ERP Consulting
Web Development
Custom Programming Solutions
Desktop & Web Applications for Manfact

NorthClark Computing, Inc.

Bill of Material and Where-Used Reporting

User Guide

Web and Desktop Applications
for Manfact by Epicor

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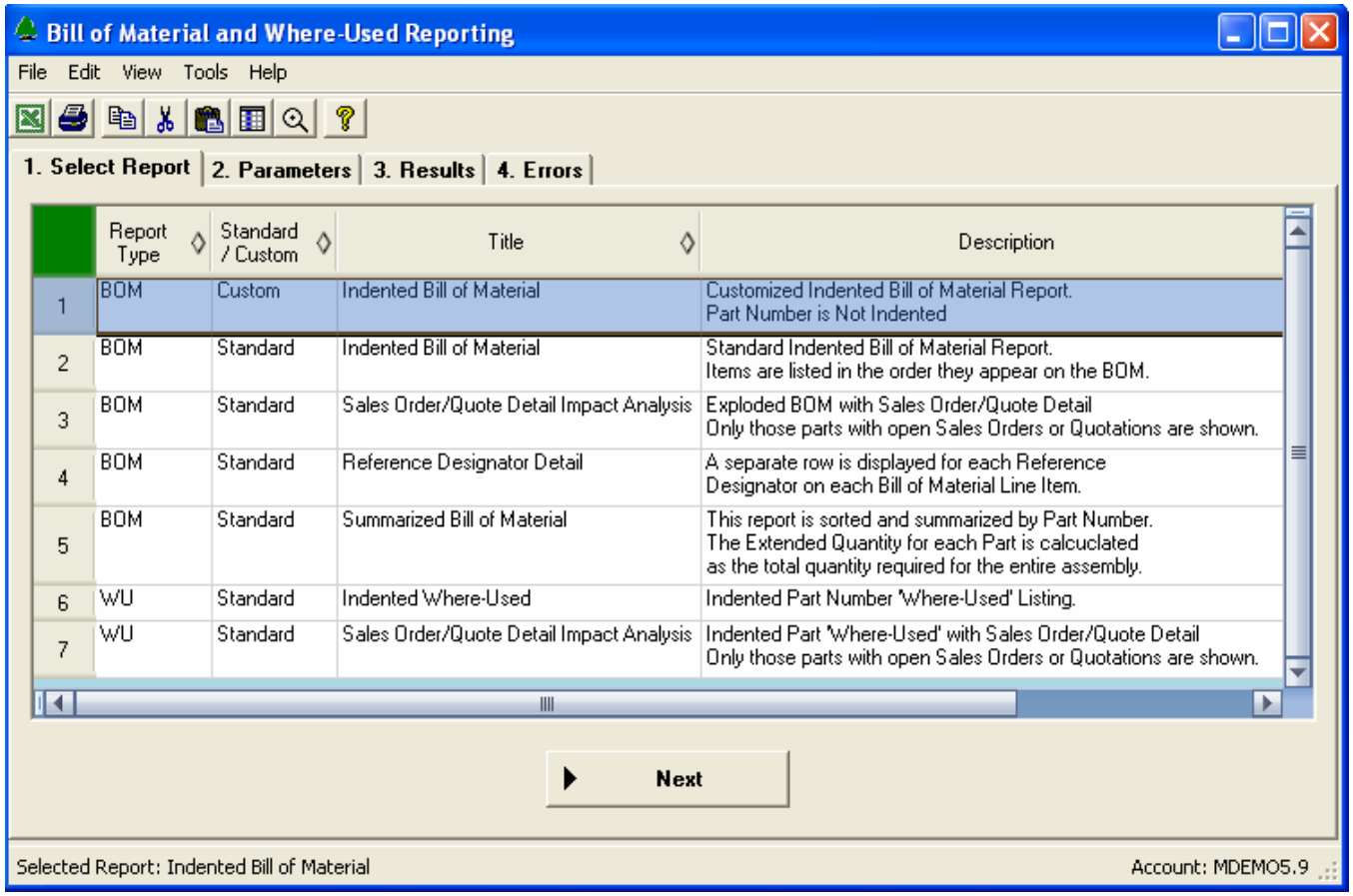
Introduction

The Bill of Material and Where-Used Reporting module (NCC_BOMQ) produces informative reports designed to be viewed on the screen or exported to Microsoft Excel. Select one of the built-in reports, or create your own custom Report Map. Choose to explode, summarize, or normalize your results. Standard reports include:

- Indented Bill of Material
- BOM Sales Order/Quote Impact Analysis
- BOM Reference Designator Detail
- Summarized Bill of Material
- Indented Where-Used
- WU Sales Order/Quote Impact Analysis

Your report may include any data field from the Bill of Material or Parts file. Virtual fields, called I-Descriptors, may also be included. All Manfact BOM and WU files are supported, including Work Order, Engineering, and Bill of Material Revision History.

