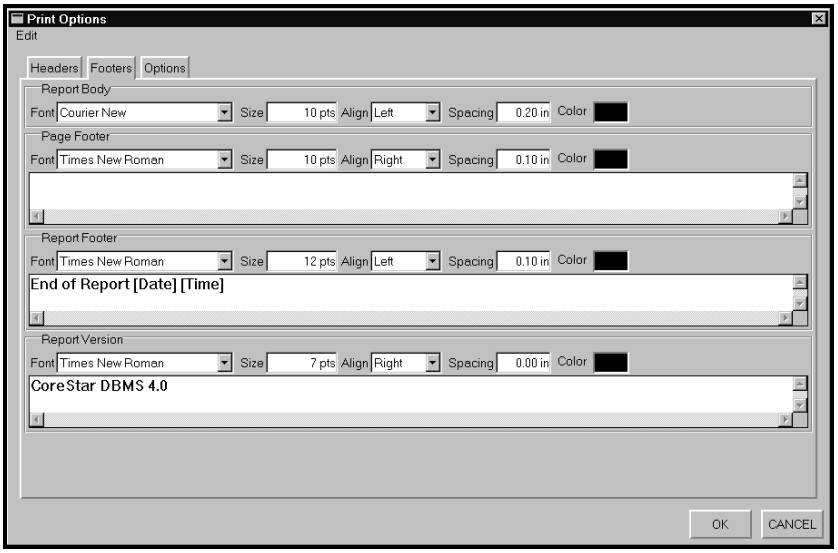



Figure 3-78. Print Options > Footers Tab

- **Report Body:** Controls the style of the main report body. A non-proportional font such Courier New is strongly recommended for this section.
- **Page Footer:** A footer that will appear at the bottom of each printed page.
- **Report Footer:** A footer that will appear once at the end of the last page of the report.
- **Report Version:** A tag for the software version that is placed at the bottom of each page.

**Options Tab**

There are five fields in the **Options Tab**, Figure 3-79. The page margins are controlled by the corresponding field. For example, **Left Margin** controls the margin on the left side of the page, **Top Margin** the margin on top of the page, etc.

**Draw Separators:** Lines separating the fields of the report will be drawn when this option is turned on. When selected the button will be green and depressed.

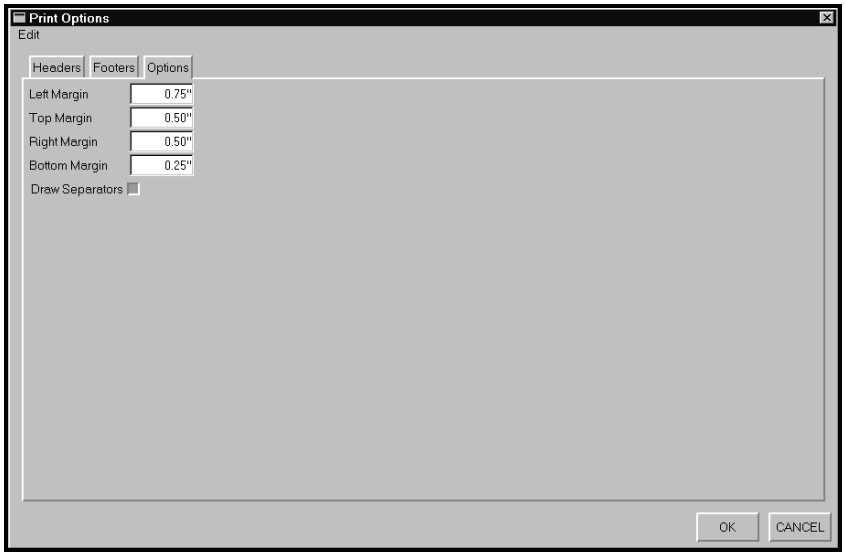



Figure 3-79. Print Options > Options tab

- Export To opens a Save As window defaulting to *\corestar\exports\queries*. The Export To option lets you save the SQL query typed in the SQL area of the Queries window as a text file. This makes for easy importing into other programs for reporting.

### Query Menu

As shown in Figure 3-80, the Query menu contains three (3) choices. They are Store, Store As… and Show Tables.

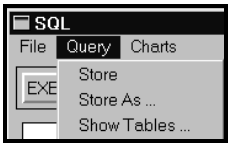



Figure 3-80. SQL > Query Menu

- SQL > Query > Store saves the query as part of the database in MS ACCESS. If the query was opened as a stored query, it will be saved under the same name. No warning or prompt will appear and the new query will overwrite the old. If there may be a need to reference the old query, it is a good idea to save the new query under a distinct name. If the query was not previously stored and Store is selected, an Enter New Query Name prompt comes up and the explanation of Store As applies.

  A *stored* query differs from a *saved* query. A *stored* query is part of a distinct database and can only be opened from within that database. A *saved* query is more general. It is saved to the *\corestar\queries* directory and can be opened from any database. To delete a *saved* query you can browse to the *\corestar\queries* directory and delete the desired *.qry* files. To delete a *stored* query you must connect to the database in MS ACCESS.

- SQL > Query > Store As stores a new query to the database select Store As and a Enter New Query Name prompt will appear. Type the desired name and click OK to store the query. Click CANCEL to abort the process. See above under Store for an explanation of *stored* queries vs. *saved* queries.

- SQL > Query > Show Tables calls up the Database Tables Window that gives a concise picture of the database structure. For successful queries, a good understanding of the database structure is needed. What tables are present, the fields within those tables and how all this is connected. As seen in Figure 3-81, on the left of the window are listed all the tables that make up the database. When you select a table, a list of fields for that table will appear on the right. In Figure 3-81, the *report* table is selected and the fields comprising the *report* table are listed on the right.

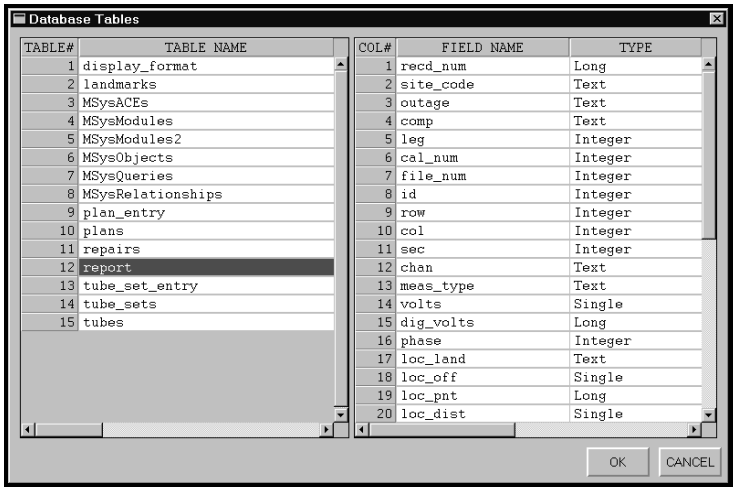



Figure 3-81. Database Tables Window

Table Name shows the names of tables as they would appear in a query. There are other fields on the right of the window. Using the scroll bar to view them, there are ATTRIB, DATE CREATED, LAST UPDATED, SOURCE TABLE and CONNECT STRING. These are informational fields and are not of use in the creation of queries.

Field Name shows the names of fields as they would appear in a query. Type shows what value would be used in a query for that field. For an explanation of the database structure or SQL queries, please see the appendices of this manual. There are other fields on this side of the window also. Using the scroll bar to view them, there are ATTRIB, SOURCE TABLE and SOURCE FIELD. These are informational fields and are not of use in the creation of queries.

### Charts Menu

As shown in Figure 3-82, the Charts menu contains one (1) choice - Show….

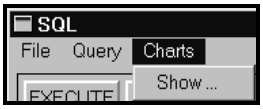



Figure 3-82. SQL > Charts Menu

- SQL > Charts > Show… creates a bar graph depicting the distribution of the query results. This feature is currently under development.

### Buttons

As shown in Figure 3-83, there are two buttons in the SQL window: EXECUTE and CMD LIST. Along with the buttons is a drop-down for Stored Queries. Below is a brief explanation of these features.

Figure 3-83. SQL > Buttons

- EXECUTE Button runs a query and results will be displayed in the View/Edit Area for *SELECT* queries. For *DELETE* or *UPDATE* queries, EXECUTE will run the query and make the changes to the database but nothing will be displayed in the View/Edit Area.

- CMD LIST Button toggles between queries ran in the SQL Window this user session. Either left or right-clicking on the button will move you through a history of queries as they appear in the SQL Area. Closing DBMS will clear the query history.

- Stored Queries Menu lists the queries stored to the database using Query > Store or Query > Store As explained above. As seen in Figure 3-84, choosing the query name in the pull-down menu will cause the query to appear in the SQL Area. If edits are done to the query and you wish to save it under the same name, use Query > Store. If you wish to store it under a distinct name, use Query > Store As. See Query > Store for an explanation of *stored* vs. *saved* queries.

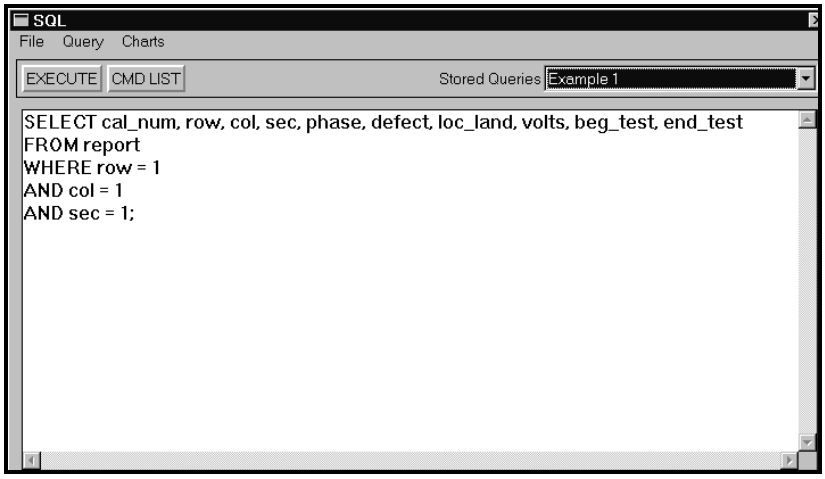



Figure 3-84. Restored Query

### View/Edit Area

This is area where SQL queries are displayed and edited. To help in editing, a right-click brings up a typical windows dialog with the editing options Undo, Cut, Copy, Paste, Delete and Select All. The Windows keyboard shortcuts for these options also are available. They are:

Ctrl+Z for Undo
Ctrl+X for Cut
Ctrl+C for Copy
Ctrl+V for Paste
Delete for Delete

### *Inspection Plan Window*

Familiarize yourself with the parts of the Insp Plans Window in Figure 3-85.

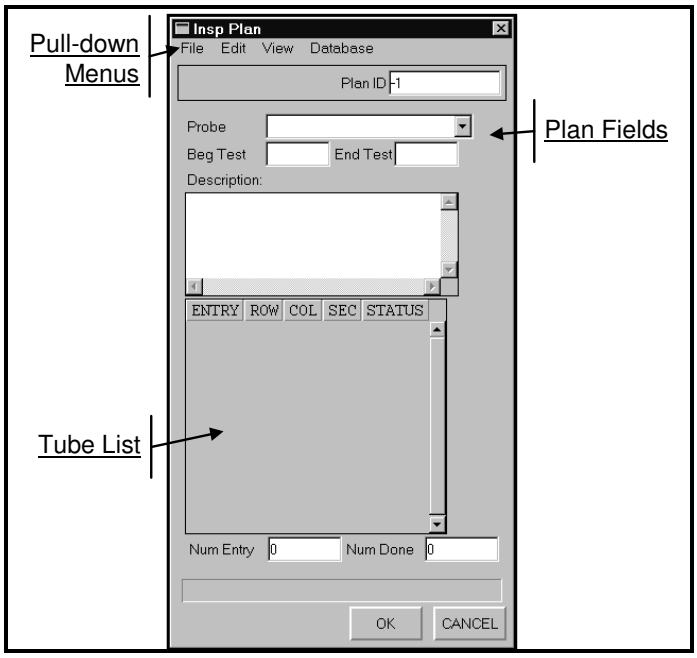



Figure 3-85. Inspection Plans Window

#### File Menu

As shown in Figure 3-86, the File menu contains four (4) choices. They are New Plan, Open, Save and Save As….

Figure 3-86. Plans > File Menu

- Insp Plan > File > New Plan Clears the tube list and sets the Plan ID to the next available number. This is the first step in creating a new inspection plan.

- Insp Plan > File > Open brings up an Open window defaulting to the *\corestar\plans* directory. These are *.pln* files used in the acquisition software. Plans are stored to the Plan_Entry table of the database. To open a plan from the database, right-click on the Plan ID field, a list of plans will appear then select an entry.

- Insp Plan > File > Save saves the plan as a *.pln* file to the *\corestar\plans* directory using information from the Inspection Display for the file name. The format of the file name is set. The format is:

  Site_Outage_Component_Plan Number

  These files are used by the acquisition software for data collection. The file name comes back to the DBMS by way of analysis reports. If you look at the Import Report section the same file name has been with the data from plan creation, through data collection, analysis and finally entry into the database. This is good example of the unity of the EddyVISION® suite.

- Insp Plan > File > Save As brings up a Save As window defaulting to the *\corestar\plans* directory. The plan is not automatically saved as with the Save option. Here you may type in a file name of your choice, but be aware of the file naming convention explained above. Save As is best used to re-save over a plan already saved. Once in the Save As window you can click on a file name above and save the new file under that name. This overwrites the old file with the new.

### Edit Menu

As shown in Figure 3-87, the Edit menu contains four (4) choices. They are Load Symbols, Load Selected, Clear Tubes… and Clear All….

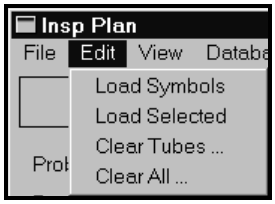



Figure 3-87. Plans > Edit Menu

- Insp Plan > Edit > Load Symbols loads the current symbols showing on the map into the Tube List.

- Insp Plan > Edit > Load Selected loads the tubes currently selected on the map into the Tube List.

- Insp Plan > Edit > Clear Tubes clears only the Tube List, leaving all other settings untouched.

- Insp Plan > Edit > Clear All clears the Tube List and all other fields in the Insp Plan dialog.

### View Menu

As shown in Figure 3-88, the View menu contains one (1) choice - Add To Map.

Figure 3-88. Plans > View Menu

- Insp Plan > View > Add To Map places symbols on the map based on the Tube List.

### Database Menu

As shown in Figure 3-89, the Database menu contains three (3) choices. They are Find Next ID, Upload Plan…, and Delete Plan….

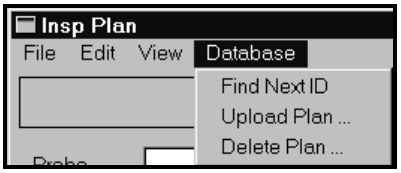



Figure 3-89. Plans > Database Menu

- Insp Plan > Database > Find Next ID places the next open plan number in the Plan ID field. It will be the next number after the highest numbered plan regardless if lesser plan numbers are open.

- Insp Plan > Database > Upload Plan loads the created plan from the Insp Plan Window into the plan_entry table of the database. This is different than *saving* a plan, which creates a *.pln* file stored in the *\corestar\plans* directory.

- Insp Plan > Database > Delete Plan deletes the current plan in the Insp Plans Window from the plan_entry table of the database. Even if the plan is deleted from this table it may still exist in the *\corestar\plans* directory as a *.pln* file. If the desire is to eliminate a plan, do not forget about the *.pln* file.

### Other Features

Besides the menus and Tube List there are several other options on the Insp Plans dialog.

- Plan ID is a unique number given to a plan. The software numbers plans sequentially. The number of plans that can be created is unlimited.

- Probe is a drop-box with the probes from EddyAdmin. It is optional to choose a probe *unless* Plan Requires Probe is selected from Options > Options Tab. In which case a probe must be selected in order to save a plan.

- Beg Test and End Test are linked to the landmarks saved with the component file when it was created. These fields are optional *unless* Plan Requires Extent is selected from Options > Options Tab. In which case, extents must be selected to save a plan.

- Description is a place to type comments that will be stored with the plan.

- Num Entry is the number of tubes in the tube list.

- Num Done will show the number of completed tubes for the plan if a *.pln* file is opened that was used in the acquisition software to collect data.

To print a list of inspection plans, right-click on the Plan ID field to bring up the inspection plan list. Under the File menu are the options Print and Print Setup.

### *Legend and Map Buttons*

The legend in the upper right of the DBMS screen lists the symbols on a map, their origin, their meaning and status. The special buttons above the legend and other features make creating maps easy. Figure 3-90 below shows the map buttons and offers a brief description of their functions.

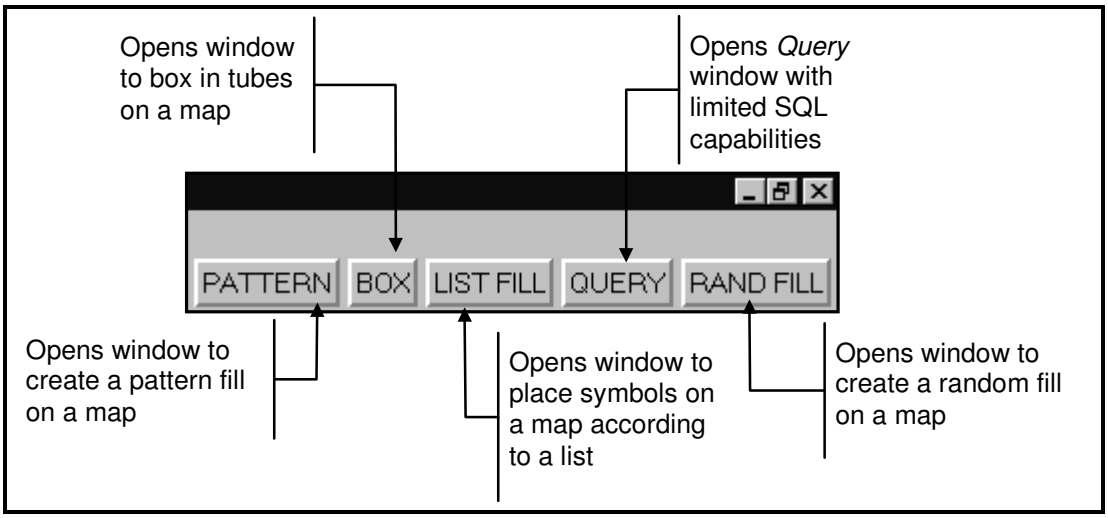



Figure 3-90. Special Map Buttons

This section deals with map building for planning and running an inspection or reporting results. In the Tutorial section, there are exercises to help better understand the tools discussed in this section.

An important part of displaying symbols on maps is selecting tubes. Remember that selected tubes are highlighted in gray on the screen. You can select tubes by Shift+clicking on the desired tubes, using the Edit menu from the main DBMS window or by right-clicking on the main work area you can call up the Pop-up menu. The Pop-up menu has the same choices as the Edit menu for selecting tubes along with other options. The pop-up menu will be discussed later.

## PATTERN Button

The PATTERN button, Figure 3-91, places symbols on a map in a uniform pattern within an area defined by the user. This can be helpful if an even sample of tubes is required across the component. There are three parts to the Pattern Fill window. They are Fill Mode, Options and Pattern.