Bill of Material and Where-Used Reporting

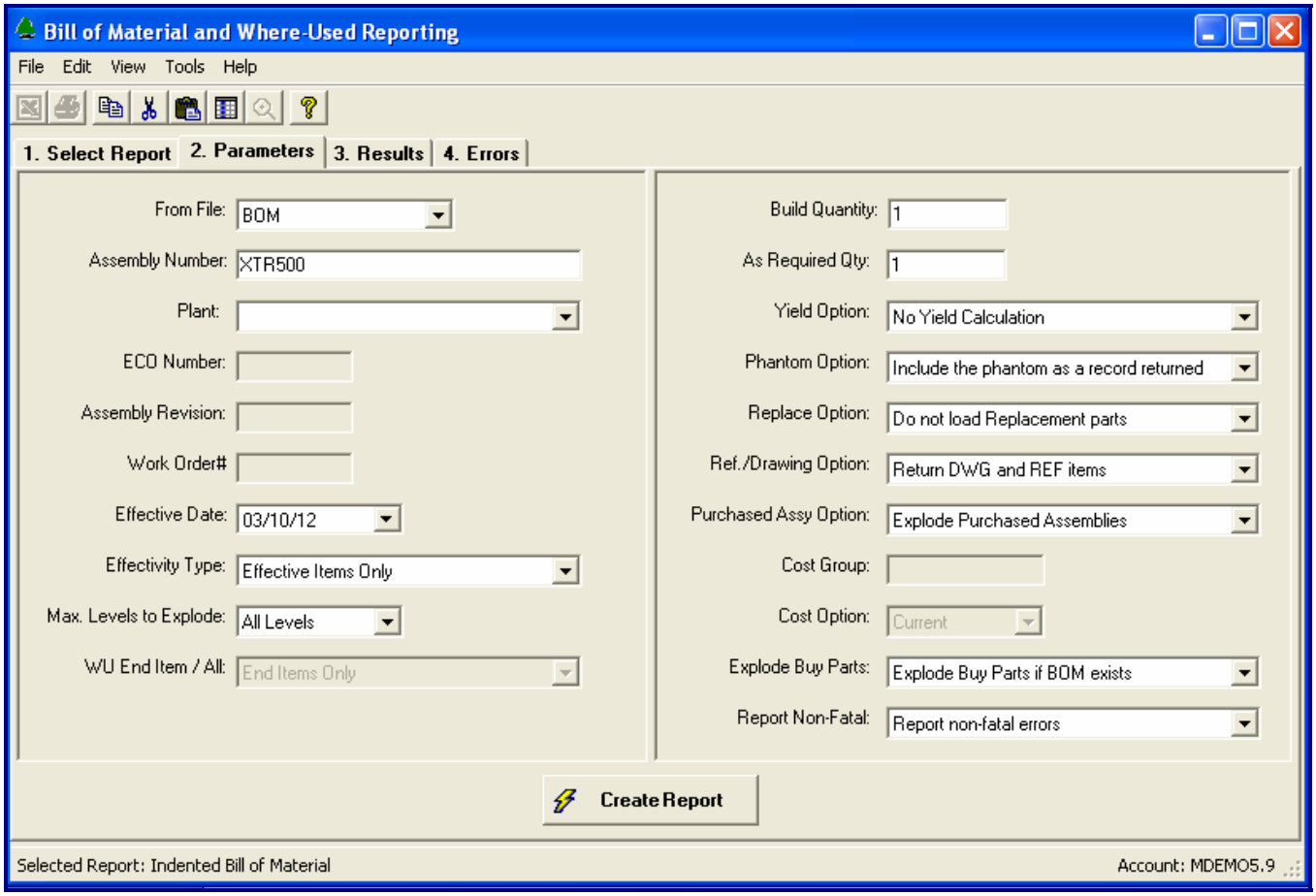


Select a Report

A list of available reports is displayed when the program is started. This will include the standard built-in reports, plus any customized reports the System Administrator may have added. To begin, highlight the desired report, and then click the **[Next]** button at the bottom of the screen to view the Report Parameters.

Report Parameters

Different prompts will be enabled on this screen depending on the type of report you selected. Enter the Assembly or Part Number, modify the remaining options as desired, and then click the **[Create Report]** button to generate the report.



The system saves your parameters, and retrieves them the next time you run the report. Each user will have their own set of default parameters for each type of report.

Available Parameters:

Parameter Name	Description
From File	Select one of the following from the drop-down list. The available options will vary depending on the type of report you are running; Bill of Material or Where-Used: BOM – Production Bill of Material BOMHIST – Bill of Material History for a Revision Level ENGBOM – Engineering Bill of Material WOBOM – Work Order Bill of Material WU – Production Where-Used ENGWU – Engineering Where-Used
Assembly Number or Part Number	Enter the Assembly Number or Part Number you wish to report on. For Bill of Material reports, the identifier must exist on the BOM file. For Where-Used reports, it must exist on the PARTS file.
Plant	If your company uses Manfact's multi-plant feature, and you have different versions of the Bill of Material by plant, then choose the desired plant from the drop-down list.
ECO Number	For Engineering Bill of Material or Engineering Where Used reporting, specify the Engineering Change Control Number.
Assembly Revision	For Bill of Material History reporting, specify the Revision Level of the Assembly you wish to view.
Work Order Number	For Work Order Bill of Material reporting, enter the Work Order Number.
Effective Date	The Effective Date is compared to the Start and End Dates on Bill of Material line items to determine which items should be included on the report. Note, this parameter always defaults to the current date, regardless of previous settings.

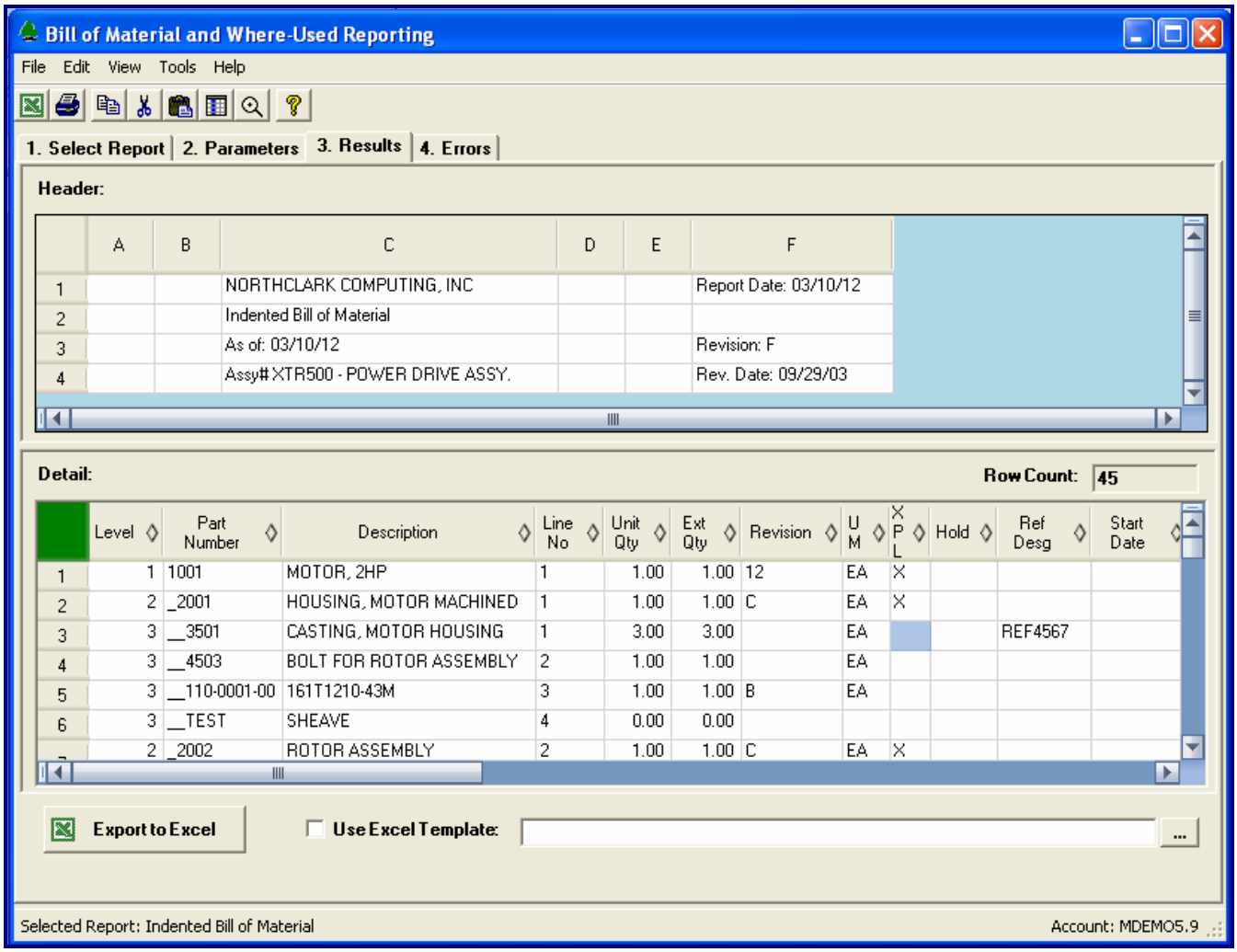
Parameter Name	Description
Effective Type	These options are available for Bill of Material reporting: - Effective Items Only - Non-effective Items - Effective and Non-Effective Items - Effective items for Revision - Non-effective for Revision - All items for Revision Level These options are available for Where-Used reporting: - Effective Items Only - Effective and Non-Effective Items
Max. Levels	These options are available for Bill of Material reporting: - All Levels - Single Level - 2 Levels …through… - 9 Levels These options are available for Where-Used reporting: - All Levels - Single Level
WU End Item/All	For Where-Used reporting, choose to include End Items only, or All Items in the Where-Used structure.
Build Quantity	For Bill of Material reporting, enter the Quantity to Build. This value is used to calculate the Extended Quantity Required on each line item.
As Required Qty	When the line item quantity on a Bill of Material has been designated as "As Required", this value is used as the Unit Quantity.
Yield Option	For Bill of Material reporting only, choose one of the following options: - Assembly Yield from the PARTS file - Usage Yield from BOM file - Assembly Yield and Usage Yield - No Yield Calculation