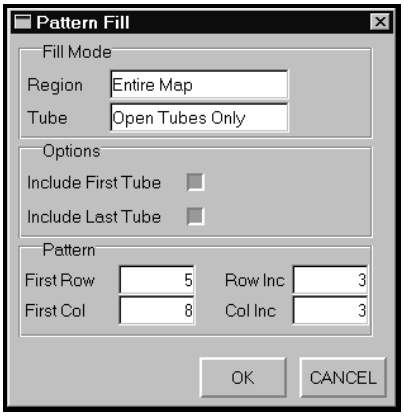



Figure 3-91. Pattern Fill Window

- Fill Mode determines what area of the component will be filled.
  - Region can be toggled by either clicking or right-clicking on the field box. Either *Entire Map,* to use all the tubes in the map as the fill population, or *Selected Tubes,* to use only the selected tubes on the map for the fill population, will be displayed.

  - Tube can also be toggled by either clicking or right-clicking on the field box. *Open Tubes Only* makes only tubes from the population without a symbol eligible for the pattern fill. *Symbols And Open* makes all tubes in the population eligible. *Symbols Only* makes only tubes from the population with symbols eligible.

- Options allows you to include the first and/or the last tube in each row in the pattern fill. This ensures these tubes have a symbol in them. Click the box next to the desired option to activate it. The box will appear green and depressed.

- Pattern selects parameters for the pattern.
  - First Row determines in which row will be the first row of the pattern.
  - First Col determines which column will be the first column of the pattern.
  - Row Inc determines how often the symbols will repeat by row. Every second row, third row, etc.
  - Col Inc determines how often the symbols will be repeated by column. Every second column, third column, etc.

Refer to the Pattern Fill window in Figure 3-91. The population is open tubes across the entire map. Both boxes are selected to include both the first and last tube in each row. The pattern should start in row 5, column 8, and repeat every third row and every third column. This resulting map is shown in Figure 3-92. Note the TYPE field in the legend reads PATTERN and the description shows that the pattern was *3x3*.

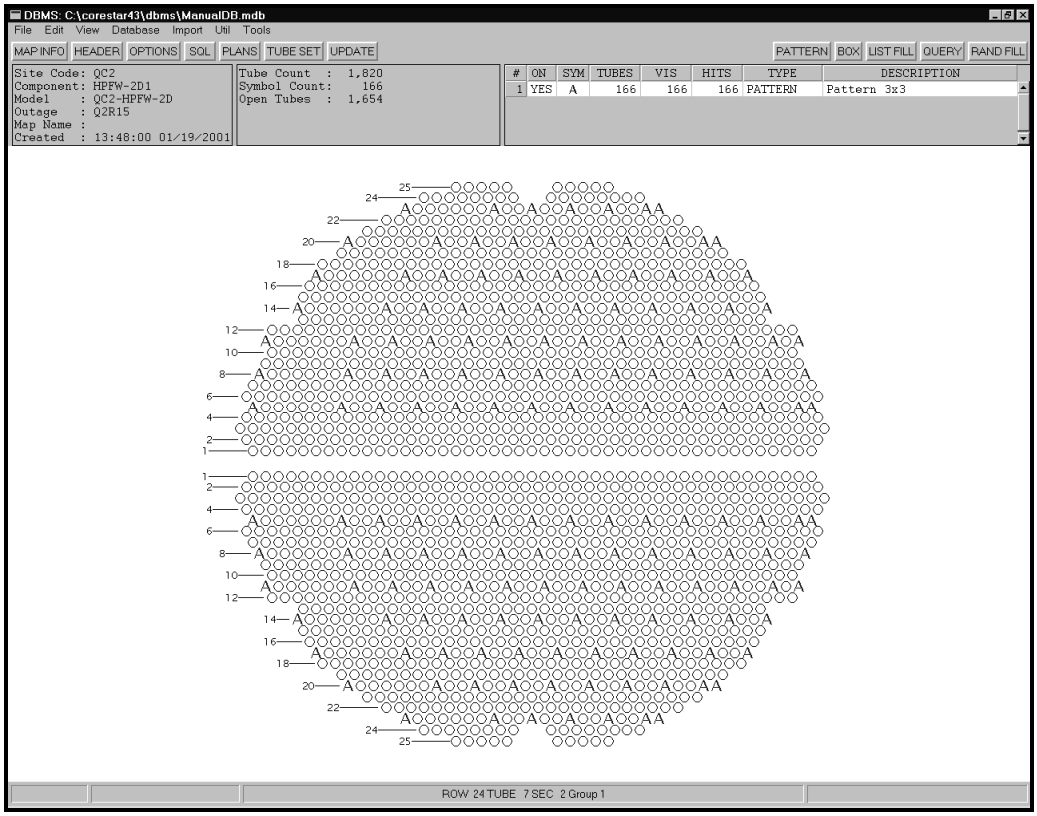



Figure 3-92. Map With Pattern Fill

## Legend

You can see in Figure 3-92 that the legend now has an entry in it. This is the legend for the printed map also. The legend prints all fields as seen on the screen for those lines with *YES* in the ON field. Each time a set of symbols is added to a map a new line is added to the legend. Use the scroll bar to view lines off the screen. There is no limit to the number of lines and they can be in any TYPE combination. Following is an explanation of the legend fields.

- ON: Either *YES* or *NO* will show in this field. *YES* means that the result of this line is currently showing on the map and will show on a printed copy. In the case of Figure 3-92, the pattern fill is shown on the map so the ON field reads *YES*.

- SYM: The symbol and color for this line in the legend. Lines added to the legend will default to the next letter of the alphabet. A, B, C ... To change the symbol, right-click on the symbol in the legend and a symbols window will appear. Right-click on the color box in the symbols window to change the color of the symbol. There are 144 symbols to choose from and an unlimited color selection.

- TUBES: The number of tubes effected in that line of the legend. This differs from HITS. If the line was a result of a query for an indication, there may be 70 indications in the component but they are all in 45 tubes.

- VIS: How many of the effected tubes currently have symbols from that line in the legend. How many tubes are currently VISible. As more lines are added to the legend, some results will overlap.

  Priority is given to the highest numbered line. So if line 1 and line 3 both place a symbol in the same tube, the symbol for line 3 will be visible.

  To move lines in the legend, Ctrl+click on the line number you want to move. You will get a crosshair. Drag the crosshair to the location you want and release the mouse button.

- HITS: This field is used with queries. This differs from TUBES. If a query looks for an indication, the result may be 100 indications, hits, in 50 tubes. In this case, you would see 50 symbols. Other than a query, lines will have matching HITS and TUBES fields.

- TYPE: What process created this line in the legend. In Figure 3-92 PATTERN shows in this field. It can also read QUERY, LIST FILL, BOX or RAND FILL.

- DESCRIPTION: Here you may type up to 26 characters describing the line. PATTERN, BOX and RAND FILL have default descriptions. PATTERN shows the *Row Inc* and *Col Inc* values in the Pattern Fill window. BOX indicates the radius selected. RAND FILL displays the percentage or number of tubes chosen. You can type over the default descriptions.

### BOX Button

The BOX button places symbols on a map boxing in selected tubes with a defined radius. Refer to Legend and Map Buttons, Main Window > Edit Menu or Pop-up Menu for help in selecting tubes. Clicking on the BOX button brings up the Box Fill window, Figure 3-93.

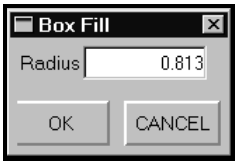



Figure 3-93. Box Fill Window

The Radius value describes what radius will be marked, starting from the center of the selected tubes and reaching outward. The default value is the ID, inside diameter, of a tube from the current component. That value is taken from the *.cmp* file created in the MakeComp program.

Chances are that the default value will not select all surrounding tubes within one row from the selected tubes. Increasing the Radius value by *0.5* before clicking OK on the Box Fill will usually produce the desired result.

The default Radius of *0.813* created the box fill shown in Figure 3-94. The fill is in the top left of the bottom section. This fill adds to the map in Figure 3-92 above. Note that not all of the tubes within one row of the selected tube have a symbol. Increasing the Radius value will *box in* additional tubes around the selected tubes.

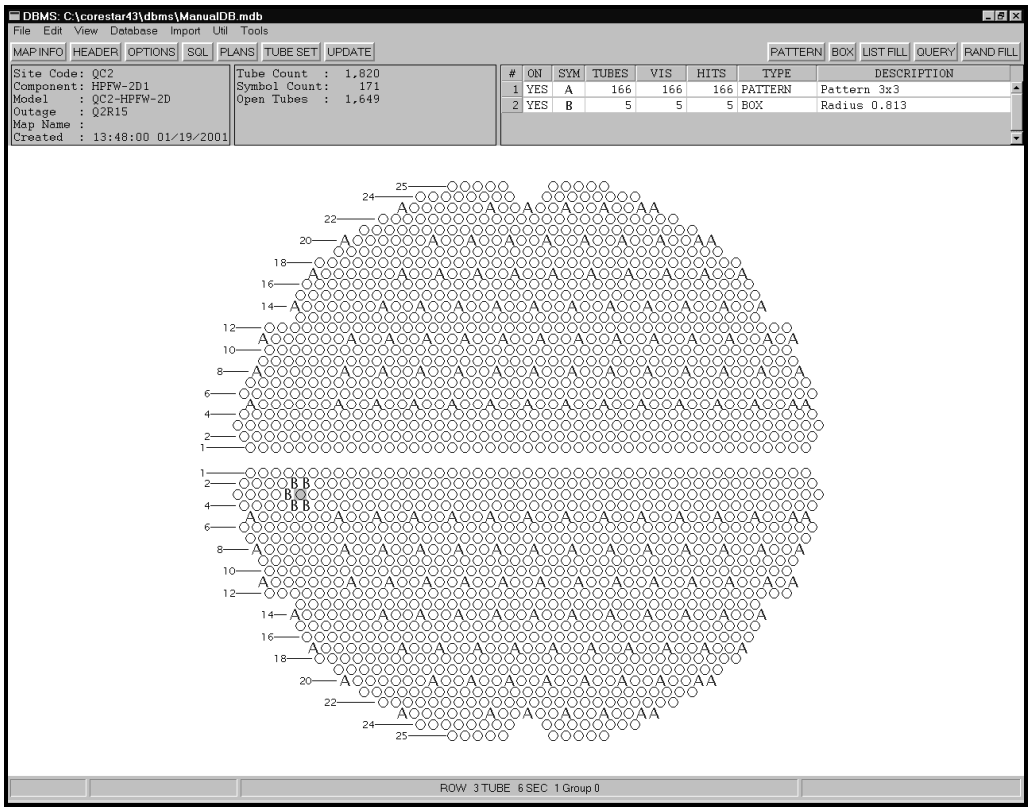
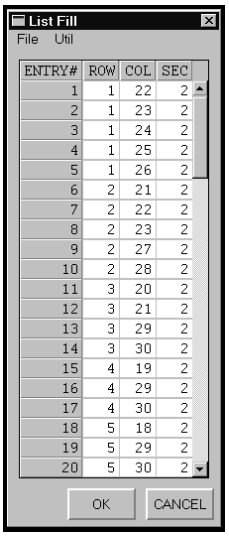



Figure 3-94. Map with Pattern and Box Fills

The new line in the legend has BOX in the TYPE field. The description is the radius used. This is the default description for BOX Fills. All tubes are visible since none are overlapping between the two legend entries.

## LIST FILL Button

The LIST FILL button allows you to place symbols on selected tubes or load in saved tube lists and place them on a map. After clicking on the LIST FILL button a List Fill dialog similar to the one in Figure 3-95 will appear. The window will be clear of tubes when it first opens. OK closes the window and places symbols on the tubes from the list. Default symbols are capital letters in sequential order. CANCEL closes the window and aborts the process. The two pull-down menus in the List Fill Window are File and Util.




| ENTRY# | ROW | COL | SEC |
|---|---|---|---|
| 1 | 1 | 22 | 2 |
| 2 | 1 | 23 | 2 |
| 3 | 1 | 24 | 2 |
| 4 | 1 | 25 | 2 |
| 5 | 1 | 26 | 2 |
| 6 | 2 | 21 | 2 |
| 7 | 2 | 22 | 2 |
| 8 | 2 | 23 | 2 |
| 9 | 2 | 27 | 2 |
| 10 | 2 | 28 | 2 |
| 11 | 3 | 20 | 2 |
| 12 | 3 | 21 | 2 |
| 13 | 3 | 29 | 2 |
| 14 | 3 | 30 | 2 |
| 15 | 4 | 19 | 2 |
| 16 | 4 | 29 | 2 |
| 17 | 4 | 30 | 2 |
| 18 | 5 | 18 | 2 |
| 19 | 5 | 29 | 2 |
| 20 | 5 | 30 | 2 |

Figure 3-95. List Fill Window

File Menu

As shown in Figure 3-96, there is only one (1) choice on the File Menu - Load file…. This allows you to import a saved tube list created in either the PLANS or TUBE SET dialogs. An Open window will default to the *\corestar\tubelist* directory. Either double-click on the desired list or click once on the file and then on Open to load in the tube list.

Figure 3-96. List Fill > File Menu

Util Menu

As shown in Figure 3-97, there is only one (1) choice on the Util Menu - Load selected …. This allows you to load tubes currently selected as a tube list and place symbols on them.

Rev 4.x of the software does not have an option to save the list from this window. To save the list you must use Main Window > Util > Store Tube List.

Figure 3-97. List Fill > Util Menu

Any number or pattern of tubes may be selected. Again, see Legend and Map Buttons, Main Window > Edit Menu or Pop-up Menu for help in selecting tubes. The list in Figure 3-95 was created by loading in selected tubes. Adding this list to the map used in Figures 3-92 and 3-94 gives us the map in Figure 3-98.

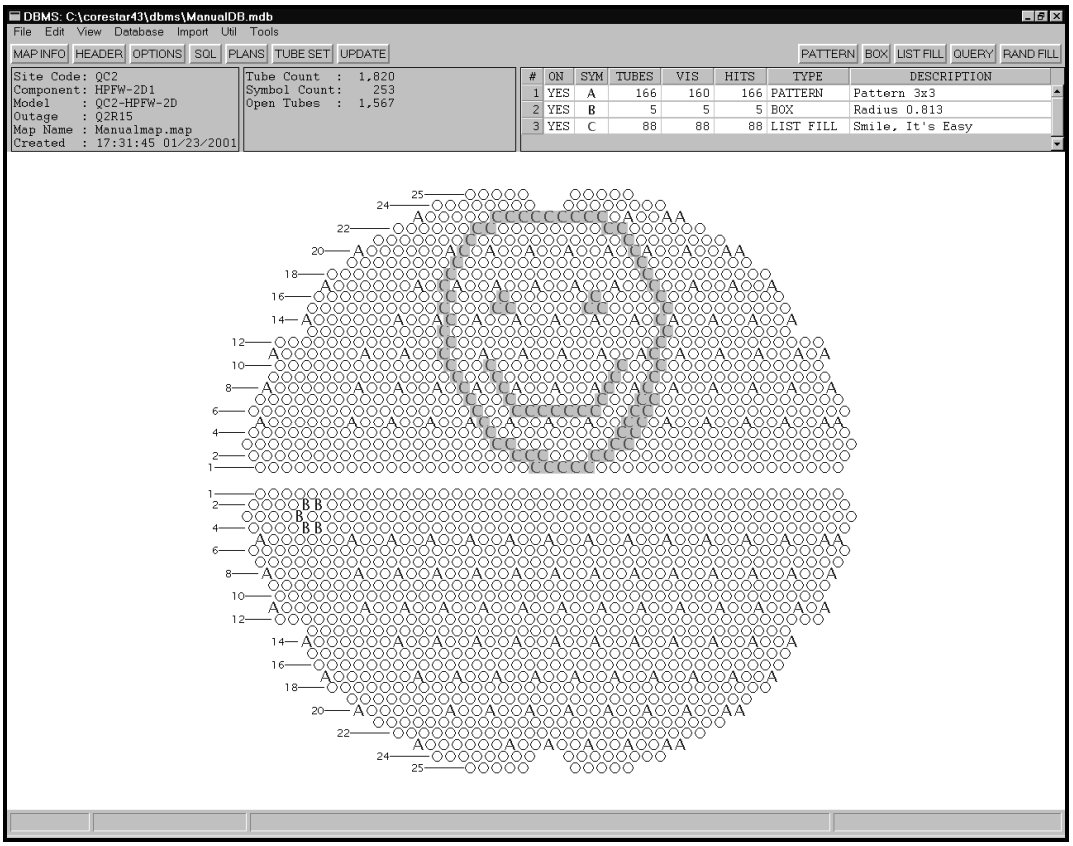



Figure 3-98. Map with Pattern, Box and List Fills

Note that the new line in the legend has LIST FILL in the TYPE field. There is no default description for List Fill. Up to 26 characters can be typed in the DESCRIPTION field, enough for a few words of encouragement.

All the tubes of the LIST FILL are visible, however, now six of the tubes from the PATTERN line are not visible. This is because some of the tubes in the LIST FILL over lap the tubes in the PATTERN FILL. The LIST FILL line has priority so the symbol for this line appears on the map. To move the legend lines and change priority, Ctrl+click on the number of the line you want to move and drag the crosshairs to the new location.

## QUERY Button

Selecting the QUERY button from the main DBMS window causes the Queries Window, shown in Figure 3-99, to appear. Features of the Queries Window are accessed by pull-down menus, special buttons or found in the view/edit area. See the section devoted to the Queries Window for a discussion of its parts and functions.

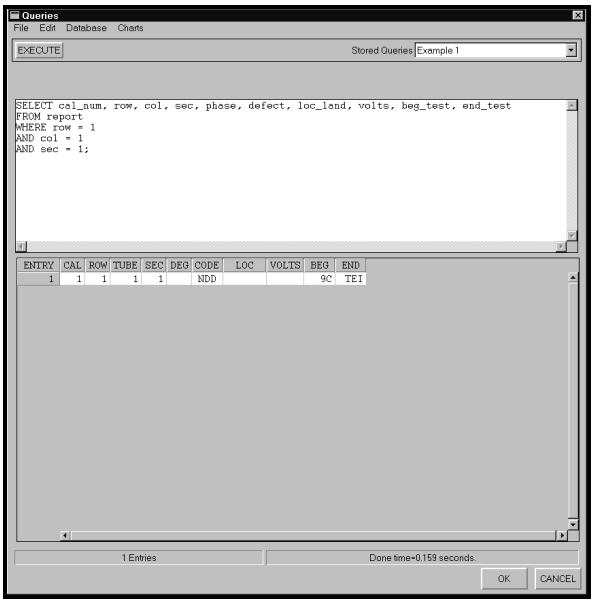



Figure 3-99. Queries Window

## RAND FILL Button

The RAND FILL button randomly places symbols on a map based on a percentage or a given number of tubes.

As seen in Figure 3-100, the Rand Fill Window is made up of three sections: Fill Mode, Seed Value and Scope.

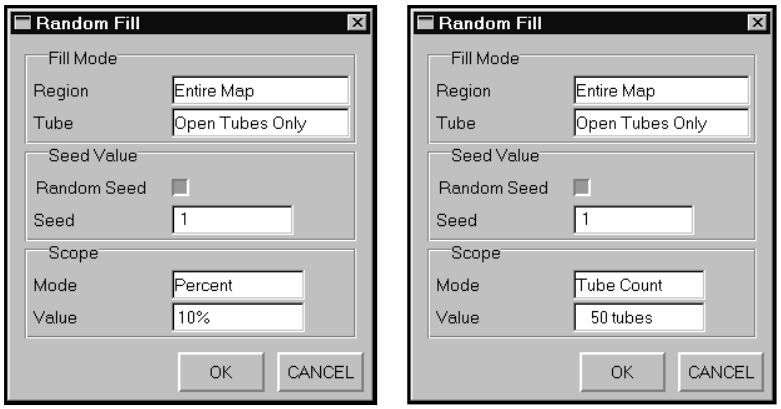



Figure 3-100. Random Fill Window in Percent and Tube Count Mode

- Fill Mode determines what area of the component will be filled.