Parameter Name	Description
Phantom Option	For Bill of Material reporting only, choose one of the following options: - Include the phantom as a record returned - Blow through all phantoms - Blow through phantoms except Stock-able phantoms
Replace Option	For Bill of Material reporting only, choose one of the following options: - Do not load Replacement parts - Load replacements for "Use Up" parts - Load replacement parts for the Top Assembly only - Load replacement parts for components only
Ref. / Drawing Option	For Bill of Material reporting only, choose one of the following options: - Return DWG and REF items - Do not return DWG and REF items Note, when the Unit Quantity on a BOM line item has been designated as “REF” or “DWG”, the Unit Quantity on the report will be zero. If you wish to display the “REF” or “DWG” designator, choose the “Original Unit Qty” field on the Report Map.
Purchased Assembly Option	For Bill of Material reporting only, choose one of the following options: - Explode Purchased Assemblies - Do Not Explode Purchased Assemblies
Cost Group	For Bills of Material, this value is prompted when you have chosen the “Do Not Explode Purchased Assemblies” option. It is used to read the “Purchased Assembly Flag” from the Manfact PARTSDTL file.
Cost Option	For Bills of Material, this value is prompted when you have chosen the “Do Not Explode Purchased Assemblies” option. It is used to read the “Purchased Assembly Flag” from the Manfact PARTSDTL file. You can choose to use either the Current, Standard or Old Purchased Assembly Flag.
Explode Buy Parts	For Bills of Material, the Make/Buy flag on the PARTS file may indicate that an item is purchased, even though a BOM record is on file. You may choose: - Explode Buy Parts if BOM exists - Don’t explode Buy Parts

Parameter Name	Description
Report Non-Fatal Errors	For Bill of Material reporting only, choose one of the following options: - Do not report non-fatal errors - Report non-fatal errors An example of a “non fatal” error would be “Missing BOM for part with XPL of 'X' or 'XP'”.

Results

The Results tab displays your report in two sections; Header and Detail. Note that when the report is exported to Excel, the Header and Detail section will be combined on a single Excel Sheet.



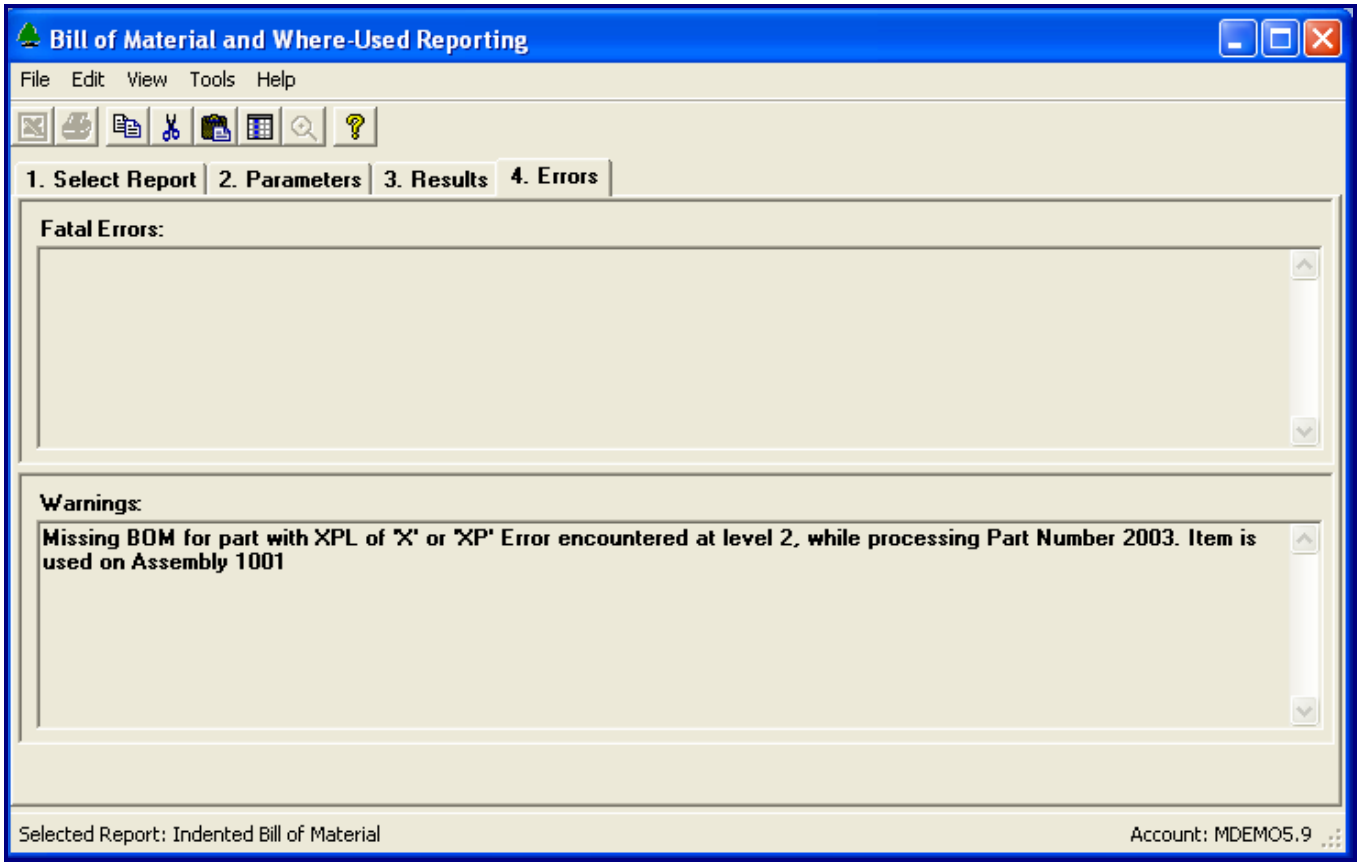
Excel Templates

Click the "Use Excel Template" checkbox at the bottom of the screen if you wish to use an existing Excel spreadsheet as a starting point for your report. The browse **[...]** button may be used to locate your Excel template.

An Excel Template can be used to enhance your report in a number of ways. For example, you might include an image with your company's logo, modify the report headings, or add formulas or macros. Note that when you use a template, the standard column headings are omitted from the report.

Errors

If any errors were encountered during the Bill of Material explosion process, they will be displayed on the Errors tab. This may include both "fatal" errors and warnings.



A "fatal" error means the Bill of Material could not be exploded successfully. An example of a "fatal" error would be a Bill of Material that calls itself (endless loop). In the example above, a warning is displayed when a part defined as an assembly does not have a Bill of Material.

Available Data Fields

Information on the report consists of Header fields, Text and Detail columns.

Header Information

Below is a list of the Standard fields that may be displayed in the Heading of the report. The System Administrator may have defined additional fields that are not included in this list.

Field Name	Description
As Required Qty	The As Required Qty entered on the Parameters tab.
Assembly Number	The Assembly or Part Number entered on the Parameters tab.
Assy Description	The Engineering Description of the Assembly or Part Number
Assy Rev. Level	The Revision Level of the Assembly or Part Number
Build Qty	The Quantity to Build entered on the Parameters tab.
Company Name	Your company's moniker, as defined in Manfact's TABLE.SYS procedure.
Cost Group	The Cost Group entered on the Parameters tab.
Cost Option	The Cost Option entered on the Parameters tab.
ECO Number	The Engineering Change Order Number entered on the Parameters tab.
Effective Date	The Effective Date entered on the Parameters tab.
Effective Option	The Effective Option entered on the Parameters tab.
Explode Buy Parts	The Explode Buy Parts entered on the Parameters tab.
From File	The From File entered on the Parameters tab.
Max. Levels	The Max. Levels to Explode option entered on the Parameters tab.
Phantom Option	The Phantom Option entered on the Parameters tab.
Plant	The Plant
Purch. Assy Option	The Purch. Assy Option entered on the Parameters tab.
Ref/Dwg Option	The Ref/Dwg Option entered on the Parameters tab.
Replace Option	The Replace Option entered on the Parameters tab.

Field Name	Description
Report Date	Today's date
Report Title	The Report Title is entered on the Report Map.
Work Order#	The Work Order Number entered on the Parameters tab.
WU End Item/All	The WU End Item/All entered on the Parameters tab.
Yield Option	The Yield Option entered on the Parameters tab.

Detail Columns

Below is a list of the Standard Detail Columns that may be displayed on the report. The System Administrator may have defined additional fields that are not included in this list.

Field Name	Description
(Seq#)	A sequential number assigned by the System, that may be used to restore a structured Bill of Material to its original sequence after sorting by another field.
Alt_Flag	Flag indicating whether or not Alternate Parts may be used on a Bill of Material line item.
Alt_Parts	List of Alternate Part Numbers and Quantities.
Call_Ref	When using Manfact's "Called BOM" feature, this field may reference the Bill of Material that was called, or it may reference a "Line Change".

Demand information may be displayed for each part, based on open Sales Orders and Quotations:

Field Name	Description
Demand_Cust_ID	Customer Number
Demand_Cust_Name	Customer Name
Demand_Date	Next open Schedule Date on the Sales Order or Quote
Demand_Doc_ID	Sales Order or Quote Number
Demand_Doc_LI	Sales Order or Quote Line Number

Field Name	Description
Demand_Qty	Open quantity
Demand_Type	Type: SO or QUOTE

Field Name	Description
Description	The Engineering Description from the PARTS file.
ECO_No	A list of Engineering Change Order Dates and ECO Numbers.
End_Date	The last date this component may be used on this Bill of Material.
Equiv_Flag	Flag indicating whether or not Equivalent Parts may be used on a Bill of Material line item.
Ext_Qty	The total Extended Quantity required is calculated level-by-level as the Bill of Material is exploded, taking into account the Build Quantity, Unit Quantity and Quantity per Assembly Factor. The calculation is also affected by the As Required Quantity" and the "Yield Option" entered on the Parameters screen. This field is not applicable to Where-Used reporting.
Factor	Quantity per Assembly Factor
Hold	Hold code from the PARTS file. Possible values include: U - Discontinued, but flagged for "use until exhaust" D - Discontinued item, no orders should be recommended O - Obsolete part, should not be issued to work orders
IssuePoint	A code indicating the point in the manufacturing process where this part is to be issued.
Level	A number indicating the current level of a Bill of Material or Where-Used explosion. The part or assembly you are reporting on is always Level 0.
Line_Code	This field will contain an asterisk "*" for lines that are Notes only.
Line_No	The line number where the part appears on the BOM record.
NHA	Next Higher Assembly
Notes	Free-form text

Field Name	Description
Orig_Unit_Qty	If the quantity on a Bill of Material is non-numeric (AR, DWG, REF), the Unit Quantity, which is used for calculations will contain either a zero, or the "AR Quantity" you entered on the Parameters screen. The Orig_Unit_Qty is a text field, and will contain the Unit Quantity or designator as entered on the BOM.
Part_Number	Identifier of a component or sub-assembly.
Ref_Desg	Drawing Reference Designator
Replace_EcoBomChgId	The identifier of an ECOBOMCH record in the Manfact ECO system that defines replacement parts for this item.
Revision	The Revision Level of the component required for this BOM line item.
Start_Date	The date this part became effective for use on this BOM.