  - Region can be toggled by either clicking or right-clicking on the field box. Either *Entire Map,* to use all the tubes in the map as the fill population, or *Selected Tubes,* to use only the selected tubes on the map for the fill population, will be displayed.

  - Tube can also be toggled by either clicking or right-clicking on the field box. *Open Tubes Only* makes only tubes from the population without a symbol eligible for the random fill. *Symbols And Open* makes all tubes in the population eligible. *Symbols Only* makes only tubes from the population with symbols eligible.

- Seed Value determines whether the pattern is repeatable or not. It is an effective tool for repeating a random fill pattern in multiple, yet identical, components.

  - Random Seed when turned on creates an original, random pattern based on the preferences set in the other sections of the Random Fill window. When Random Seed is active the box will be depressed and green. When Random Seed is turned off the pattern is repeatable and attached to the number selected in the seed field.

- Seed number refers to a specific random fill pattern done with Random Seed turned off. Refer to Figure 3-101 as an example. A fill of 20% of the entire map for open tubes and tubes with symbols. Random Seed is turned off and the Seed number is 2.

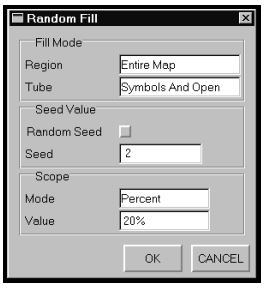



Figure 3-101. Random Seed Example

The pattern that is created will repeat each time Random Seed is off and the Seed number is 2. If a *Tube Count* fill is selected with the Seed number 2, the pattern will repeat as much as it can. Likewise, if 10% is selected only half the tubes will repeat. Thirty percent will repeat the pattern and add more symbols.

Remember that for this feature to work correctly the Fill Mode selections have to be the same as when the Seed was created.

o Scope determines the scope of the random fill.

- Mode will either be *Percent*, if the number of symbols to be put on the map is a percentage of the population, or *Tube Count*, if the number of tubes to be placed on the map is a predetermined number.

- Value defines how many symbols will be placed on the map. If the Mode is *Percent* then a percent value shows in this field. If the Mode is *Tube Count* a number of tubes shows in this field. To increase the number click on the field. To decrease the number right-click on the field. By holding down the Shift key while either clicking or right-clicking will change the value in increments of ten.

After setting the RAND FILL options, clicking OK executes the random fill. Figure 3-102 shows the map from the fill examples above with the random fill added.

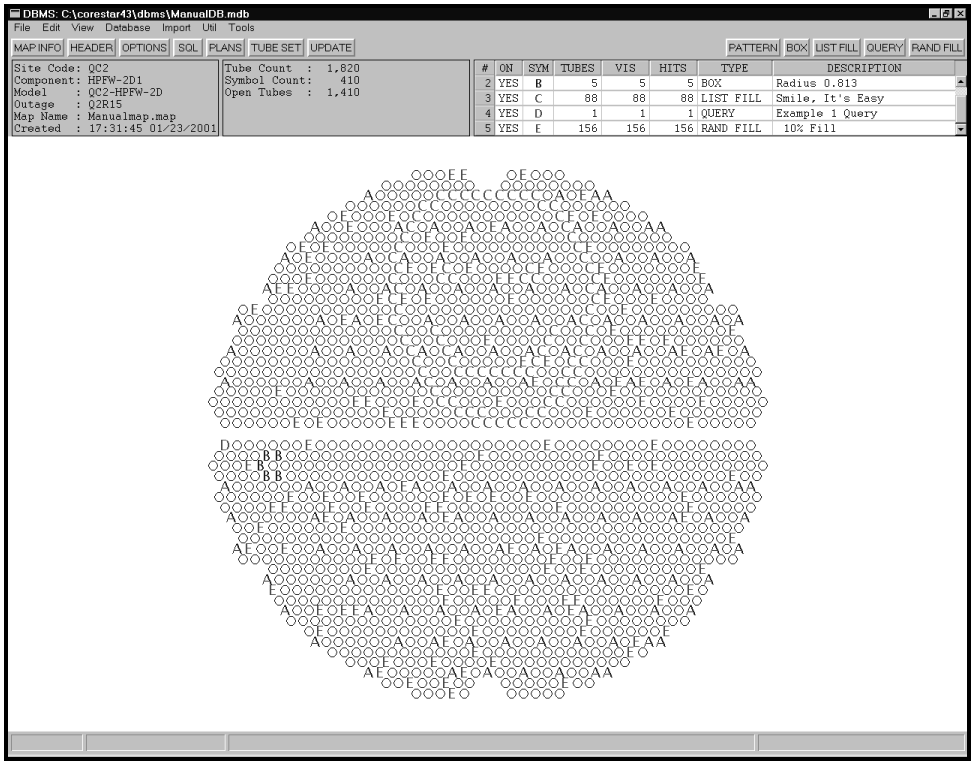



Figure 3-102. Map with Pattern, Box, List, Query and Random Fills

The new line in the legend has **RAND FILL** in the **TYPE** field and the default description for a percent random fill shows that it was a 10 percent fill.

In Figure 3-103 a **RAND FILL** with **Tube Count** selected as the *Mode* on the **Random Fill** window has been added to the map above. In addition, some of the legend lines have been turned off by **clicking** in the **ON** so that **NO** appears. The symbols for the lines turned off as well as the legend lines themselves will not appear on the printed copy of the map. The entries still exist and will always be stored with the map. To see the symbols again you only need **click** the **ON** field again so that **YES** appears.

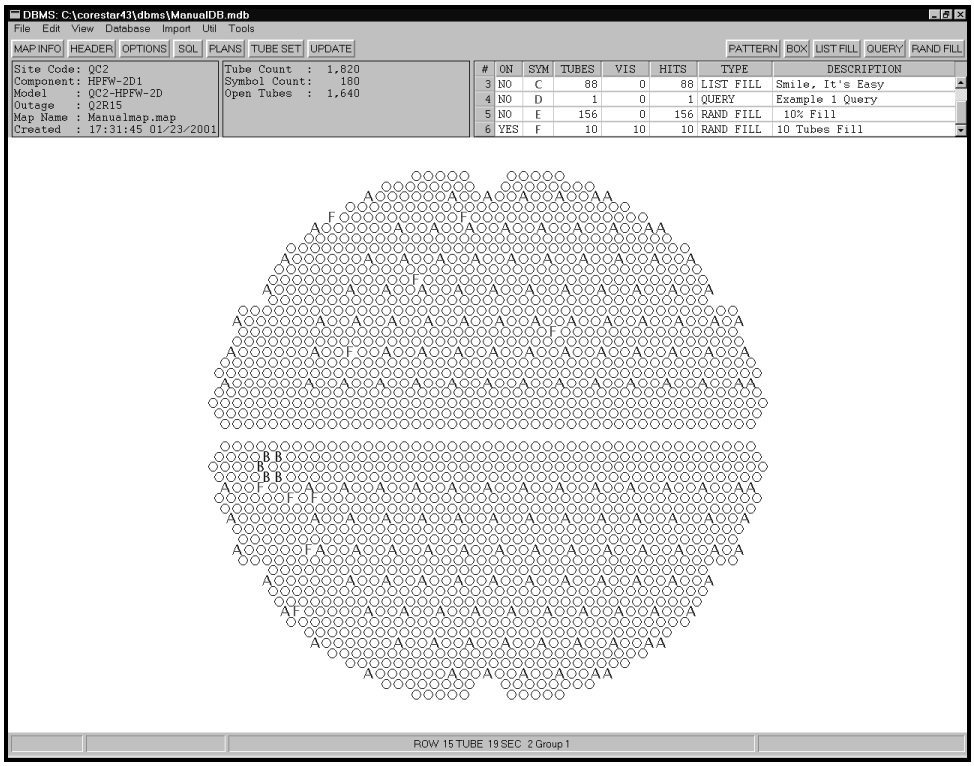



Figure 3-103. Map with Legend Entries Turned Off

A reminder about the priority of the legend lines. As more and more entries fill the legend some symbols are bound to overlap in the same tube. The legend entry with the highest line number has priority and the symbol for that line will be placed in the tube. As an example, the top section of the component is selected and two identical **LIST FILLS** are ran so that all the tubes in the top section are selected twice.

In Figure 3-104, all the tubes in the top section have a “B” in them because the second entry has priority over the first. To change the priority of the legend entries the lines need to be moved. **Ctrl+click** on the line number changes the cursor to a crosshair. Drag the crosshair to the new line position and release the left mouse button. Figure 3-105 shows the effects of changing the legend entries. Now the entries are switched in the legend and all tubes in the top section have an “A” in them.

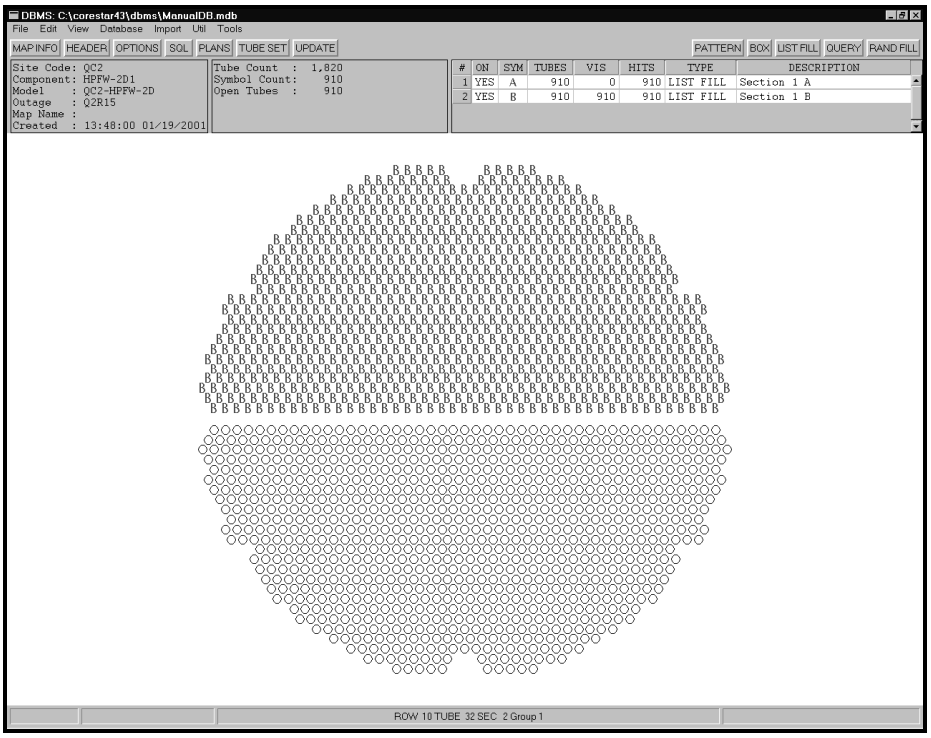



Figure 3-104. Map With Priority Normal

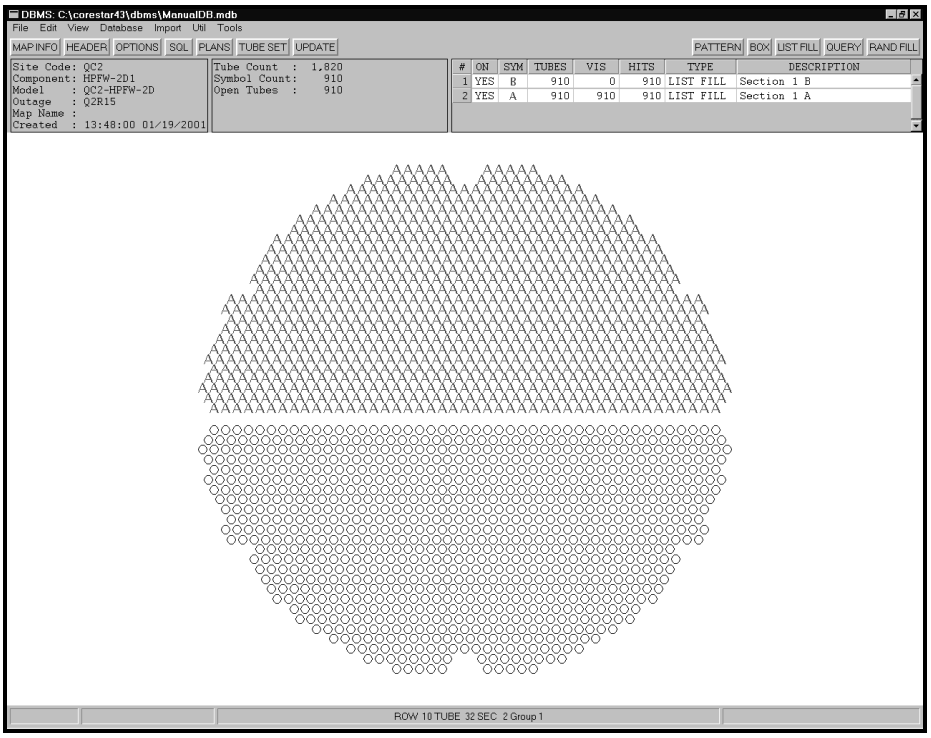



Figure 3-105. Map With Priority Reversed

### *Queries Window*

The QUERY button opens a Queries Window like the one in Figure 3-106. Although it is very similar to the SQL Window, there are important differences. The Queries Window only permits *SELECT* queries. Advanced queries to change the database must be done in the SQL Window or MS ACCESS. In addition, the Queries Window has a query builder tool to help you become accustomed to working with SQL.

This section only explains the features of the Queries Window. SQL is discussed in *Appendix B*.

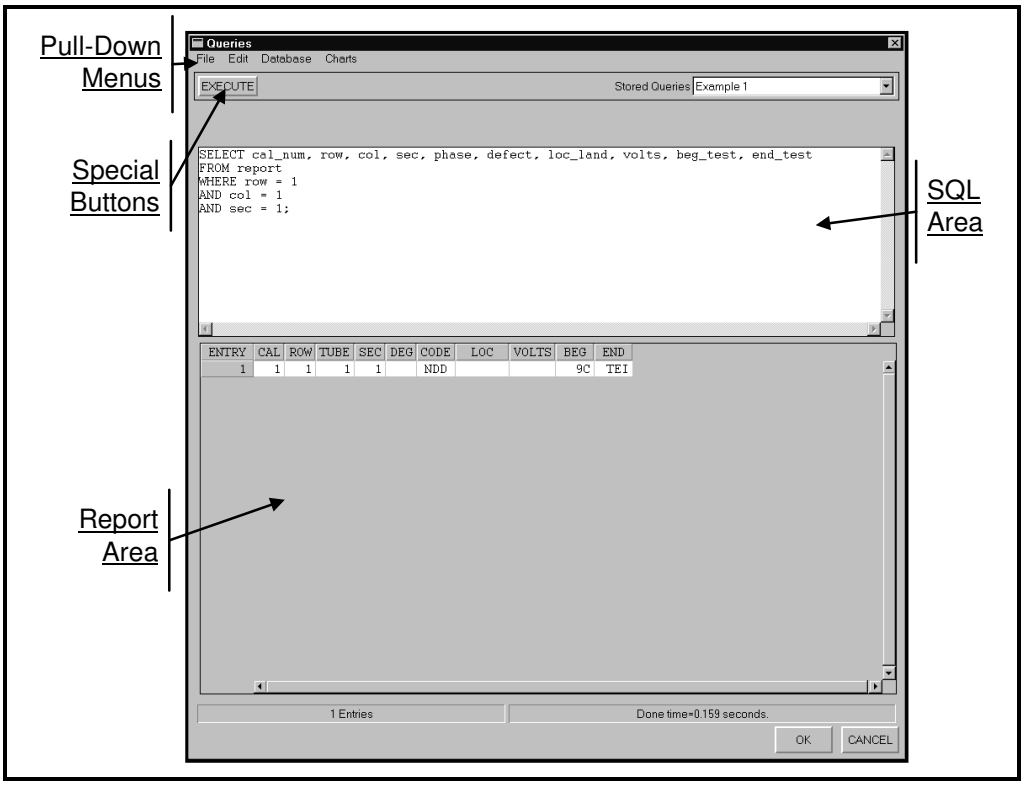



Figure 3-106. Queries Window

The pull-down menus of the query window are File, Edit, Database, and Charts.

## File Menu

As shown in Figure 3-107, the File menu contains seven (7) choices. They are Open…, Save, Save As…, Export To…, Print Setup.., Print, and Print Current Page.

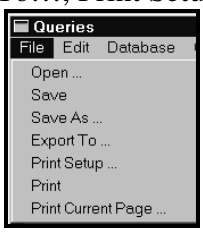



Figure 3-107. QUERY > File Menu

- Queries > File > Open brings up an Open window defaulting to *\corestar\queries*. Select a *.qry* file from those listed and click the Open button. You can also double-click a file name as with any other Windows-type program. Afterwards, the program loads and displays the desired query in the SQL area of the queries window.

- Queries > File > Save automatically saves the current query to the directory and under the same file name as it was opened last. No warning or permission window comes up when this option is used to save a *.qry* file so be careful editing since the query you save will overwrite the previous one. If there is any reason you might need to reference the old query a good idea would be to use the File > Save As option to save the new query under a distinct name. If File > Save is selected for a query that has not previously been saved a Save As window is displayed and the instructions for File > Save As apply.

- Queries > File > Save As displays a Save As window shown in Figure 3-7. Type the desired name for the *.qry* file in the File name: field. There is no need to add the *.qry* extension to the name since the program will add it automatically. The default directory for *.qry* files is *\corestar\queries*.

- Queries > File > Export To opens a Save As window defaulting to *\corestar\exports\queries*. The Export To option allows you to save the query results in the Report Area of the Queries window as a text file. This makes for easy importing into other programs for reporting.

- Queries > File > Print Setup opens a Print window like the one shown in Figure 3-9. Choose the settings you want for query report printouts. Select the desired printer to use in the Name drop-down box. Once all options are as you like click OK for the settings to be saved as the new default, otherwise click Cancel.

- Queries > File > Print prints the query report per the settings specified in Print Setup. No print window or warning appears. As soon as the Print option is selected, the report is sent to the printer.

- Queries > File > Print Current Page prints the page currently showing. The settings are chosen from the Print Setup option. No print window or warning appears. As soon as the Print option is selected, the report is sent to the printer.

## Edit Menu

As shown in Figure 3-108, the Edit menu contains three (3) choices. They are Clear, Options…, and Options Setup….

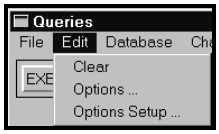



Figure 3-108. QUERY > Edit Menu

- Queries > Edit > Clear clears the SQL area of the Queries window. Make sure any work that you don't want to lose is saved.

- Queries > Edit > Options allows you to specify how much information is displayed in the Queries window.

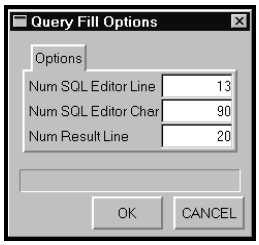



Figure 3-109. Query Fill Options Window

A description of the Query Fill Options window, as seen in Figure 3-109, follows:

Num SQL Editor Line: Refers to the number of lines displayed in the SQL Area of the Queries window. The default is 15 lines. To increase the number, place the cursor over the field and click. To decrease the number, place the cursor over the field and right-click. By holding down the Shift key while clicking or right-clicking the number changes in increments of ten. The minimum number of lines is 5, the maximum 30.

Num SQL Editor Char: Refers to the number of characters displayed in each line of the SQL Area in the Queries window. The default is 80 lines. To increase the

number, place the cursor over the field and click. To decrease the number, place the cursor over the field and right-click. By holding down the Shift key while clicking or right-clicking the number changes in increments of ten. The minimum number of lines is 50, the maximum 120.

Num result Line: Refers to the number of lines displayed in the Report Area of the Queries window. The default is 15 lines. To increase the number, place the cursor over the field and click. To decrease the number, place the cursor over the field and right-click. By holding down the Shift key while clicking or right-clicking the number changes in increments of ten. The minimum number of lines is 5, the maximum 40.

- Queries > Edit > Options Setup is where you choose the headers, footers and margins for the printed report.

  As shown in Figure 3-110, there is only one (1) option for the Edit menu - Set Defaults. Choose Set Defaults and all colors and field options throughout the window will return to the default settings. Any text in the boxes, however, will remain unchanged.

Figure 3-110. Print Options > Edit Menu

The three (3) tabs in the Options Setup window are Headers, Footers, and Options. These option fields are the same for all parts of the Headers and Footers tabs as described below:

- Font: Controls what font is used in this section. Fonts are listed in a pull-down menu. The font on the screen will not change, only on the printed copy.

- Size: Determines the font size. Clicking on the number increases the number while right-clicking decreases it.

- Align: Determines the alignment of the text. Clicking on the field will toggle between *Right*, right justification, *Left*, left justification, and *center*, center justification of the text.

- Spacing: Controls the spacing between the text lines of this section.

- Color: Shows the text color for that section. Right-click on the color box to select from an unlimited choice of colors.

**Headers Tab**

There are three sections to the Headers Tab, Figure 3-111. They are Report Title, Report Header and Page Header.

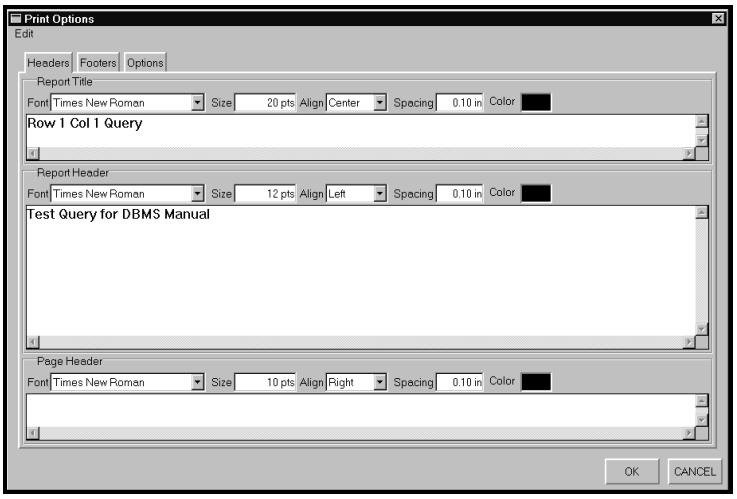



Figure 3-111. Print Options > Headers Tab

- **Report Title:** Title of the report appearing once at the top of the first page.

- **Report Header:** A header that will appear once at the top of the first page.

- **Page Header:** A header that will appear at the top of each page of the report.

Footers Tab

There are four sections to the Footers Tab, Figure 3-112. They are Report Body, Page Footer, Report Footer, and Report Version.

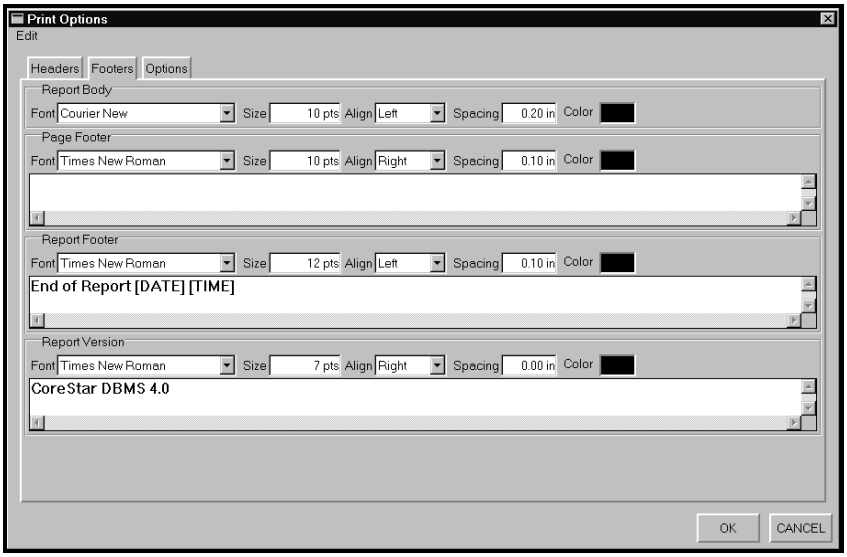



Figure 3-112. Print Options > Footers Tab

- **Report Body:** Controls the style of the main report body.
- **Page Footer:** A footer that will appear at the bottom of each printed page.
- **Report Footer:** A footer that will appear once at the end of the last page of the report.
- **Report Version:** A tag for the software version that is placed at the bottom of each page.

Options Tab
There are five (5) fields in the Options Tab, Figure 3-113. The page margins are controlled by the corresponding field. For example, Left Margin controls the margin on the left side of the page, Top Margin the margin on top of the page, etc.

Draw Separators: Lines separating the columns of the report will be drawn when this option is turned on. When turned on the button will turn green. This function is similar to Form On using DDA-4 analysis software.

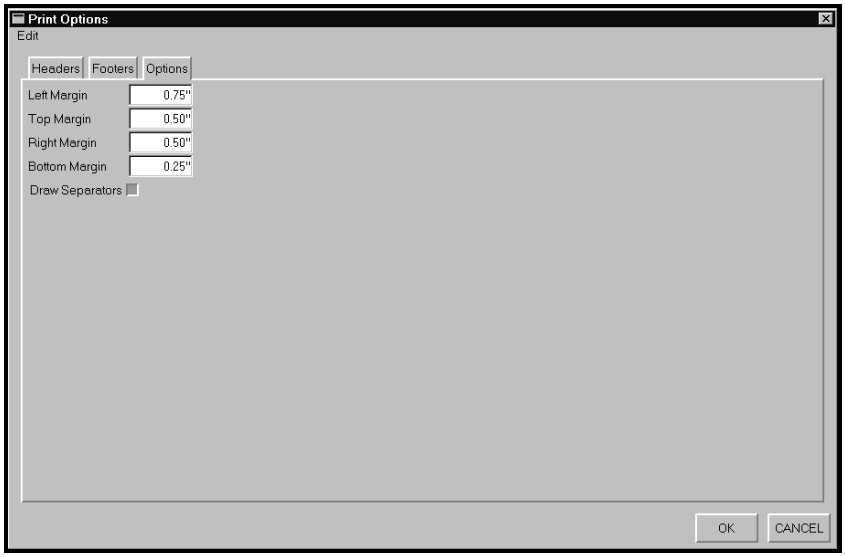



Figure 3-113. Print Options > Options tab

### Database Menu

As shown in Figure 3-114, the Database menu contains four (4) choices. They are Store Query, Store Query As…, Show Tables…, and Query Builder.

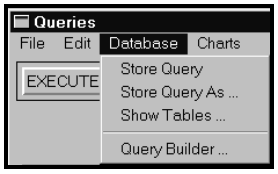



Figure 3-114. QUERY > Database Menu

- Store Query: Saves the query as part of the database in MS ACCESS. If the query was opened as a stored query, it will be saved under the same name. No warning or prompt will appear and the new query will overwrite the old. If there may be a need to reference the old query, it is a good idea to save the new query under a distinct name. If the query was not previously stored and Store Query is selected, an Enter New Query Name prompt comes up and the explanation of Store Query As applies.

  A *stored (internal)* query differs from a *saved* query. A *stored* query is part of a distinct database and can only be opened from within that database. A *saved (external)* query is more general. It is saved to the *\corestar\queries* directory and can be opened from any database. To delete a *saved* query you can browse to the *\corestar\queries* directory and delete the desired *.qry* files. To delete a *stored* query you must open the database in MS ACCESS.

- Store Query As: To store a new query to the database select Store Query As and an Enter New Query Name prompt will appear. Type the desired name and click OK to store the query. Click CANCEL to abort the process. See above under Store Query for an explanation of *stored* queries vs. *saved* queries.

- Show Tables: For successful queries, a good understanding of the database structure is needed. What tables are present, the fields within those tables and how all this is connected. Show Tables calls up the Database Tables Window that gives a concise picture of the database architecture. As seen in Figure 3-115, on the left of the window are listed all the tables that make up the database. When you select a table a list of fields for that table will appear on the right. In Figure 3-115 the *report* table is selected and the fields comprising the *report* table are listed on the right.

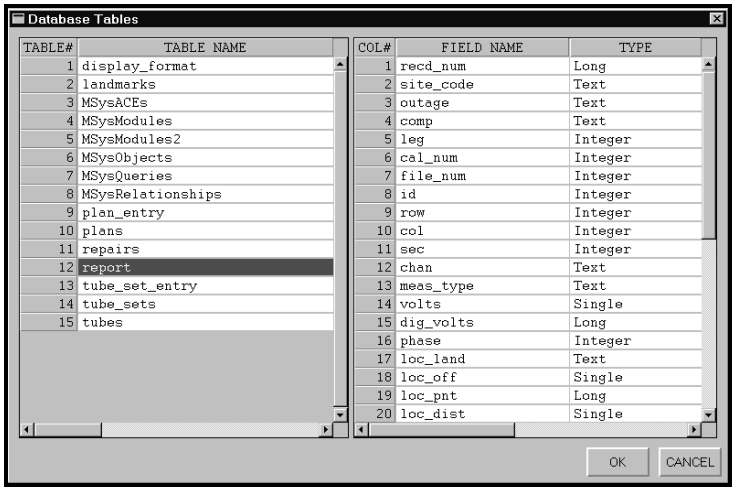



Figure 3-115. Database Tables Window

Table Name shows the names of tables as they would appear in a query. There are other fields on the right of the window. Using the scroll bar to view them, there are ATTRIB, DATE CREATED, LAST UPDATED, SOURCE TABLE and CONNECT STRING. These are informational fields and are not of use in the creation of queries.

Field Name shows the names of fields as they would appear in a query. Type shows what value would be used in a query for that field. For an explanation of the database structure or SQL queries please see the appendices of this manual. There are other fields on this side of the window also. Using the scroll bar to view them, they are ATTRIB, SOURCE TABLE and SOURCE FIELD. These are informational fields and are not of use in the creation of queries.

- Query Builder: SQL queries can be intimidating. To help simplify the process of writing basic queries the Query Builder tool can be used. As seen in Figure 3-116, there is one choice from the Edit menu, Clear. This clears the SQL area of the window without disturbing the choices above. The Query Builder window has selections for the SQL commands *FROM, SELECT, WHERE*, and *ORDER BY*.

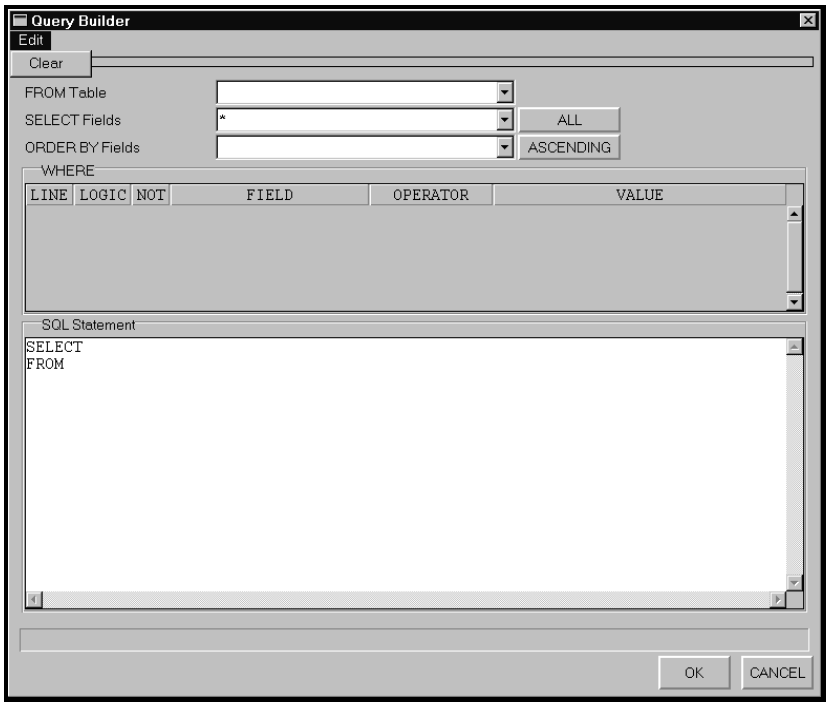



Figure 3-116. Query Builder Window

The FROM Table pull-down menu is where you select the table to query in the database. When selected the table name appears in the SQL area at the bottom of the window in the *FROM* line of the query.

The SELECT Fields pull-down menu will only have asterisk '*', meaning "all fields", until a table is selected. Then all the fields in that table will be listed and you may choose what fields to query and in what order they will appear in the report. The fields appear as they are selected in the SQL area of the window.

The ALL/DISTINCT button, when not selected, will read ALL and return all the entries that meet the query parameters. When selected it will read DISTINCT and a *DISTINCT* command will be placed in the query. Only entries matching the query parameters with unique field values will be returned. Entries with duplicate field values will not be in the *DISTINCT* report.

The ORDER BY Fields pull-down menu lists the fields from the selected table. Choices here determine how the query result will be ordered. Fields appear as selected in the SQL area of the window. If *ASCENDING* is chosen on the button next to the ORDER BY menu the results will be arranged in ascending order, numerically or alphabetically depending on the field value. If *DESCENDING* is chosen the results will be arranged in descending order and in the *ORDER BY* line of the query will be a *DESC* command.

The WHERE table is better seen in Figure 3-117 below.

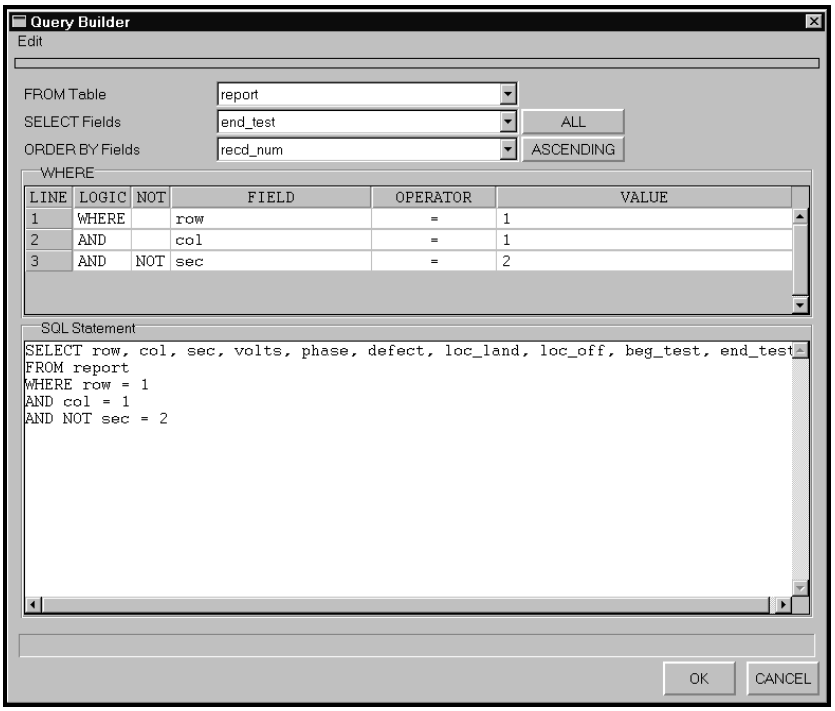



Figure 3-117. Built Query

To add a line to the WHERE table click in the small gray box in the upper right corner of the table. To delete a line, right-click in the box. The table fields are LOGIC, NOT, FIELD, OPERATOR, and VALUE.

LOGIC: The first line has *WHERE* in this field to introduce the *WHERE* clause in the query. Following lines can toggle between *AND* or *OR* commands to qualify the *WHERE* clause. Either clicking or right-clicking on the field changes the command.

NOT: Adds a *NOT* to a *WHERE*, *AND* or *OR* command. This tells the query to include entries *NOT* matching the logic.

FIELD: Choose a field from the table selected in the FROM Table menu. Either clicking or right-clicking on the field toggles among the table field names.

OPERATOR: By clicking or right-clicking on the field you may choose the operator value of the line. The choices are: =, >, > =, <, < =, < > and *IS NULL*.

VALUE: What value the query will be looking for. Either a number or text value depending on the field being queried.

In Figure 3-116 we can see that the selections made in the menus in the top portion of the window correspond to the logic in the SQL area at the bottom of the window. Changes made in the menus will dynamically appear in the SQL area. You can always place the cursor in the SQL area and type or delete text manually. After the query is completed, click on OK to load the query into the Queries window. CANCEL exits Query Builder, remembering your work until you exit the Queries window. That is, if you open Query Builder again before exiting the Queries window, your work will still appear in the window. Exiting and reopening the Queries window will reset the Query Builder to defaults.

### Charts Menu

As shown in Figure 3-118, the Charts menu contains only one (1) choice - Show….

Figure 3-118. QUERY > Charts Menu

- Show… creates a bar graph depicting the distribution of the query results. This feature is still under development

## Buttons

Figure 3-119. QUERY > Buttons

- EXECUTE Button runs a query and results will be displayed in the View/Edit Area for *SELECT* queries.

- Stored Queries Menu lists the queries stored in the database using Database > Store Query or Database > Store Query As explained above. As seen in Figure 3-120, choosing the query name in the pull-down menu will cause the query to appear in the SQL Area. If edits are done to the query and you wish to save it under the same name, use Database > Store Query. If you wish to store it under a distinct name, use Database > Store Query As. See Database > Store Query for an explanation of *stored* vs. *saved* queries.

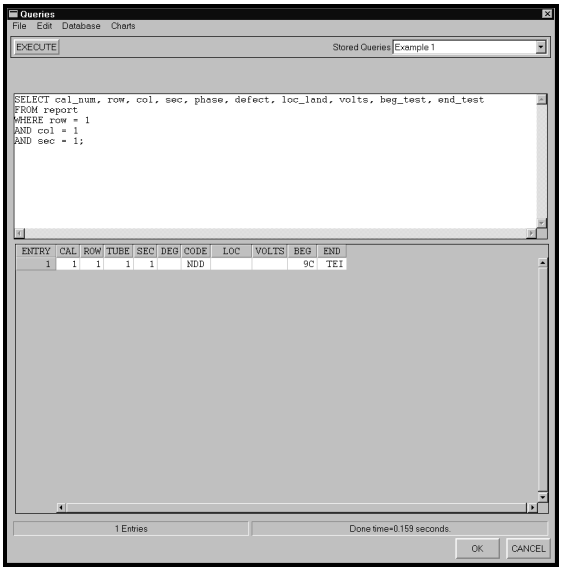



Figure 3-120. Queries Window With Restored Query

From the Queries Window, after a query has been run, clicking OK places symbols on the map for the entries of the report. CANCEL will close the Queries Window without placing symbols on the map.

Using the query from Figure 3-120 the Query Fill can be seen added to our map in Figure 3-121.