Supply information may be displayed for each part, based on open Purchase Orders, Requisitions and Work Orders.

Field Name	Description
Supply_Date	Next open Due Date
Supply_Doc_ID	Purchase Order Number, Requisition Number or Work Order Number
Supply_Doc_LI	Purchase Order or Requisition Line Item Number
Supply_Qty	Balance Due
Supply_Type	PO, REQ or WO
Supply_Vendor_ID	Vendor Number
Supply_Vendor_Name	Vendor Name

Field Name	Description
UM	Unit of Measure from the PARTS file
Unit_Qty	Required Unit Quantity of this item on the Bill of Material. This value is numeric. See also, Orig_Unit_Qty.

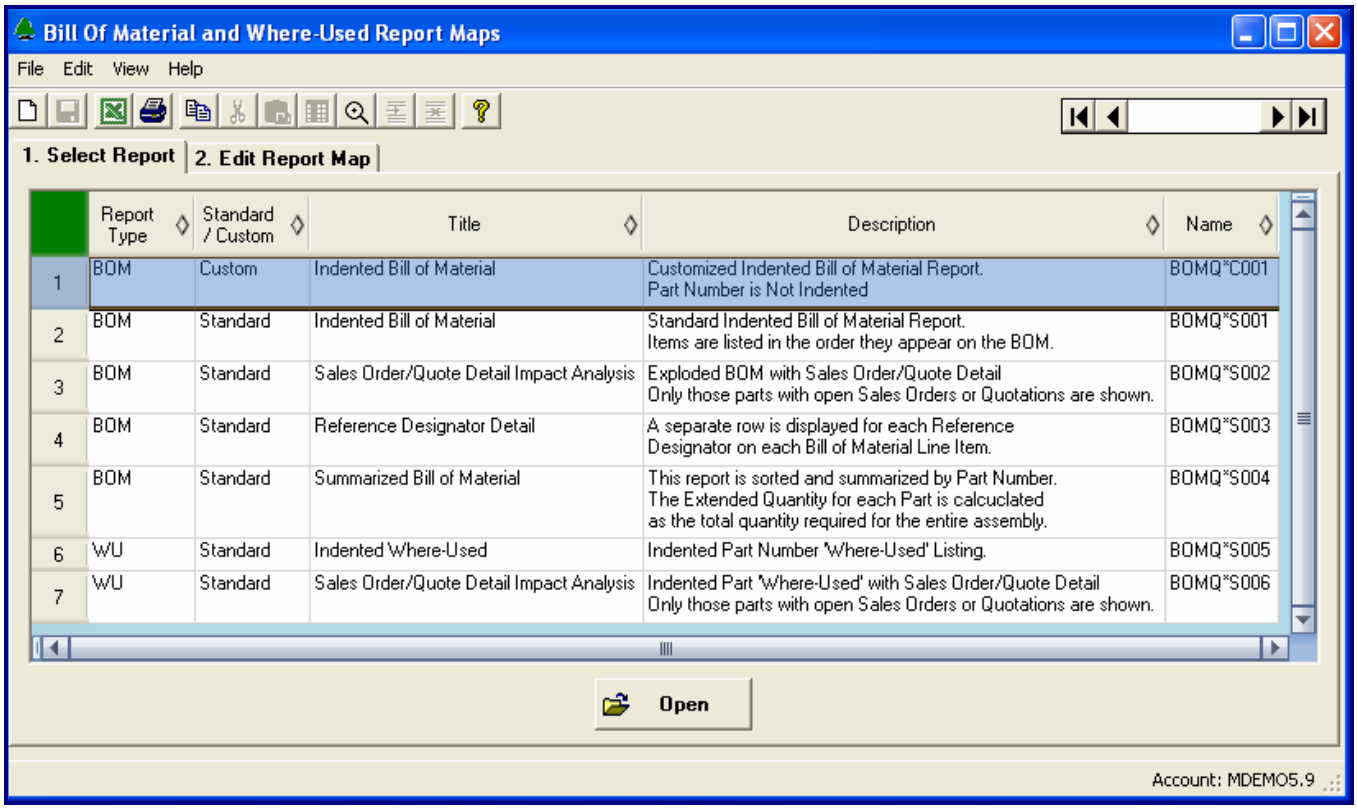
Field Name	Description
UseUp_EcoBomChgId	The identifier of an ECOBOMCH record in the Manfact ECO system that defines replacement parts for this item.
UseUp_Stop	The system will stop looking for “Use Until Exhaust” parts after this date.
XPL	The Explode Code from the PARTS file: (Blank) = Component Part X = Explode (Assembly) XP = Blow through for pick-list (Phantom) L = Line Stock
Yield_Pct	Usage yield factor from the Bill of Material line item.

System Administration

The System Administration view is accessed from the *Tools* menu, and may be used to create custom Report Maps. Report Maps are stored in the NCC_EXCELMAPS file in the Manfact database, and are available to all NCC_BOMQ users.

Select a Report Map

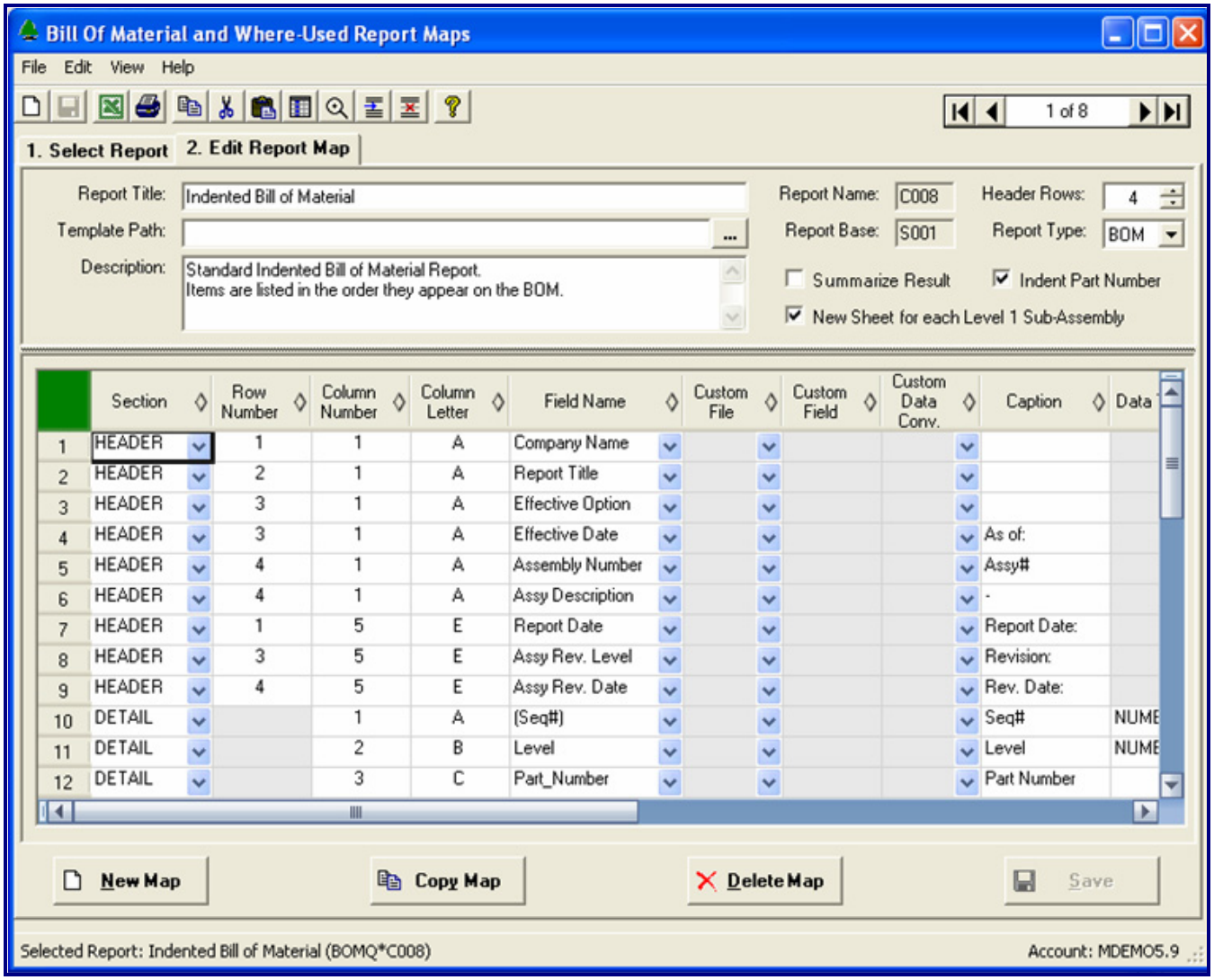
This view displays a list of all of the existing Report Maps. Although Standard Report Maps may not be modified, they may be viewed and copied to create Custom Report Maps.



Highlight the Report Map you wish to copy or update, and then click the **[Open]** button.

Edit a Report Map

If you would like to modify one of the Standard Report Maps, simply open the map and then click the [Copy] button at the bottom of the screen. To build a new report from scratch, click the [New Map] button. Use the Navigator Bar on the top-right corner of the screen to scroll through the list of existing Report Maps.



Report Parameters:

Parameter Name	Description
Report Title	The Report Title is normally displayed in the Heading of the final report.
Template Path	Enter the location of an Excel Template to be used when this report is produced. This entry serves as a default, the user may override it at run-time. Be sure to enter the path to a location that all users will have access to.

Parameter Name	Description
Description	The extended description is displayed on the screen to help the user locate the correct Report Map. It is not included on the final report output.
Report Name	A unique identifier assigned by the system. The Report Name will begin with an "S" if it is a Standard report, or "C" if it is a Custom report.
Report Base	The name of the Report Map this map was copied from.
Header Rows	The number of rows to be reserved for the Header of the report.
Report Type	Bill of Material (BOM) or Where Used (WU)
Summarize Results	Check this box if you want to summarize a Bill of Material. This option will produce one row for each unique Part Number.
Indent Part Number	Check this box if you want to indent the Part Number for each subsequent level on a Bill of Material or Where-Used report.
New Sheet for Each Level 1 Part Number	This option will produce a multi-sheet workbook when the report is exported to Excel. The first sheet will contain a list of all Level 1 Part Numbers, and additional sheets will be produced for each sub-assembly.

Field Definition:

Create one row on the Report Map for each data element to be included on the report. Each data element is either a Header field, Text, or a Detail column. Header fields include standard data elements such as the Report Title, Assembly Number and so forth. Text elements are also displayed in the report heading, and may be used to add captions. Detail columns include Bill of Material line item and Part Number information.

A list of pre-defined fields is provided for the Header and Detail sections of the report. Please refer to the *Available Data Fields* chapter of this document for the complete list. You may also add custom data fields to both the Header and Detail sections of the report.

Custom Fields

The Header section may include any field number or I-Descriptor (virtual field) from either the BOM or PARTS file. The Detail section may include any field number from the BOM file, and any field number or I-Descriptor from the PARTS file. Note that I-Descriptors on the BOM file are not supported for Detail lines.

When referencing a field number in the BOM or PARTS file, do not attempt to use the prompt numbers displayed on Manfact data entry screens. Refer to the file dictionary, or the Manfact user help, to obtain the internal data field number.

Example #1 – Adding a Custom Header Field

Let's say you want to add the Standard Issue Unit of Measure for the Assembly to the heading of the report. The extended help in PARTS.EN tells us this data is located in field #21 of the PARTS file. On the Report Map, select the following:

Section:	Header
Field Name:	(Custom)
Custom File Name:	PARTS
Custom Field Name:	21
Caption:	U/M:

The caption will be displayed in the same cell as the data. If you want to display the caption in an adjacent cell, add another row to the map, and choose "Text" as the section.

Example #2 – Adding a Custom Detail Field

In this example, we'll add the Last Unit Cost to the Detail section of the report. In this case, we need to use an I-Descriptor, since the data is stored in a compound field (Last Cost * Factor). We find the name of the I-Descriptor by listing the dictionary of the PARTS file. The dictionary also tells us the data is stored in MD4 format, so we need to add a Custom Data Conversion to display the information properly.