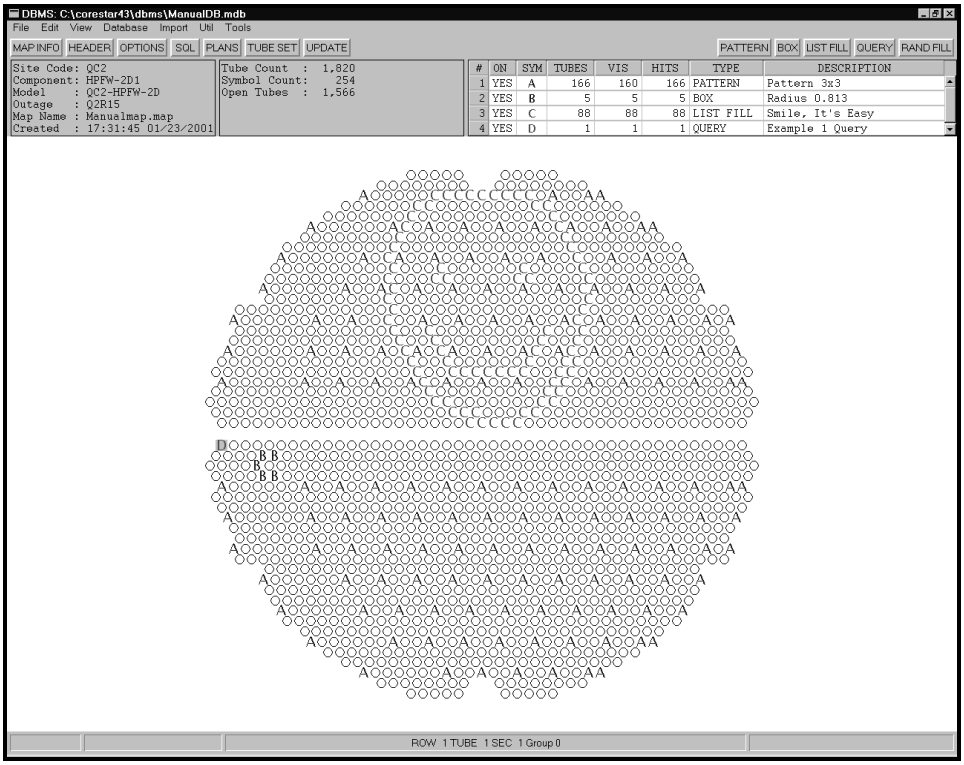



Figure 3-121. Map With Pattern, Box, List and Query Fills

The new line added to the legend has QUERY in the TYPE field. Since the resulting tube does not overlap with our other symbols, all tubes are visible. There is no default description for query fills. A description up to 26 characters can be typed.

### *Pop-up Menu*

Right-clicking on the main working area of DBMS opens the pop-up menu in Figure 3-122.

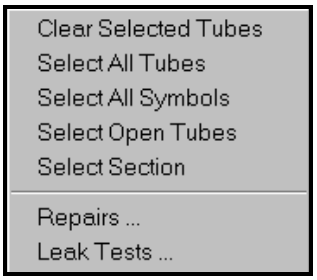



Figure 3-122. Pop-up Menu

The first five (5) selections are identical to the selections from the Main Window > Edit menu. These are Clear Selected Tubes, Select All Tubes, Select All Symbols, Select Open Tubes and Select Section. Please see the section of this manual discussing Main Window > Edit menu for an explanation of these choices.

The other two choices, Repairs… and Leak Tests… are only found in the Pop-up Menu. As of Rev 4.x of the software, the Leak Tests ... tool is not functional. This tool will be made available in a future release of the software. Repairs ... allows you to track repairs in a given component.

## Repairs

Choosing Repairs from the Pop-up Window opens the All Repairs Window seen in Figure 3-123.

## All Repairs Window

This utility tracks repairs in a given component.

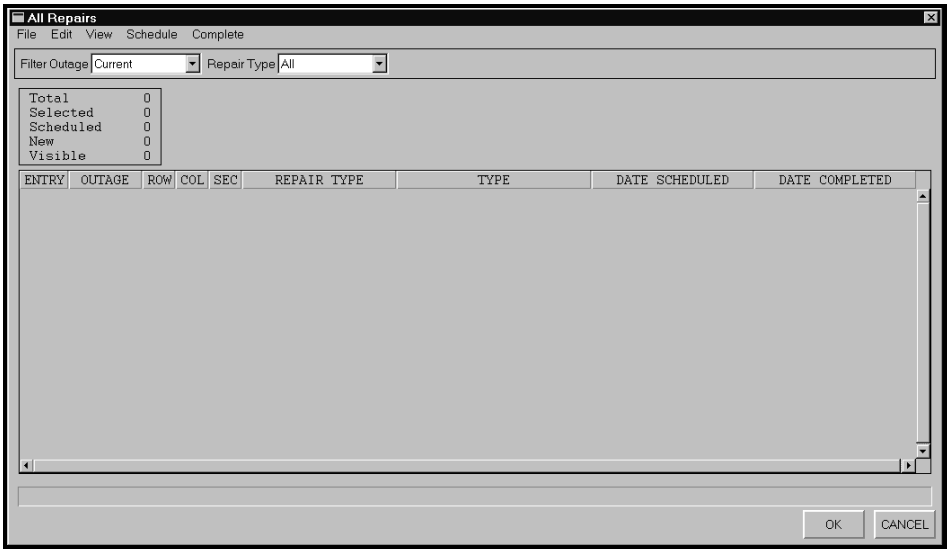



Figure 3-123. All Repairs Window

File Menu

There is only one (1) choice on the File Menu shown in Figure 3-124. It is Print.

Figure 3-124. All Repairs > File Menu

- All Repairs > File > Print brings up a typical Print window as seen in Figure 3-9. After selecting the desired print options and choosing OK, a list of the repairs currently showing will be printed.

Edit Menu

There are seven (7) choices on the Edit Menu shown in Figure 3-125. They are Select All, Select All Sched, Select Selected Date, Select Selected Tubes, Clear Selections, Remove Selected Repairs, and Edit Repairs.

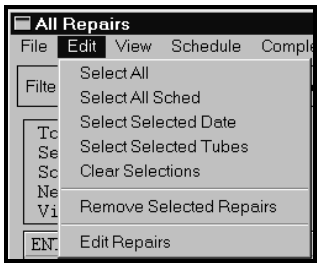



Figure 3-125. All Repairs > Edit Menu

- All Repairs > Edit > Select All highlights all repairs currently in the window. Selected entries will be highlighted in gray.

- All Repairs > Edit > Select All Sched selects entries not yet completed from those showing in the window.

- All Repairs > Edit > Select Selected Date selects all entries having the same date as a given line. An entry in the table must be highlighted first by clicking on the line number.

- All Repairs > Edit > Select Selected Tubes highlights in the Repairs Window those tubes selected on the map. For help selecting tubes on a map see the Main Window > Edit or Pop-up Menu sections of the manual.

- All Repairs > Edit > Clear Selections deselects selected entries in the window.

- All Repairs > Edit > Remove Selected Repairs deletes from the *repairs* table in the database those tubes selected in the Repairs Window.

- Edit Repairs calls up the Repair Attributes Window seen in Figure 3-126. When editing an entry the row, column and section of the tube will appear in the title bar of the window. Here, it is: *row=R16 col=20 sec=1*. The entry number in the Repairs Table is shown on the REPAIR button. Here the tube is entry 4 of 13 total entries. Clicking or right-clicking on the REPAIR button will toggle between the entries in the table.

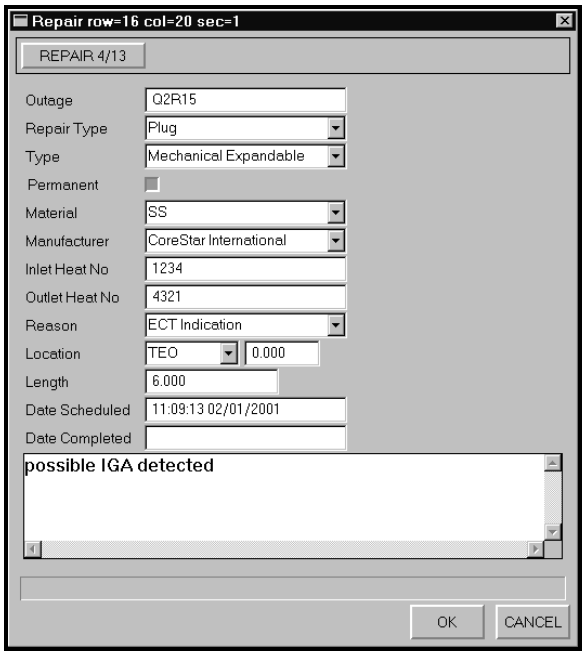



Figure 3-126. Repair Attributes Window

There are several drop-down lists in the Repair Attributes Window to fill in fields. The fields are not limited to the choices in the drop-downs. Values may always be typed directly into the field. The following is a brief description of the Repair Attributes fields.

- Outage shows the outage designation for the outage associated with this repair.

- Repair Type refers to the general repair description. Although a value may be typed into the field directly, the drop-down gives the following choices:

| | | |
|---|---|---|
| Plug | Sleeve | Tubesheet Plug |
| Tube End Sleeve | Tube Pull And Plug | Stabilizing Spear |
| Reroll Tube Joint | Plug Removal | |

- Type refers to the specific process within a general repair type. Although a value may be typed into the field directly, the drop-down gives the following choices:

| | | |
|---|---|---|
| Solid Piece Drive-In | Two Piece Drive-In | Hydraulic Expandable |
| Mechanical Expandable | Welded Thimble | Explosive Expansion |
| Mechanical Rubber Seal | Solid Rod | Strained Wire Robe |

- Permanent, when depressed and green, indicates that the repair is a permanent fixture in the component.

- Material refers to the material used in the repair process. Although a value may be typed into the field directly, the drop-down gives the following choices:

| | |
|---|---|
| SS or Stainless Steal | Brass |
| CS | Rubber |

- Manufacturer refers to the manufacturer of the repair parts used. The value may be typed directly into the field.

- Inlet Heat No refers to the heat number of the repair part placed in the inlet side of the tube.

- Outlet Heat No refers to the heat number of the repair part placed in the outlet side of the tube.

- Reason describes in brief the reason for repair. Although a value may be typed directly into the field, the drop-down gives the following choices:

| | |
|---|---|
| Inservice Leak | ECT Indication |
| Failed Pressure Test | Other |

- Location refers to the location of the repair in the tube. The drop-down lists the landmarks saved with the *.cmp* file when it was created. Values may be typed directly into the filed. The second field is for measurement values, ranged from the landmark chosen, to specify the repair location.

- Length refers to the length of the repair device or process in the tube.

- Date Scheduled is the date the repair was first loaded into the database as needing done.

- Date Completed is the date the repair process was entered as done in the database.

- A description field is located at the bottom of the window. A sizable description may be entered here. The scroll bars will move to follow the text.

View Menu

There are five (5) choices on the View Menu shown in Figure 3-127. They are All Repairs, Scheduled Repairs, Selected Repairs, Need Heat Numbers, and Show In Map.

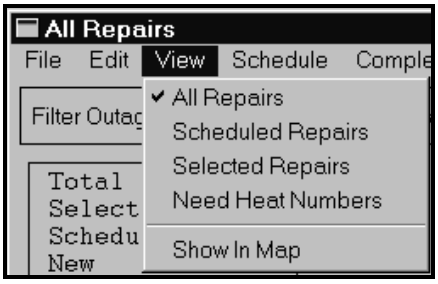



Figure 3-127. All Repairs > View Menu

The option selected in the View menu will have a check mark beside it in the menu. Selections determine the table entries that will be visible in the All Repairs Window.

- All Repairs > View > All Repairs displays all entries of the repair type specified in the Repair Type drop-down.

- All Repairs > View > Scheduled Repairs displays only the entries not yet completed for the repair type specified in the Repairs Type drop-down.

- All Repairs > View > Selected Repairs displays only the selected entries in the window for the repair type specified in the Repairs Type drop-down.

- All Repairs > View > Need Heat Numbers displays only those entries *without* heat number information for the repair type specified in the Repair Type drop-down.

- All Repairs > View > Show In Map places symbols on the map for the entries displayed in the window. Completed repairs will have a solid black dot as a symbol and repairs not yet completed will have a black semi-circle.

Schedule Menu
There are two (2) choices on the Schedule Menu shown in Figure 3-128. They are Selected Tubes and Tubes With Symbols.

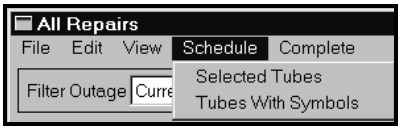



Figure 3-128. All Repairs > Schedule Menu

- All Repairs > Schedule > Selected Tubes will bring those tubes selected on the map into the All Repairs Window. The Repair Attributes Window will open for you to enter options for this tube set. All tubes selected will receive the options chosen. If changes need to be made for individual tubes you can either use Edit > Edit Repairs or right-click on the line number you wish to edit.

- All Repairs > Schedule > Tubes With Symbols will bring those tubes currently on the map with symbols into the All Repairs Window. The Repair Attributes Window will open for you to enter options for this tube set. All tubes selected will receive the options chosen. If changes need to be made for individual tubes you can either use Edit > Edit Repairs or right-click on the line number you wish to edit.

Complete Menu
There are two (2) choices on the Complete Menu shown in Figure 3-129. They are All Scheduled Repairs and Selected Repairs.

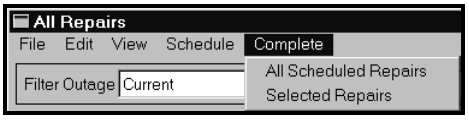



Figure 3-129. All Repairs > Complete Menu

- All Repairs > Complete > All Scheduled Repairs will mark as completed all the scheduled entries in the All Repairs window. Even if only a portion of the total entries is visible, all scheduled entries will be marked as complete. The current time and date will be placed in the DATE COMPLETED field of the table.

- All Repairs > Complete > Selected Repairs will mark as completed only selected entries in the All Repairs window. Even if only a portion of the total entries is visible, only the selected entries will be marked complete. The current time and date will be placed in the DATE COMPLETED field of the table.

Other Features

The two (2) drop-down lists at the top of the All Repairs Window help dictate which entries are displayed in the table. They are shown in Figure 3-130 below.

- The Filter Outage drop-down lists all the outages in the database along with *Current* and *All*. Entries in the table will match the selection made in this drop-down. If *All* is selected, repairs from all outages in the database will be shown. If a specific outage is selected, only repairs from that outage will be displayed.

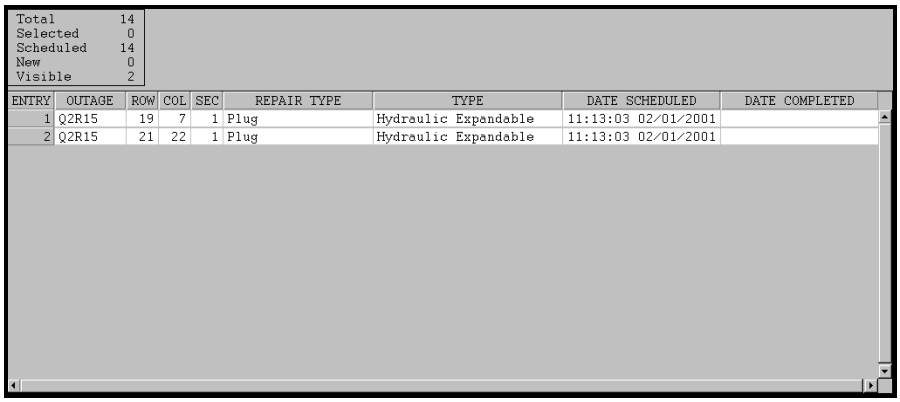
- The Repair Type drop-down lists all values for the Repair Type field in the table along with an *All* option. *All* means that the entries showing are chosen from all repair types. The entries shown are further defined by choices made in the View menu. Selecting a specific repair type means that the entries displayed will all be of that type. Again, the View menu further defines what is displayed.

Figure 3-130. All Repair Window Drop-Downs

The table area displays the repair entries specified in the Repair Type drop-down and the View menu. The fields reflect those choices made in the Repair Attributes Window upon either selecting tubes from the map or editing individual entries. Figure 3-131 shows the table area along with the Entry Display in the upper right of the figure.

The following information can be found in the Entry Display:

- Total shows the total number of entries in the repairs table.
- Selected shows the number of entries currently selected in the table. Remember that selected tubes may not be visible at the time.
- Scheduled shows the number of tubes *not* yet completed.
- New shows the number of entries added to the table when new tubes are selected.
- Visible shows the number of entries currently showing in the table.



| | |
|---|---|
| Total | 14 |
| Selected | 0 |
| Scheduled | 14 |
| New | 0 |
| Visible | 2 |

| ENTRY | OUTAGE | ROW | COL | SEC | REPAIR TYPE | TYPE | DATE SCHEDULED | DATE COMPLETED |
|---|---|---|---|---|---|---|---|---|
| 1 | Q2R15 | 19 | 7 | 1 | Plug | Hydraulic Expandable | 11:13:03 02/01/2001 | |
| 2 | Q2R15 | 21 | 22 | 1 | Plug | Hydraulic Expandable | 11:13:03 02/01/2001 | |

Figure 3-131. All Repairs Table and Entry Display

The table fields correspond to those in the Repair Attributes Window except for *ROW, COL and SEC* whose values are filled in when the tubes are selected using the Schedule menu.

Right-clicking on a line number will bring up the Repair Attributes Window to edit that entry. One can also edit entries by directly typing into a table field. Right-clicking in a table field will bring up a change dialog similar to the one in Figure 3-132.

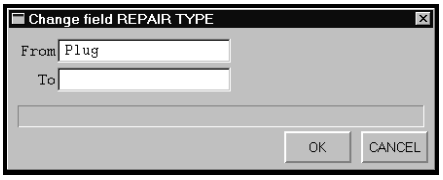



Figure 3-132. All Repairs Change Dialog

The field name in the title bar will change for the field in which you want to change. This figure shows a change to be made in the REPAIR TYPE field. The From value is taken from the field entry selected. Only entries having the From value will be changed. The table field selected will change from the From value to the value entered into the To box. Click OK to execute the change. CANCEL will close the window and nothing will change.

## *Appendix A: Database Structure*

This section explains the tables and field structure of a DBMS database as shown in MS ACCESS. It also describes certain ACCESS features complimentary to DBMS. This section is not intended to explain the technical architecture of a database, nor is it a manual for ACCESS.

### The Database in ACCESS

The table structure of DBMS comes from MS ACCESS. Because of this, a DBMS database may be opened, viewed, queried or otherwise manipulated in ACCESS. Once ACCESS is running you may open a database using File > Open Database and browsing to the directory where the desired database is stored. DBMS databases default to the *\corestar\dbms* directory.

What do we mean by the table structure of our database? ACCESS uses what is called *relational databases*. In simple terms, this means that the database consists of various tables. Each table has rows and columns with one piece of data in each cell. These tables are joined together through relationships, the basis of these relationships being the data they share or access from each other. This structure allows us to perform SQL queries previously described and in *Appendix B*.

Once connected to a database in ACCESS a small window will appear like the one in Figure 4-1. The database tables are listed under the TABLES tab. Tables can be open by highlighting and clicking Open or double-clicking on a table name.

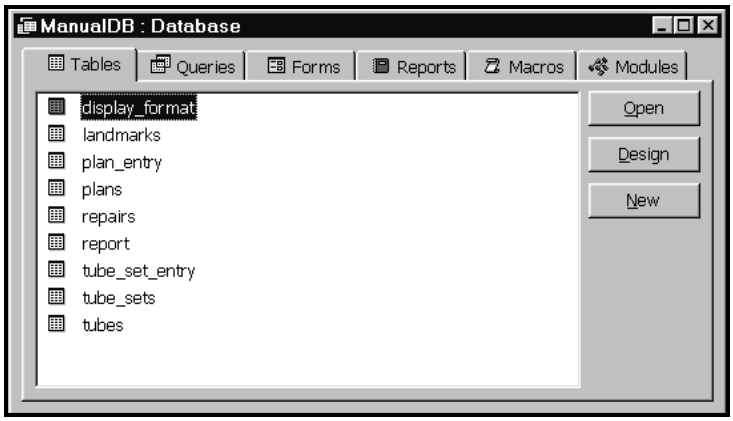



Figure 4-1. Database Window in ACCESS.