Section:	Detail
Field Name:	(Custom)
Custom File Name:	PARTS
Custom Field Name:	LAST.UNIT.COST
Custom Data Conversion:	MD4
Caption:	Last Unit Cost

Report Map Details

Column Name	**Description**
Section	Header, Text or Detail.
Row Number	For Header and Text fields, specify the Row Number on the report where the data is to appear.

Column Name	Description
Column Number	Specify the column number on the report where the data is to appear. When you enter the Column Number, the system displays the Column Letter.
Column Letter	Specify the column letter on the spreadsheet where the data is to appear. When you enter the Column Letter, the system displays the Column Number.
Field Name	Select a Field Name from the drop-down list. Choose "(Custom)" to define a field number or I-Descriptor that is not on the list.
Custom File	This field is prompted when you choose "(Custom)" as the Field Name. Select BOM or PARTS.
Custom Field	This field is prompted when you choose "(Custom)" as the Field Name. Enter a numeric field number, or the name of an I-Descriptor.
Custom Data Conversion	This field is prompted when you choose "(Custom)" as the Field Name. Enter a Data Conversion code if needed. Examples include: MD2, MD4 and D2/.
Caption	For Header fields, enter a caption to be displayed in the same cell as the data. For Detail fields, this is the Column Header.
Data Type	TEXT, NUMBER or DATE
Multi Valued	Check this box if the specified field is multi-valued.
Normalize	This option is available when the field is Multi-Valued. When checked, an additional row is added to the report for each value, and the data in all other columns is repeated. Only one data element may be selected for normalization.
Hide Row if Blank	When this box is checked, rows will be hidden from view when the designated field is blank. The user may still choose to view all of the data by toggling the "Show Hidden Rows" checkbox on the Results screen.
Decimals	For numeric fields, enter the number of decimal places to be displayed. This is used for formatting, and does not do any data conversion.

Column Name	Description
Sort By	Select from the following Sort Options: • Primary – Ascending • Primary – Descending • Secondary – Ascending • Secondary – Descending • Tertiary – Ascending • Tertiary – Descending You may choose only one Data Element for each level of sorting.
New Sheet on Break	This option will produce a multi-sheet workbook when the report is exported to Excel. A new worksheet will be created each time the value in this field changes. Note, you must Sort By the field to enable the New Sheet on Break option.

Security

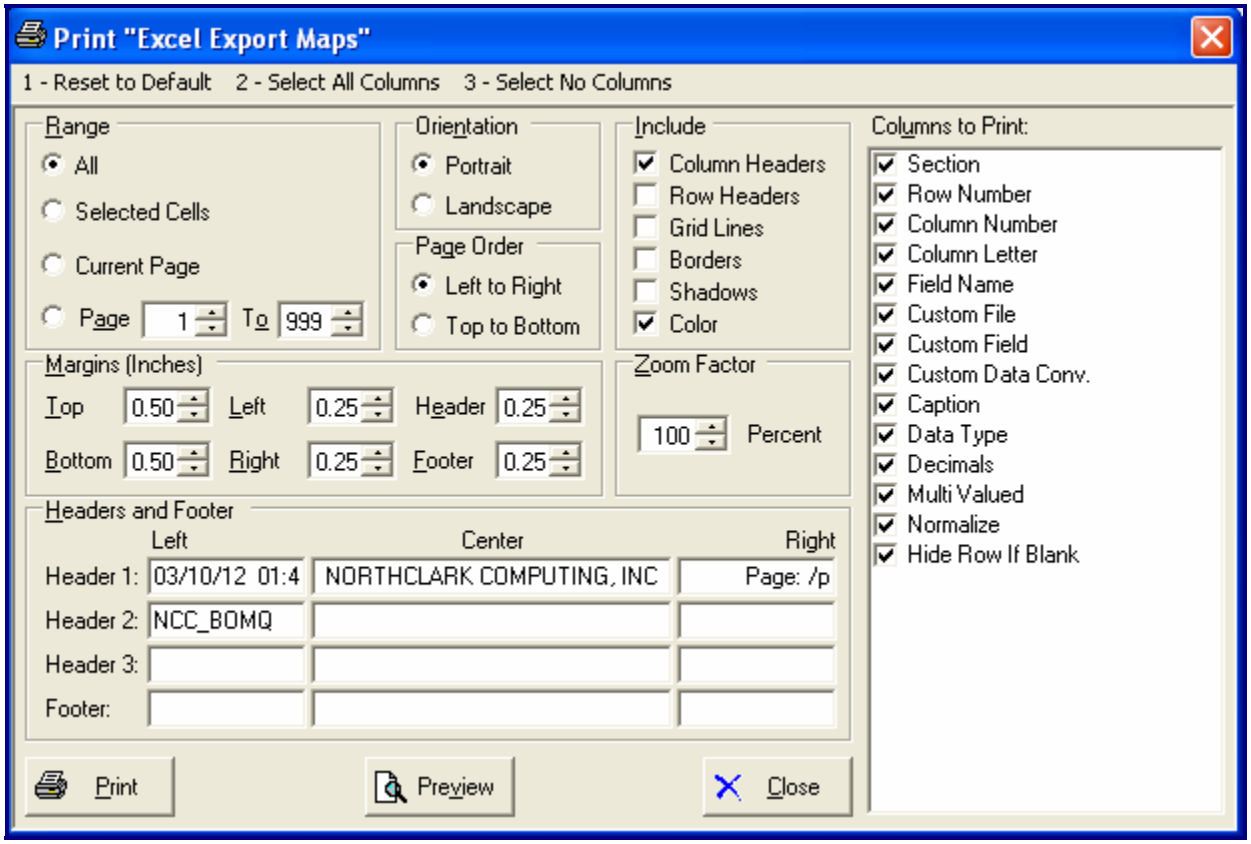
Access to this application is controlled through standard Manfact Security procedures (i.e., SEC.N, SECMC.N). The table below lists the entries that may be added to each user's security table to enable various features.

NCC_BOMQ	User can run all Standard and Custom Bill of Material and Where-Used reports.
NCC_BOMQADMIN	User can run reports, and also create and modify Custom Report Maps.

General Information

Printing a Spreadsheet

Below is a sample of the screen that will appear when you select the **Print** option. This will print the current active spreadsheet, so be sure to click on the spreadsheet you wish to print before choosing the Print option.



Range - Selecting a Print Range

You may choose to print the entire spreadsheet (all), selected cells (those that you have highlighted on the current screen), the current page (only the rows that are currently visible on your screen), or a range of page numbers.

Orientation - Portrait or Landscape

You may print your report in portrait mode (normal) or landscape mode (sideways). Printing in landscape mode will allow you to fit more columns of information on your report.

Margins - Report Margins

You can make your report more attractive by setting the top, bottom, left, and right margins. Reduce the left and right margins if you need to fit more columns on the report.

Units - Inches or Centimeters?

Are the margins you entered expressed in inches or centimeters?

Page Order

If your report is too wide, it may span multiple pages. When this occurs, do you want the report printed from top to bottom or left to right?

What Do You Want to Print?

You can customize the appearance of your report by printing (or not printing) column headers, row headers, grid lines, borders, shadow, and color.

Headers and Footers

Your report may have up to three lines for the heading, and one line for the footer. The system initially displays a default heading, which you may modify if desired.

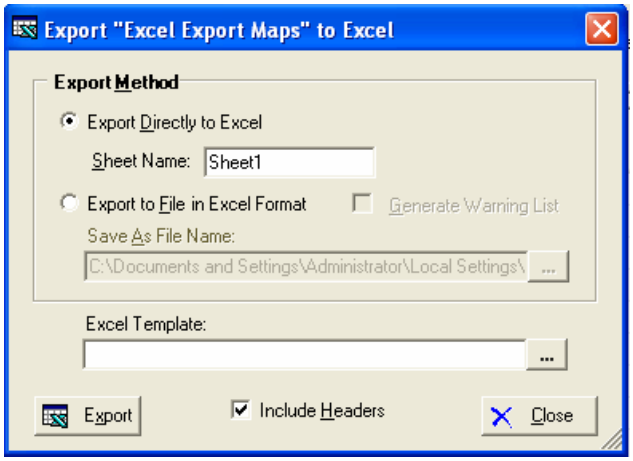
Tip: Use /p to designate a page number.

Which Columns Do You Want to Print?

The columns that are available for printing are listed. Select the columns you wish to include on your report.

Exporting a Spreadsheet to Excel

This screen is displayed when you select the **Export to Excel** option. This will export the current active spreadsheet, so be sure to click on the spreadsheet you wish to print before choosing the Export option.



Save As File Name

Enter the pathname of the file you wish to create. You may Browse the files by clicking the button to locate the drive and folder where the file will be stored.

Sheet Name

Enter the Excel sheet name to create. This will automatically default to Sheet1.

Export to Excel or to a File?

You may export the contents of the display directly to Excel, or you may choose to create a file in Excel format.

Create a Log File?

Select this option to create a log file. The log file contains error messages and other information about how your Excel file was created. The name of the log file is "CreateExcelFile.log", and it will be stored in the same folder as your spreadsheet.

Data Mapping

You may move data to alternate columns by changing the column number or letter. You may also remove a column by removing the row that contains the column information you do not wish to export.

Excel Templates

The browse [...] button may be used to locate your Excel template. An Excel Template can be used to enhance your report in a number of ways. For example, you might include an image with your company's logo, modify the report headings, or add formulas or macros. Note that when you use a template, the standard column headings are omitted from the report.

Include Headers?

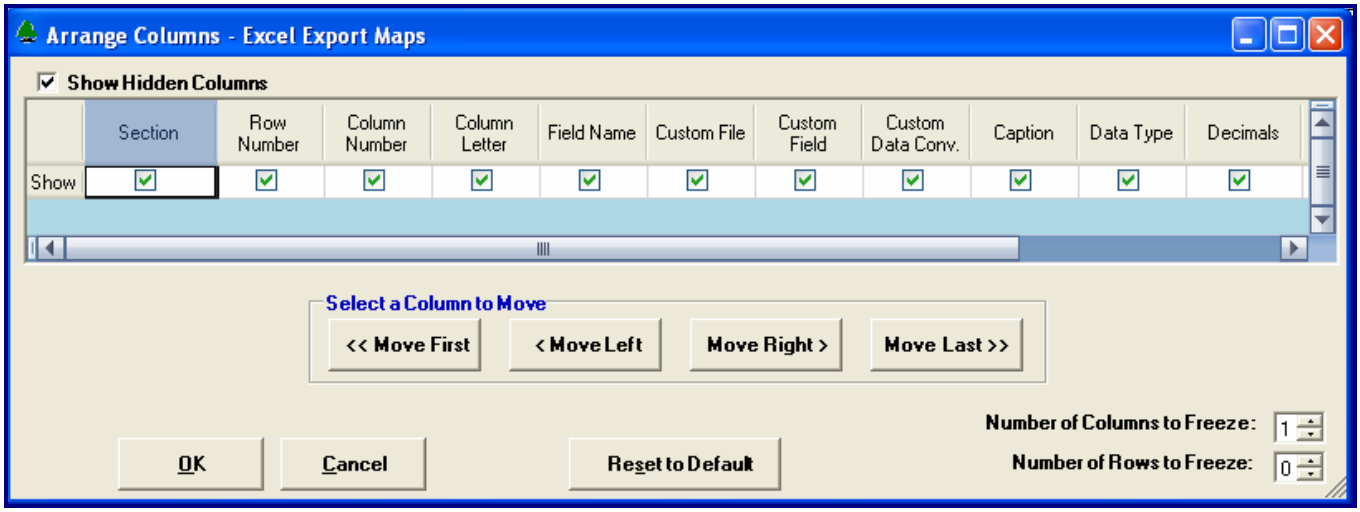
Check this box to include the Column Headers as the first row in the Excel Sheet.

Export Button

After all required information has been entered, click this button to export your data to Microsoft Excel.

Arrange/Hide Columns

Choose Arrange / Hide Columns to hide or change the order of columns displayed on your screen..



Hiding Columns

To hide a column, remove the checkmark that appears under the column heading. Note, you can restore all of the columns by selecting the *Show Hidden Columns* option from the *View* Menu on the main screen.

Moving Columns

To change the location of a column, click on the heading to select it, and then use the [Move] buttons to shift the column to the desired position.

Reset to Default

Click the [Reset to Default] to return columns to their original position.

Freezing Columns and Rows

You may freeze columns and/or rows so they are always visible.

Exit this Window

Click [OK] to implement your changes and return to the Main screen, or [Cancel] to exit without saving. Note, these settings are stored separately for each user, so this will not affect anyone else who uses the application.

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