The first table listed is **display_format**, Figure 4-2. Here you can change some features of the table created when a query is performed on the database. In the **SQL Window** and **Queries Window** sections we've seen that after a query is executed the results appear in a list. This list will form the body of a printed report. To adjust the appearance of the query report you can change some fields in the **display_format** table. The table is set with default settings.

display_format : Table

| table_name | field_name | title | format | field_width | alignment |
|---|---|---|---|---|---|
| plans | comp | COMPONENT | %s | 20 | L |
| plans | outage | OUTAGE | %s | 12 | L |
| plans | plan_num | ID | %d | 6 | L |
| plans | site_code | SITE | %s | 10 | L |
| plugs | col | COL | %d | 3 | R |
| plugs | comment | COMMENT | %s | 20 | L |
| plugs | comp | COMP | %s | 12 | L |
| plugs | date_completed | COMPLETED | %m/%d/%Y | 10 | R |
| plugs | date_scheduled | SCHEDULED | %m/%d/%Y | 10 | R |
| plugs | heat1 | HEAT 1 | %s | 10 | L |
| plugs | heat2 | HEAT 2 | %s | 10 | L |
| plugs | outage | OUTAGE | %s | 10 | L |
| plugs | row | ROW | %d | 3 | R |
| plugs | sec | SEC | %d | 3 | R |
| plugs | site_code | SITE | %s | 10 | L |
| plugs | type | TYPE | %s | 10 | L |
| plugs | vendor | VENDOR | %s | 10 | L |
| report | analyst_id | ANALYST | %s | 11 | R |
| report | beg_test | BEG | %s | 4 | R |
| report | cal_num | CAL | %d | 3 | R |
| report | chan | CH | %s | 3 | R |
| report | col | COL | %d | 4 | R |
| report | comment | COMMENT | %s | 20 | R |
| report | comp | COMP | %s | 15 | C |
| report | defect | CODE | %s | 4 | C |
| report | dig_volts | DIGVOL | %D | 6 | R |
| report | end_test | END | %s | 4 | R |
| report | entry_time | TIME | %X %m/%d/%Y | 19 | R |
| report | file_name | FILE NAME | %s | 30 | L |
| report | file_num | FILE# | %d | 5 | R |
| report | from_dist | DIST | %.2f | 6 | R |
| report | from_land | FROM | %s | 4 | R |
| report | from_off | OFF | %+.2f | 7 | R |
| report | from_pnt | PNT | %D | 6 | R |
| report | id | ID | %d | 3 | R |
| report | leg | LEG | %d | 6 | R |
| report | loc_dist | DIST | %.2f | 6 | R |

Record: 1 of 59

Figure 4-2. The display_format Table

The fields, or columns, of the table are **table_name, field_name, title, format, field_width** and **alignment**. Here is a brief description of each field.

- **table_name:** The table where this data is located. This should not be altered.

- **field_name:** The field name within the table where this data is located. This should not be altered.

- **title:** What appears in a **Query Report** as a column header. For example, if the field **site_code** appears in your report, **SITE** would be the header of that field in the report. This can be altered to customize your reports.

- **format:** Defines what type of data the field is looking for. For example, text, a number with decimal places, date and time, etc. This field should not be changed.

- **field_width:** Defines the width in spaces of each field in the report. Our **site_code** field is 10 spaces wide. This can be changed to better display data.

- **alignment:** Sets what justification the text will be within the field cell. **R** means justified to the right, **L** means justified to the left and **C** is centered within the cell. The justifications can be changed for the appearance you want.

The next table is **landmarks,** Figure 4-3. The data to fill in this table comes from the *.cmp* file you select and upload to the database using **Database > Upload Model** from the main DBMS menu. The component and landmarks data are created in the MakeComp program of the EddyVISION32 suite.

landmarks : Table

| number | type | name | leg | pos | angle | first_row | last_row |
|---|---|---|---|---|---|---|---|
| 0 | TEH | TEO | 1 | 0 | 0 | 1 | 999 |
| 1 | TSO | TSO | 1 | 7.625 | 0 | 1 | 999 |
| 2 | TSP | 1H | 1 | 42 | 0 | 1 | 999 |
| 3 | TSP | 2H | 1 | 76.375 | 0 | 1 | 999 |
| 4 | TSP | 3H | 1 | 110.75 | 0 | 1 | 999 |
| 5 | TSP | 4H | 1 | 146.25 | 0 | 1 | 999 |
| 6 | TSP | 5H | 1 | 180.75 | 0 | 1 | 999 |
| 7 | TSP | 6H | 1 | 203.875 | 0 | 1 | 999 |
| 8 | TSP | 7H | 1 | 215.25 | 0 | 1 | 999 |
| 9 | TSP | 8H | 1 | 233.25 | 0 | 1 | 999 |
| 10 | TSP | 9H | 1 | 249.75 | 0 | 1 | 999 |
| 11 | TSP | 10H | 1 | 284.25 | 0 | 1 | 999 |
| 12 | TSP | 11H | 1 | 318.75 | 0 | 1 | 999 |
| 13 | TSP | 12H | 1 | 353.258 | 0 | 1 | 999 |
| 14 | TSP | 13H | 1 | 387.75 | 0 | 1 | 999 |
| 15 | TSP | 14H | 1 | 422.25 | 0 | 1 | 999 |
| 16 | TSP | 15H | 1 | 448.625 | 0 | 1 | 999 |
| 0 | | | 0 | 0 | 0 | 1 | 1000 |

Record: 1 of 17

Figure 4-3. The landmarks Table

The **plan_entry** table, Figure 4-4, is filled with data from inspection plans created in DBMS using the **Inspection Plans Window** discussed above. What we see in Figure 4-4 is a portion of the tubes selected for plan 2.

plan_entry : Table

| site_code | comp | outage | plan_num | entry_num | row | col | sec | is_done | is_analyzed |
|---|---|---|---|---|---|---|---|---|---|
| QC2 | HPFW-2D1 | Q2R15 | 2 | 0 | 5 | 13 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 1 | 6 | 12 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 2 | 6 | 13 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 3 | 6 | 14 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 4 | 6 | 15 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 5 | 6 | 21 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 6 | 6 | 29 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 7 | 7 | 11 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 8 | 7 | 15 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 9 | 7 | 26 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 10 | 7 | 28 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 11 | 7 | 29 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 12 | 7 | 30 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 13 | 7 | 34 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 14 | 7 | 35 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 15 | 8 | 10 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 16 | 8 | 15 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 17 | 8 | 20 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 18 | 8 | 23 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 19 | 8 | 25 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 20 | 8 | 26 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 21 | 8 | 27 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 22 | 8 | 30 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 23 | 8 | 33 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 24 | 8 | 34 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 25 | 9 | 10 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 26 | 9 | 15 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 27 | 9 | 19 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 28 | 9 | 22 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 29 | 9 | 23 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 30 | 9 | 24 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 31 | 9 | 26 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 32 | 9 | 27 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 33 | 9 | 30 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 34 | 9 | 31 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 35 | 9 | 32 | 1 | ☐ | ☐ |
| QC2 | HPFW-2D1 | Q2R15 | 2 | 36 | 10 | 9 | 1 | ☐ | ☐ |

Record: 1 of 113

Figure 4-4. The plan_entry Table

The plans table. Figure 4-5, also holds data from the plans created in the Inspection Plan Window and uploaded to the database. Whereas the plan_entry table lists all tubes for a particular plan, the plans table shows data pertaining to the uploaded plans themselves. This table is not usually queried. The plan_entry table would be queried for data about inspection plans.

plans : Table

| site_code | comp | outage | plan_num | probe_model | beg_test | end_test | create_time | file_name | desc |
|---|---|---|---|---|---|---|---|---|---|
| QC2 | HPFW-2D1 | Q2R15 | 1 | | | | /01 1:04:20 PM | c:\corestar43\pl | |
| QC2 | HPFW-2D1 | Q2R15 | 2 | EC123 | | | /00 1:26:46 AM | c:\corestar43\pl | |
| QC2 | HPFW-2D1 | Q2R15 | 3 | EC123 | | | /00 1:26:46 AM | c:\corestar\plan | |
| | | | 0 | | | | | | |

Record: 1 of 3

Figure 4-5. The plans Table

The repairs table, Figure 4-6, holds data from tubesets created in the All Repairs Window discussed in the Repairs topic of *Section 3*.

repairs : Table

| row | col | sec | repair_type | type | material | vendor | loc_land | loc_off | date_schedule |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 26 | 2 | Sleeve | Solid Piece Driv | CS | | 5H | 0 | 01 11:04:49 AM |
| 7 | 27 | 2 | Sleeve | Hydraulic Expar | Brass | | 1H | 0 | 01 12:12:12 PM |
| 9 | 32 | 2 | Sleeve | Solid Piece Driv | CS | | 5H | 0 | 01 11:04:49 AM |
| 10 | 23 | 1 | Plug | Explosive Expar | Brass | | TSO | 0 | 2/01 4:20:59 PM |
| 13 | 19 | 2 | Sleeve | Hydraulic Expar | Brass | | 1H | 0 | 01 12:12:12 PM |
| 14 | 11 | 2 | Sleeve | Hydraulic Expar | Brass | | 1H | 0 | 01 12:12:12 PM |
| 15 | 9 | 1 | Tube End Sleev | | Inconel 600 | CS | TEO | 0 | 01 11:09:13 AM |
| 15 | 10 | 1 | Tube End Sleev | | Brass | | TEO | 0 | 01 11:09:13 AM |
| 15 | 12 | 1 | Tube End Sleev | | Brass | | TEO | 0 | 01 11:09:13 AM |
| 16 | 20 | 1 | Tube End Sleev | | Brass | | TEO | 0 | 01 11:09:13 AM |
| 17 | 15 | 1 | Plug | Welded Thimble | Brass | | TSO | 0 | 2/01 4:20:59 PM |
| 17 | 22 | 2 | Sleeve | Solid Piece Driv | CS | | 5H | 0 | 01 11:04:49 AM |
| 18 | 25 | 1 | Tube End Sleev | | Brass | | TEO | 0 | 01 11:09:13 AM |
| 19 | 7 | 1 | Plug | Hydraulic Expar | CS | | TEO | 0 | 01 11:13:03 AM |
| 21 | 22 | 1 | Plug | Hydraulic Expar | CS | | TEO | 0 | 01 11:13:03 AM |
| 23 | 11 | 1 | Reroll Tube Joir | | | | TEO | 0 | 01 11:13:22 AM |
| | | | | | | | | 0 | |

Record: 1 of 16

Figure 4-6. The repairs Table

The **report** table, Figure 4-7, holds the data from uploaded reports. This is the table most queried. Here we would find inspection results from current and previous outages.

report : Table

| recd_num | site_code | outage | comp | leg | cal_num | file_num | id | row | col |
|---|---|---|---|---|---|---|---|---|---|
| 532 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 6 | 0 | 14 | |
| 533 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 7 | 0 | 14 | |
| 534 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 8 | 0 | 14 | |
| 535 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 9 | 0 | 14 | |
| 536 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 10 | 0 | 14 | |
| 537 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 11 | 0 | 14 | |
| 538 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 12 | 0 | 14 | |
| 539 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 13 | 0 | 14 | |
| 540 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 14 | 0 | 14 | |
| 541 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 15 | 0 | 14 | |
| 542 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 16 | 0 | 14 | |
| 543 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 17 | 0 | 14 | |
| 544 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 18 | 0 | 14 | |
| 545 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 19 | 0 | 14 | |
| 546 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 23 | 0 | 15 | |
| 547 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 24 | 0 | 15 | |
| 548 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 25 | 0 | 15 | |
| 549 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 26 | 0 | 15 | |
| 550 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 29 | 0 | 15 | |
| 551 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 30 | 0 | 15 | |
| 552 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 31 | 0 | 15 | |
| 553 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 32 | 0 | 15 | |
| 554 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 33 | 0 | 15 | |
| 555 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 34 | 0 | 15 | |
| 556 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 35 | 0 | 15 | |
| 557 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 36 | 0 | 15 | |
| 558 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 37 | 0 | 15 | |
| 559 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 37 | 0 | 15 | |
| 560 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 38 | 0 | 15 | |
| 561 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 39 | 0 | 15 | |
| 562 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 41 | 0 | 15 | |
| 563 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 42 | 0 | 15 | |
| 564 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 43 | 0 | 15 | |
| 565 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 44 | 0 | 15 | |
| 566 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 45 | 0 | 15 | |
| 567 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 46 | 0 | 15 | |
| 568 | QC2 | Q2R15 | HPFW-2D1 | 1 | 7 | 47 | 0 | 15 | |

Record: 1 of 1890

Figure 4-7. The report Table

The tube_set_entry table, Figure 4-8, holds data from tube sets uploaded to the database from the Tube Set window discussed in the TUBE SET Button topic in *Section 3*.

tube_set_entry : Table

| name | row | col | sec |
|---|---|---|---|
| Plugs | 1 | 10 | 1 |
| Plugs | 18 | 34 | 1 |
| Plugs | 19 | 18 | 2 |
| Plugs | 20 | 3 | 1 |
| Plugs | 21 | 14 | 2 |
| Plugs | 21 | 20 | 2 |
| Plugs | 21 | 22 | 2 |
| Plugs | 22 | 7 | 2 |
| Plugs | 22 | 20 | 2 |
| | 0 | 0 | 0 |

Record: 1 of 9

Figure 4-8. The tube_set_entry Table

The **tube_sets** table, Figure 4-9, also holds data stored in the database using the **Tube Set Window**. Whereas the **tube_set_entry** table lists all tubes within a certain tube set, the **tube_sets** table shows data pertaining to the tube sets themselves. This table is not usually queried. The **tube_set_entry** table would be queried for data about tube sets.

tube_sets : Table

| name | comp_model | symbol | symbol_color | color | desc |
|---|---|---|---|---|---|
| Plugs | QC2-HPFW-2D | 0 | 0 | 255 | |
| | | 0 | 0 | 0 | |

Record: 1 of 1

Figure 4-9. The tube_sets Table

The tubes table, Figure 4-10, lists all the tubes in the *.cmp* file uploaded to the database. This table, as with the landmarks table, are empty until a component is uploaded. The fields is_periph and is_marked are determined by choices made in the MakeComp program when creating the component.

tubes : Table

| row | col | sec | is_periph | is_marked |
|---|---|---|---|---|
| 1 | 1 | 1 | ☐ | 0 |
| 1 | 1 | 2 | ☐ | 0 |
| 1 | 2 | 1 | ☐ | 0 |
| 1 | 2 | 2 | ☐ | 0 |
| 1 | 3 | 1 | ☐ | 0 |
| 1 | 3 | 2 | ☐ | 0 |
| 1 | 4 | 1 | ☐ | 0 |
| 1 | 4 | 2 | ☐ | 0 |
| 1 | 5 | 1 | ☐ | 0 |
| 1 | 5 | 2 | ☐ | 0 |
| 1 | 6 | 1 | ☐ | 0 |
| 1 | 6 | 2 | ☐ | 0 |
| 1 | 7 | 1 | ☐ | 0 |
| 1 | 7 | 2 | ☐ | 0 |
| 1 | 8 | 1 | ☐ | 0 |
| 1 | 8 | 2 | ☐ | 0 |
| 1 | 9 | 1 | ☐ | 0 |
| 1 | 9 | 2 | ☐ | 0 |
| 1 | 10 | 1 | ☐ | 0 |
| 1 | 10 | 2 | ☐ | 0 |
| 1 | 11 | 1 | ☐ | 0 |
| 1 | 11 | 2 | ☐ | 0 |
| 1 | 12 | 1 | ☐ | 0 |
| 1 | 12 | 2 | ☐ | 0 |
| 1 | 13 | 1 | ☐ | 0 |
| 1 | 13 | 2 | ☐ | 0 |
| 1 | 14 | 1 | ☐ | 0 |
| 1 | 14 | 2 | ☐ | 0 |
| 1 | 15 | 1 | ☐ | 0 |
| 1 | 15 | 2 | ☐ | 0 |
| 1 | 16 | 1 | ☐ | 0 |
| 1 | 16 | 2 | ☐ | 0 |
| 1 | 17 | 1 | ☐ | 0 |
| 1 | 17 | 2 | ☐ | 0 |
| 1 | 18 | 1 | ☐ | 0 |
| 1 | 18 | 2 | ☐ | 0 |
| 1 | 19 | 1 | ☐ | 0 |

Record: 1 of 1820

Figure 4-10. The tubes Table

Returning to the database window in ACCESS, Figure 4-1, it is necessary to note that more than the tables discussed above compose the database. The information under each of the tabs comprises the database. The **Tables** and **Queries** tabs are the most used for DBMS purpose.

The **Queries** tab in ACCESS, Figure 4-11, is where *stored* queries from DBMS are located. If you recall, an option in the **SQL** and **Queries** windows is to store a query. Stored queries are listed in the pull-down menu on the right side of these windows. In order to delete or rename *stored* queries, they need to be viewed in ACCESS.

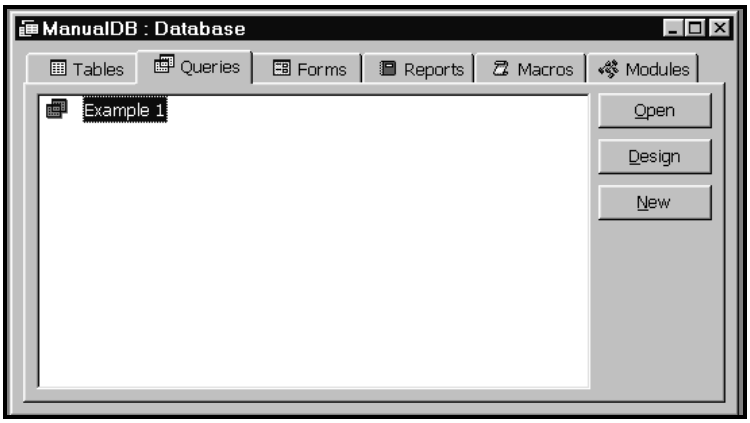



Figure 4-11. The Queries Tab in ACCESS

*Stored (internal)* queries differ from *saved (external)* queries. A query stored to the database is an actual part of the ACCESS database. These queries cannot be opened from another database. *Saved* queries are placed in the *\corestar\queries* directory and are not specific to any one database. Because of this, you only need to write a query once, save it and that query may be opened and executed while working on any database.

This distinction applies to all situations where *save* and *store* are options. For example, tube lists and inspection plans. *Saved* items are located in a universally accessible directory and *stored* items are actually part of a specific database.

Once a query is selected in the Queries tab, clicking on the Design button will display the query in the ACCESS query builder. See Figure 4-12.

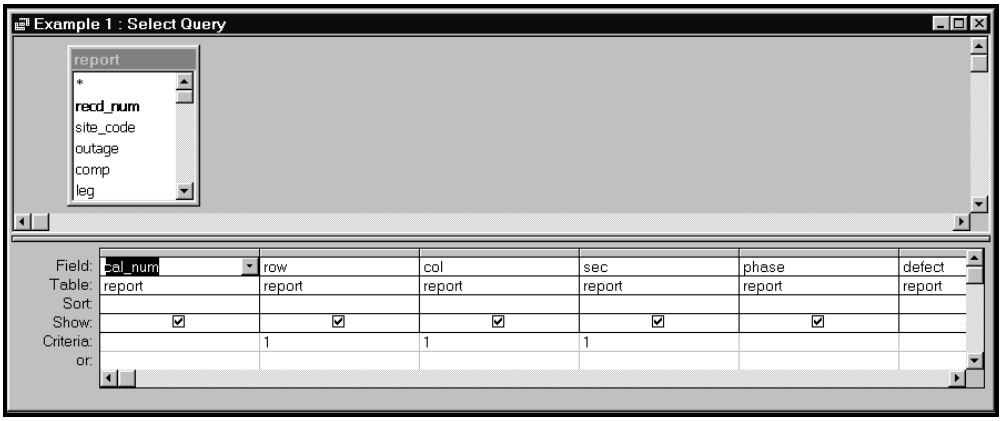



Figure 4-12. ACCESS Query Builder

Under View on the main menu there is the option SQL View. This will present the query in SQL. See Figure 4-13. Notice that a query appears differently in DBMS than in ACCESS. In general, SQL logic is the same in both programs, however, there is syntax specific to ACCESS. This will be explained in any good text devoted to ACCESS.

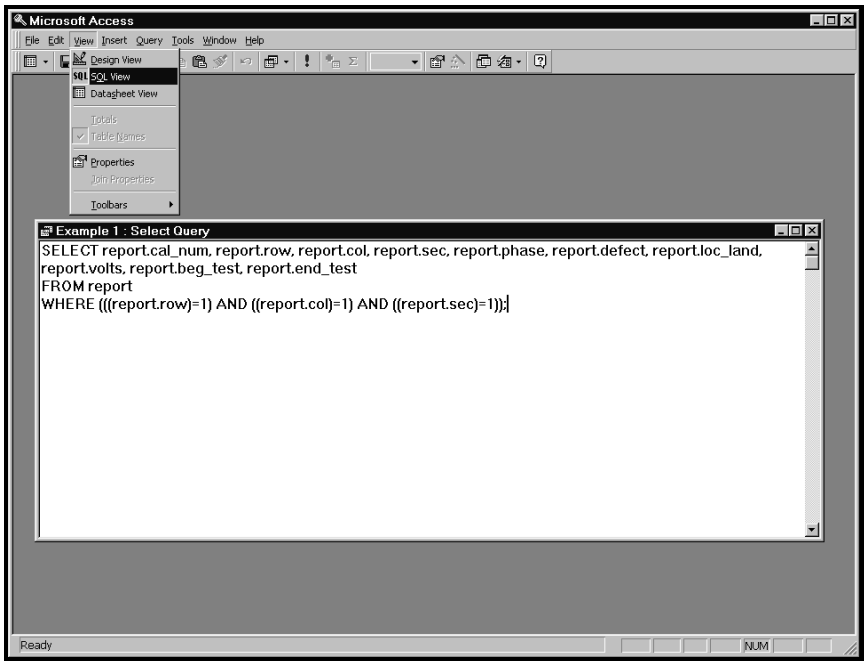



Figure 4-13. SQL View in ACCESS

## ACCESS Advantages

ACCESS is a powerful program. You will find that some tasks are more efficiently carried out in ACCESS than in DBMS. DBMS and ACCESS compliment each other when used together.

The main advantage to ACCESS is that you are working with the database directly. What you see is what you get. If you question results from a query in DBMS, looking in ACCESS will assure you what the database contains.

Manipulating the database is also easier in ACCESS. There are no safeguards to keep you from altering the tables. **EXERCISE CAUTION** when working in ACCESS. A suggestion is that only senior or lead personnel work with the database outside DBMS. Furthermore, ***BACKUP, BACKUP, & BACKUP!***

Some people find SQL in ACCESS easier to work with. In ACCESS, you have full SQL capabilities. There are various query wizards to aid you in building simple and more complex queries. Volumes exist devoted to ACCESS if you desire to explore the possibilities.

## The Template Database

If you browse in ACCESS to *\corestar\config\dbms* there exists a template database that is the default for all new databases created with DBMS. It is called *dbms_template*. If while using DBMS there appears a format change you would like to make to all future databases, then the *dbms_template* database may be altered and saved. Examples would be changing display formats, deleting or renaming a query, or adding a user-defined table. If a change is desired on a small number of databases, then it is suggested to manually change these separately and not alter the template unless desired.

IMPORTANT: Do not change the names or field names or any of the validation rules for any of the default DBMS tables; otherwise, DBMS may not be able to communicate with the database.

## *Appendix B: SQL*

The purpose of this section is to give a better idea of what makes up a SQL query, explain a few simple SQL commands and give examples of basic queries. It is not intended to teach advanced query logic or discuss SQL beyond practical application in DBMS.

### What is SQL?

SQL stands for Structured Query Language. It is a language like any other in that it has grammar, syntax and some vocabulary. SQL offers a logical interface with relative databases in order to access or manipulate data. Using SQL we can ask the database for specific data, change or delete records and even create tables and fields.

### What is a SQL Query?

The most common SQL query is the **SELECT** query. The **SELECT** query asks the database for specific records organized in a specific way.

An example of a **SELECT** query asking for all tubes in row 5 and less with a DNT indication listed by descending voltage could look like this:

```
SELECT row, col, sec, phase, volts, defect, loc_land, loc_off, beg_test, end_test
FROM report
WHERE row BETWEEN 1 AND 5
AND defect = 'DNT'
ORDER BY volts DESC;
```

The words in upper case are SQL commands instructing the database to respond in a certain way. It isn't necessary to place commands in upper case, although, it does help organize the query at least until you become comfortable working with SQL.

Working line by line through the query let's see what each line does.

- **SELECT:** The defining line of the query, **SELECT** tells the database first that we are looking for data and second what fields we want to see in a response. Each field must be typed as it appears in the database and separated by a comma. Upper or lower case doesn't matter. You may order the fields in any way. The space between the comma and field names isn't necessary but, again, it helps organize the query.

- **FROM:** Tells the database in which table to look for the data. In our example, the desired data is located in the **report** table. Again, the field names in the **SELECT** line must match the field names in the **report** table.

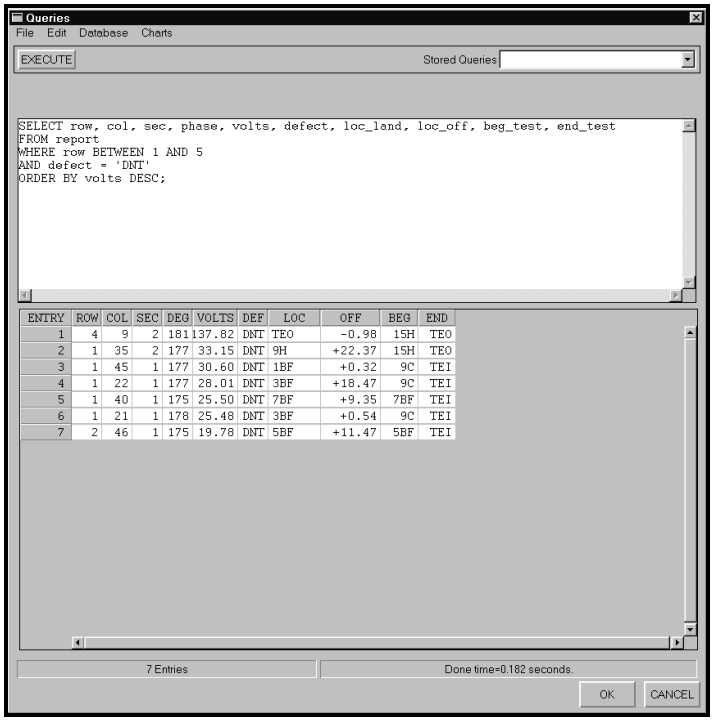
- **WHERE:** Defines what specifics we are looking for. In our example, we want all tubes WHERE the row is between 1 and 5. **BETWEEN . . AND** is a command that tells the database to look between two values - inclusive. Other operators possible are: =, <, >, < =, > =, < > *(not equal to)*.

- **AND/OR:** Extends the main **WHERE** statement and further defines what you are looking for. There can be as many **AND/OR** lines attached to a **WHERE** statement as logic permits. **AND** implies that both statements must be true. **OR** implies that either one or the other statement must be true.

  Both the **WHERE** and **AND/OR** lines follow the same syntax. First the command, then a field name, a designator to indicate the relationship to the value we are interested in, then finally the value of interest.

- **ORDER BY:** Says to organize the data according to which field. In our example, we chose to **ORDER BY** (*or sort by*) volts. To be more specific you can add **DESC** or **ASC**. **DESC** instructs the database to place the records in descending order, **ASC** in ascending.

  Executing this query will return a response similar to the one in Figure 4-14.




| ENTRY | ROW | COL | SEC | DEG | VOLTS | DEF | LOC | OFF | BEG | END |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 9 | 2 | 181 | 137.82 | DNT | TEO | -0.98 | 15H | TEO |
| 2 | 1 | 35 | 2 | 177 | 33.15 | DNT | 9H | +22.37 | 15H | TEO |
| 3 | 1 | 45 | 1 | 177 | 30.60 | DNT | 1BF | +0.32 | 9C | TEI |
| 4 | 1 | 22 | 1 | 177 | 28.01 | DNT | 3BF | +18.47 | 9C | TEI |
| 5 | 1 | 40 | 1 | 175 | 25.50 | DNT | 7BF | +9.35 | 7BF | TEI |
| 6 | 1 | 21 | 1 | 178 | 25.48 | DNT | 3BF | +0.54 | 9C | TEI |
| 7 | 2 | 46 | 1 | 175 | 19.78 | DNT | 5BF | +11.47 | 5BF | TEI |

Figure 4-14. Example SELECT Query

If you note there is a semi-colon at the end of the last line. This tells the database that the query has ended. It is not necessary to place the semi-colon for a query to be valid.

WHERE Statements

In this section, we will go over some simple variations in the SELECT query. All of these focus on the WHERE line of the query. Above we saw the BETWEEN . . .AND command. This is used to set an upper and lower limit and request the values that fall between them.

NOT
Using the NOT command we tell the database to return values *not* matching the ones specified. For example, if you want to see the records for all inspections except *RFO7*, then you might query:

WHERE NOT outage = 'RFO7'

Note the positioning. NOT comes before the field and designator it effects.

IN
Another useful command is IN. In allows us to specify more than one value for a given field. In our example above, perhaps we did not want to see data for *RFO6 and RFO5* as well. We could type:

WHERE NOT outage IN ('RFO7','RFO6','RFO5')

After IN the values are grouped in parentheses and separated by commas. Of course, this command can be used with or without NOT.

Text vs. Numeric Values
Our examples show that when we have a text value, it is placed inside single quotation marks, i.e., *'RFO7'*. When we use numeric values, they do not need to be placed in quotes. For example, *WHERE row IN (1,2,3,4).*

NULL
We can also query on a field when we expect it to have no value. The command for this is **NULL**. If we believe there were some *DNT* indications loaded into the database without voltage readings, then we might use the following query to find them:

WHERE defect = 'DNT'
AND voltage = NULL

This would return all the records with *DNT* in the *defect* field and no value whatsoever in the *voltage* field.

Note: A blank character is not the same as **Null**.

## Things to Remember

- Be aware of the order within the WHERE statement. SQL is logical and as you work through the lines of the statement, the order does matter. What you ask for first, second and so on will limit the records differently. Think through what you want a query to return. Make sure that your entire logic matches what you want. Remember, just because a query runs and returns something doesn't mean it's correct. As long as the logic is good, the query will run; however, make sure it's valid logic.

- You can query any table. The table name goes in the FROM statement. Most queries will be directed at the *report* table.

- A bundle of queries comes with the DBMS software. They are in the *\corestar\queries* directory. These queries make great templates to build on. In most cases there will be a saved query to help you at least get started, if not simply allow you to fill in the blanks.

- It cannot be stressed enough to buy a good book on SQL or have some formal instruction. We have only taken a practical look at the bare bones of SQL. SQL is an extremely powerful tool and the key to maintaining a relational database. Without SQL, you lose an enormous amount of DBMS potential.

  *SQL for Dummies* is an excellent reference book, written in plain language. CoreStar's primary DBMS instructor owns this book and swears by it.

- You can always contact Corestar Technical Support (*see Section 1*) directly for questions regarding SQL and ACCESS.

### *Tutorial-Using DBMS*

The following procedure will take the user through a systematic process to create a database, upload eddy current reports, query the database, plot desired tubes on a map, and print query lists.

## Creating a Database

1. Start the DBMS software.

2. Select Database > Create New Database. A Save As window will appear.

3. Type the desired name in the space provided and click Save. Our model is called "Test.'

4. Select the Map Info button. Fill in the fields as seen in Figure 5-1.

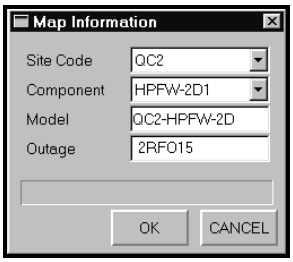



Figure 5-1. Map Information Window

Note: If these options are not in the drop-down menus, then a line will have to be added to the Sites table in EddyAdmin. If needed, the fields should be filled in accordingly:

SITE CODE: QC2
COMPONENT: HPFW-2D1
UNIT: 1
COMP MODEL: QC2-HPFW-2D
OWNER: ComEd
MATERIAL: Copper
TZ: leave as -5

5. When you click OK on the Map Info Window a Question dialog appears telling you that the desired model must be loaded, Figure 5-2. Choosing Yes will automatically load and display the correct component in the DBMS screen.

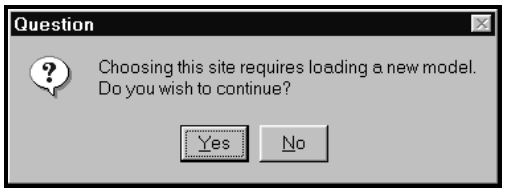



Figure 5-2. Question Dialog

6. Now you should see the information displayed in the Map Info window appear in the Inspection Display area in the upper left of the DBMS screen.

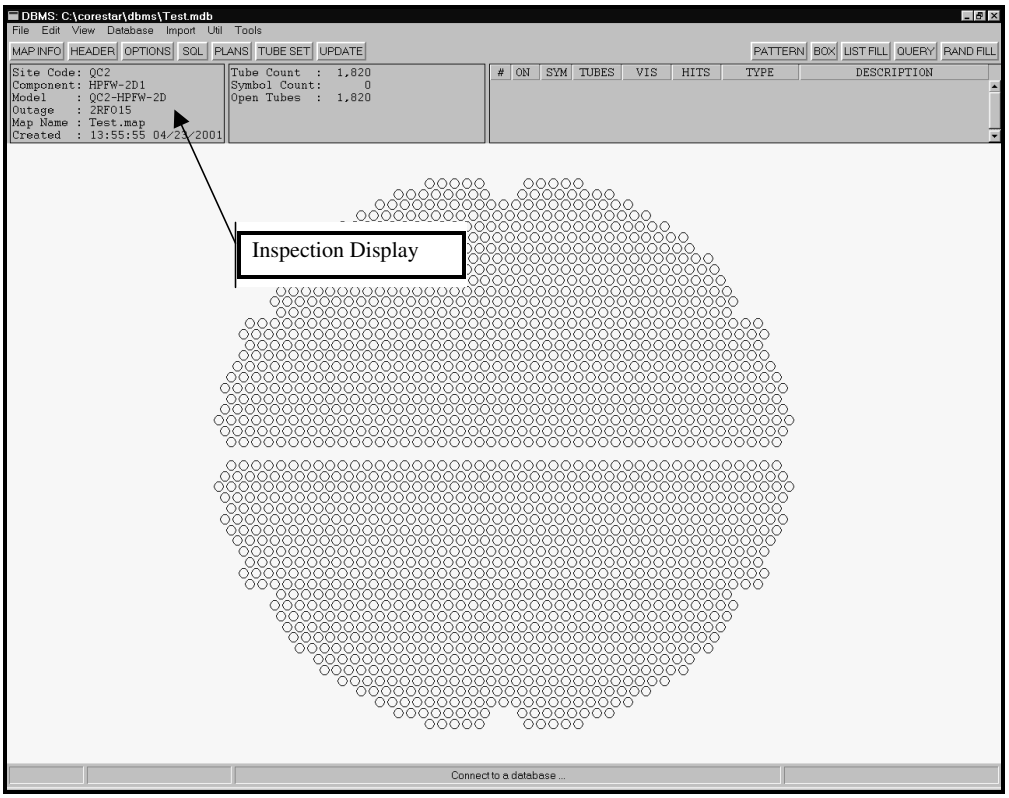



Figure 5-3. Information in Inspection Display

7. Now that the correct component is loaded, we need to place the information specific to this model into the database. Go to **Database > Upload Model** to do this. After selecting **Upload Model** the tables in the database with information about the model are filled in. These are the **landmarks** and **tubes** tables.

   At this point, we have a database ready for an inspection. Now we'll move to importing data into the database. This means uploading reports.

## Uploading Reports

8. Select **Import > Reports**. The **Import Report** window should open.

9. Check the report format. For the purpose of this tutorial, the format should be Corestar binary.

10. Select **File > Open** from the menu. An **Open** window will appear and default to *\corestar\reports*.

11. Find the reports called QC2_Q2R15_HPFW_2D1_1_#_MAN. Select the first report and then holding down the **Shift** key select the last report. All the reports labeled QC2 should be selected. **Click Open.** Now the reports should be listed in the **Report Path Display** as in Figure 5-4.

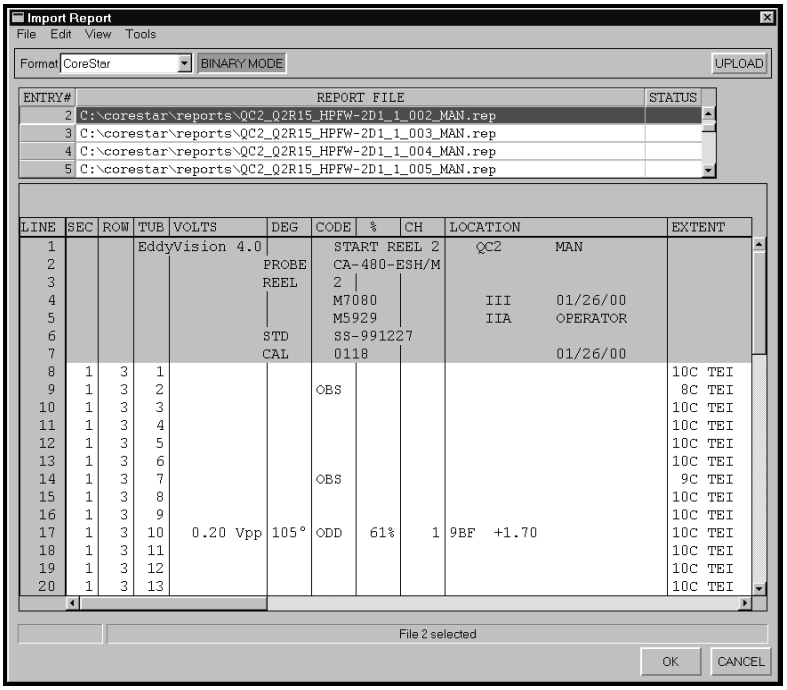



Figure 5-4. Import Report Window

12. Highlight the first report and **click Upload.** When **Done** appears in the **Status** column, then that report has been uploaded to the database. Move down through the list until all reports have been uploaded.

    Once the data has been loaded you are able to query the database and build maps.

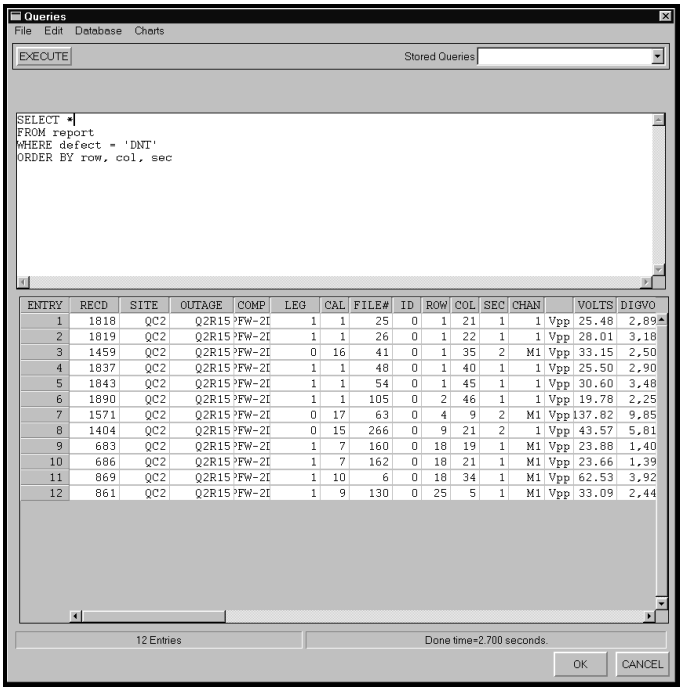
## Querying / Adding Symbols to Map

13. Select the **QUERY** button.

14. In the SQL window type the following query:

    SELECT *
    FROM report
    WHERE defect = 'DNT'
    ORDER BY row, col, sec

    This query returns all fields from the **report** table for those records with DNT in the defect field. Select **EXECUTE** and the query should return 12 records as shown in Figure 5-5.




| ENTRY | RECD | SITE | OUTAGE | COMP | LEG | CAL | FILE# | ID | ROW | COL | SEC | CHAN | | VOLTS | DIGVO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1818 | QC2 | Q2R15 | PFW-2I | 1 | 1 | 25 | 0 | 1 | 21 | 1 | 1 | Vpp | 25.48 | 2,89 |
| 2 | 1819 | QC2 | Q2R15 | PFW-2I | 1 | 1 | 26 | 0 | 1 | 22 | 1 | 1 | Vpp | 28.01 | 3,18 |
| 3 | 1459 | QC2 | Q2R15 | PFW-2I | 0 | 16 | 41 | 0 | 1 | 35 | 2 | M1 | Vpp | 33.15 | 2,50 |
| 4 | 1837 | QC2 | Q2R15 | PFW-2I | 1 | 1 | 48 | 0 | 1 | 40 | 1 | 1 | Vpp | 25.50 | 2,90 |
| 5 | 1843 | QC2 | Q2R15 | PFW-2I | 1 | 1 | 54 | 0 | 1 | 45 | 1 | 1 | Vpp | 30.60 | 3,48 |
| 6 | 1890 | QC2 | Q2R15 | PFW-2I | 1 | 1 | 105 | 0 | 2 | 46 | 1 | 1 | Vpp | 19.78 | 2,25 |
| 7 | 1571 | QC2 | Q2R15 | PFW-2I | 0 | 17 | 63 | 0 | 4 | 9 | 2 | M1 | Vpp | 137.82 | 9,85 |
| 8 | 1404 | QC2 | Q2R15 | PFW-2I | 0 | 15 | 266 | 0 | 9 | 21 | 2 | 1 | Vpp | 43.57 | 5,81 |
| 9 | 683 | QC2 | Q2R15 | PFW-2I | 1 | 7 | 160 | 0 | 18 | 19 | 1 | M1 | Vpp | 23.88 | 1,40 |
| 10 | 686 | QC2 | Q2R15 | PFW-2I | 1 | 7 | 162 | 0 | 18 | 21 | 1 | M1 | Vpp | 23.66 | 1,39 |
| 11 | 869 | QC2 | Q2R15 | PFW-2I | 1 | 10 | 6 | 0 | 18 | 34 | 1 | M1 | Vpp | 62.53 | 3,92 |
| 12 | 861 | QC2 | Q2R15 | PFW-2I | 1 | 9 | 130 | 0 | 25 | 5 | 1 | M1 | Vpp | 33.09 | 2,44 |

Figure 5-5 DNT Query

NOTE: The asterisk (*) means "select all". You can specify which fields you want to see, however, to plot a query on a map the fields **row, col** and **sec** need to be selected.

15. **Click OK** in the **Queries** window to place symbols on the map for this query.

16. You should see a map with 12 red A's. In order to change the symbol we need to **Right-click** on the red A in the legend.

17. You can select any symbol from those displayed. For this tutorial, a solid circle was chosen.

18. To change the color, **Right-click** on the large red square. You can select any color from those on the left of the window or move the cursor on the palate to create a custom color. For this tutorial blue was chosen.

19. **Click OK** on the color window and then **OK** on the symbols window to change the symbol on the map.

20. **Click** in the **description** field in the legend. Type the description "Tube With DNT Indication". Your screen should look something like Figure 5-6.

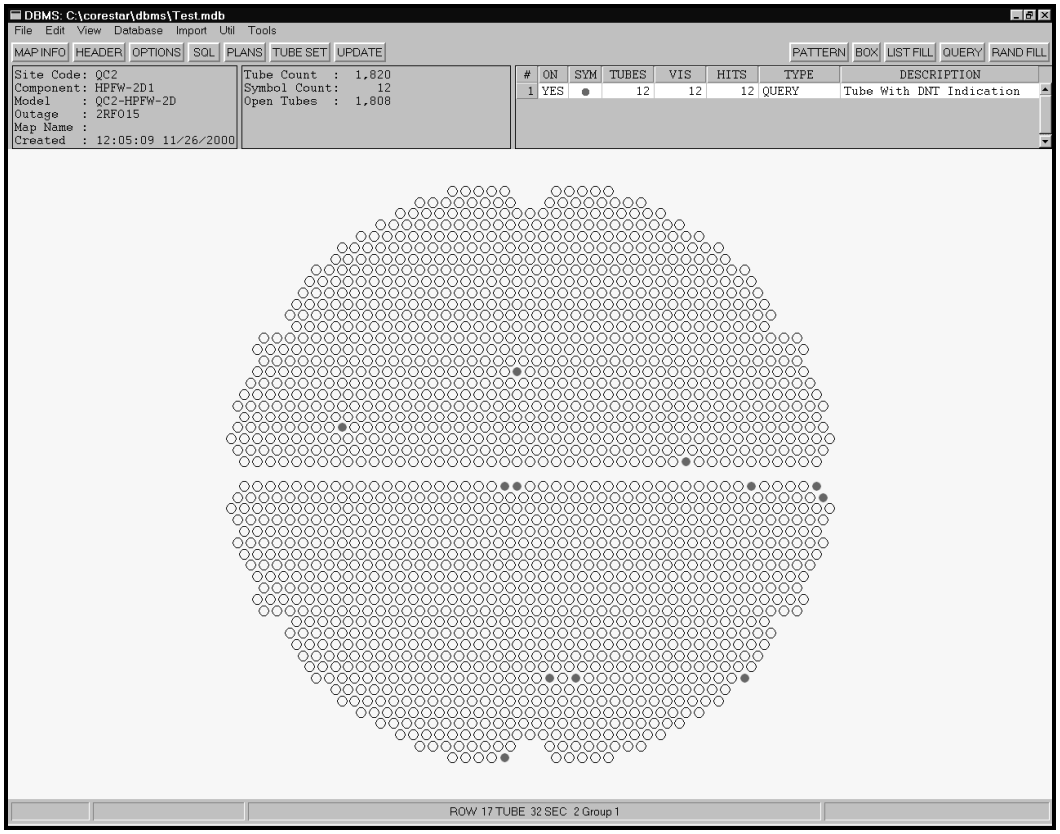



Figure 5-6. Map With Query Plotted

Next, we will add a fill to box around the symbols currently on the map.

21. **Right-click** anywhere on the map. This brings up the **Pop-up Menu**. Choose **Select All Symbols**. All the symbols on the map should now be highlighted in gray.

22. Select the **BOX** button.

23. **Click** twice in the **Radius** box to increase the number and ensure we truly box in the selected tubes.

24. **Click OK** and our symbols should be surrounded by blue B's. **Click** anywhere on the map to deselect the symbols.

25. In order to change the symbol and color of the box fill, repeat steps 16 through 19 for the blue B in the legend. For this tutorial green down triangles were selected. The map should look similar to the one in Figure 5-7.

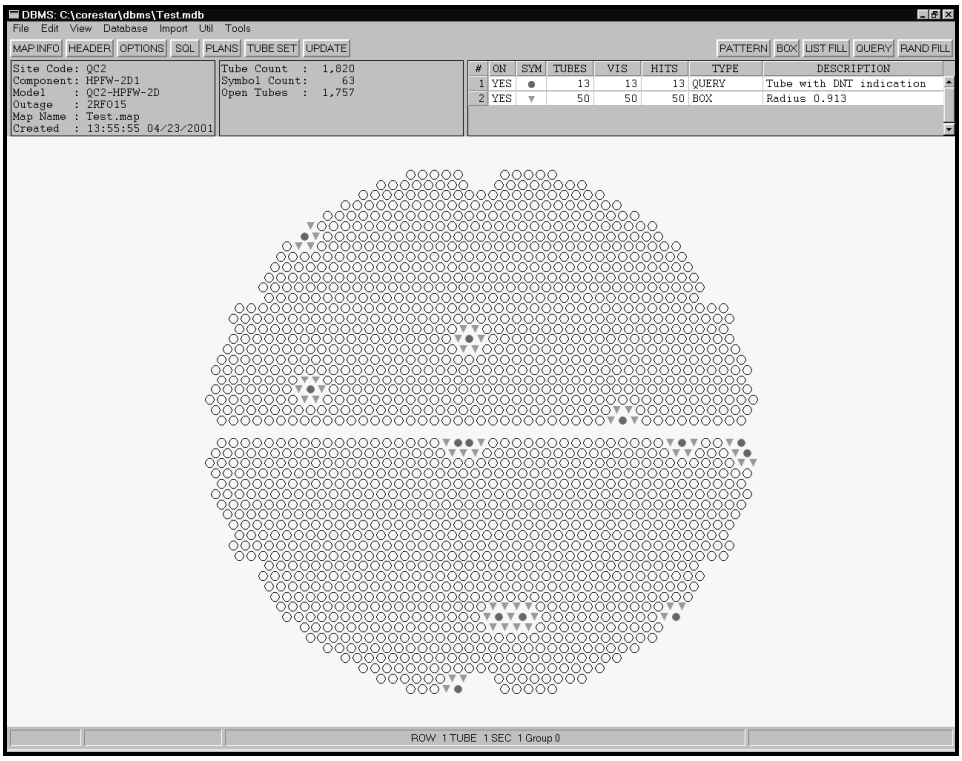



Figure 5-7. Map With Query and Box Fill

26. To complete the map, select the **HEADER** button.

27. You can type whatever you wish in the spaces provided. Experiment with the macros. Remember, what macros you type in the **Template** tab can be viewed in the **Header** tab.

28. After you have selected a header, you can save it by selecting **File > Save As,** typing a file name and **clicking Save**.

29. To save the map select **File > Save Map As**. We called the map "Test". **Click Save** and the map is saved in the *\corestar\maps* directory.

    For most inspections we need to create inspection plans. Let's assume we want the tubes marked on our map to constitute the inspection.

## Inspection Plans

30. Select the **PLANS** button. The **Inspection Plan** window will open.

31. First, select **File > New Plan** from the menu. This sets the Plan ID to 1.

32. Select **Edit > Load Symbols**. This creates a tube list from the symbols on the map. See Figure 5-8.

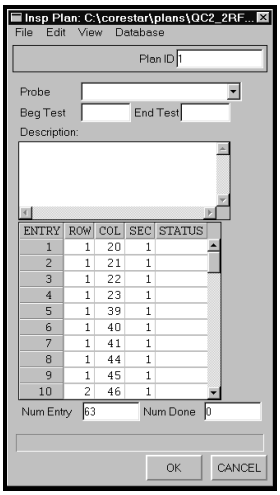



Figure 5-8. Inspection Plan Window

33. In order to load this plan into the database select **Database > Upload.** You should get a message dialog like the one in Figure 5-9 telling you that the upload was successful. This creates records for the selected tubes in the **plan_entry** table.

Figure 5-9. Message Dialog

34. The Corestar acquisition software can operate off a plan file generated from DBMS. This is a flat file stored in the *\corestar\plans* directory. To save this file select **File > Save.** A message dialog similar to the one in Figure 5-10 should appear telling you that the file was saved.

Figure 5-10. Message Dialog

Now let's run a query and set up for a printed report.

## Printed Reports

35. Select the **QUERY** button. The query we typed last should still be in the SQL window

36. Because we are running this query for a report, we will want to select only a few of the possible fields. So instead of the asterisk (*) type the following fields:

    SELECT row, col, sec, phase, volts, defect, loc_land, loc_off, beg_test, end_test

37. **Click** on the **EXECUTE** button. The same tubes should be listed but this time only the selected fields should be seen. See Figure 5-11. This is how the records will appear on a printed report.

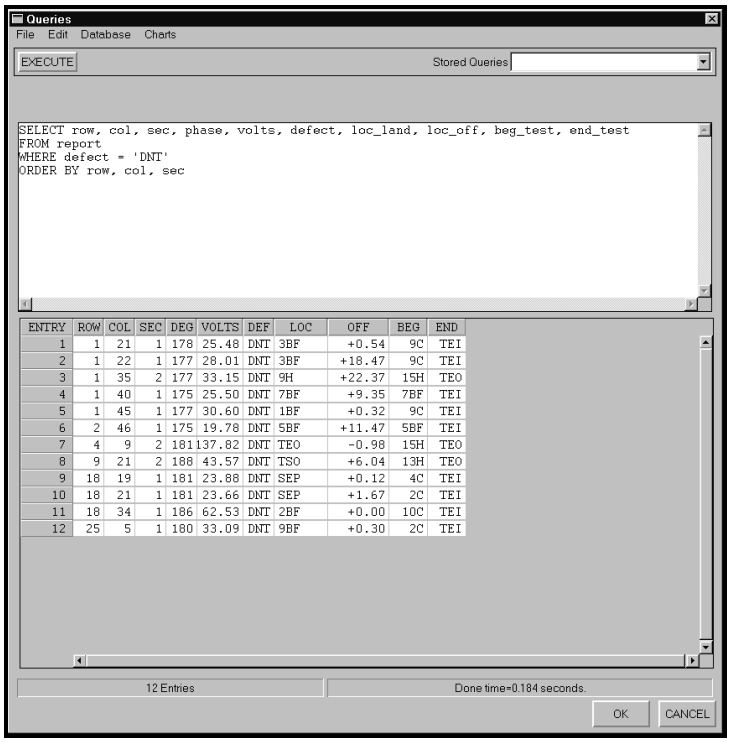



Figure 5-11. Query for Report

38. In order to choose a title, headers and footers select **Edit > Options Setup** in the **Queries** window.

39. Under the headers tab you may type what ever you like as title or page header. Figure 5-12 shows what was typed for the tutorial.

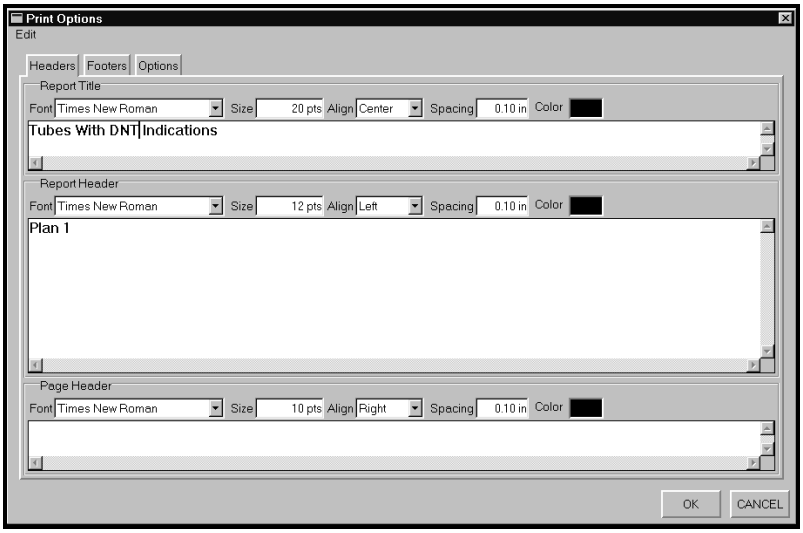



Figure 5-12. Report Headers Tab

The same is true for the **Footers** tab. Figure 5-13 shows our suggestion.

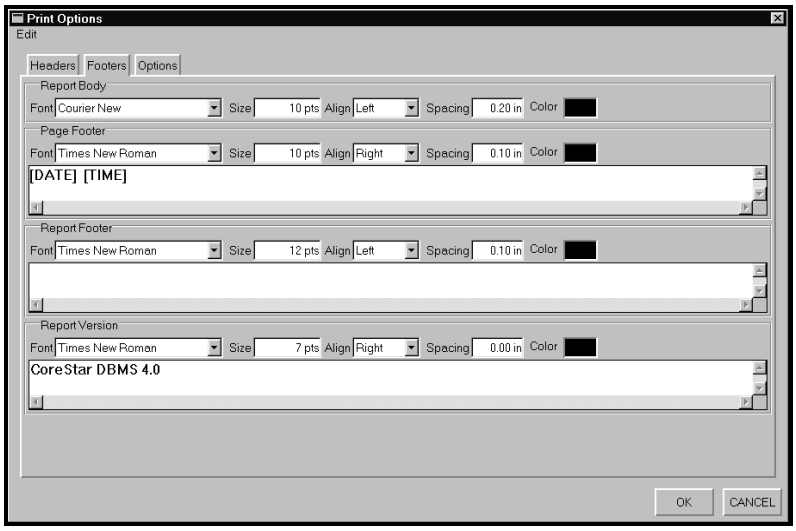



Figure 5-13. Report Footers Tab

40. Lastly, to print the report select **File > Print Setup** and make sure the printer you want is selected. Also, check the print parameters to see if they are what you want. **Click OK** to print the report.

### *Timesaving Tips*

The following *timesaving tips* are offered by the author based on past experiences:

- Organization is the key to success. If you create a map early in the inspection that has all the queries you may need for daily or final reports, then by using the UPDATE button you can get current statistics at any time with only one click.

- Utilize saved queries. Remember that a saved query can be opened and applied to any database. Field names are constant but values are not. For example, outage designations will change from site to site. When you write a query to save, instead of typing a specific value, save the query with VAL1, VAL2, etc. This will create a Parameter Query. For example, to specify a variable parameter in the WHERE statement of in a Parameter Query type:

  WHERE outage = VAL1

  instead of:

  WHERE outage = ‘2RFO9’

This will cause a dialog like the one shown in Figure 5-14 to appear when you execute the query.

Figure 5-14. Typical Parameter Query Dialog

Now you can fill in the needed value without changing the saved, generic query. This is quicker and more consistent than typing a query every time you need it.

Note: Be careful getting carried away using **Parameter** queries in maps with numerous legend entries; otherwise, when **UPDATE** is **clicked**, a dialog like the one shown above will appear for every **Parameter** query in the legend.

- When saving files, be careful when naming them. Once maps, tube lists, or headers start adding up, it can become confusing trying to remember which file is which. The more straightforward a filename - the better. Another good reason for this is co-workers might have to retrieve something and not understand your *custom* shorthand.

- When using multiple symbols on a map keep in mind that what looks good in color may not in black and white or when photocopied. Avoid using the same symbol with two different colors. Make each legend entry unique. This makes it easier for *anyone* to understand the map and copies made on a copier more useful and less confusing.

- When manually selecting tubes on a map, a periphery for example, be sure to keep the **Shift** key depressed. One **click** can deselect everything. Redoing work is never fun.

## A Final Word

DBMS offers everything you need to effectively and efficiently operate a database or manage an inspection. To maximize the potential of DBMS some time should be invested into MS ACCESS and SQL. Many books are available or arrangements can be made through Corestar for support or instruction.