Using Crystal Reports with Lucity

Beginner - 1

The first of a seven-part series, this workbook is designed for new Crystal Reports® users. You'll learn how to make small modifications to an existing report under a new report name, and link your customized report into Lucity.

Table of Contents

Getting Started ... 3
Crystal Reference ... 3
Standard Toolbar ... 3
Insert Tools Toolbar ... 3
Formatting Toolbar ... 4
Expert Tools Toolbar ... 4
Navigation Tools Toolbar ... 4
Menu Bar ... 5
Custom Reports from a Standard Report ... 8
Finding the Report Location and Name ... 8
Renaming Reports ... 9
Exporting a Report ... 10
Desktop ... 10
Web ... 13
Setup Options ... 14
Options ... 14
Report Options ... 23
Document Properties ... 24
Report Sections ... 25
Modifying a Report ... 26
Saving and Viewing your Report ... 26
Field Types ... 27
Changing Text in Text Objects ... 27
Field Sizing ... 28
Resize a Text Box: ... 28
Resize a Field: ... 28
Deleting a Field ... 28
Delete a Field: ... 28

Field Movement 28
Add a Text Object 29
Adding Fields 30
Special Fields 32
Copying Fields 33
Formatting Fields 33
General Formatting 33
Number Formatting 33
Copying Formatting 36
Alignment of Fields 36
Using Formulas 36
Date and Time Fields 36
Date Fields 37
Time Fields 38
Documentation Comments 39
Inserting Lines and Boxes 40
Lines 40
Boxes 41
“Growing” Fields 42
Report Manipulation 43
Removing Parameters 44
Inserting an Agency Logo 44
Adding a Report to the Module 45
Accessing Reports in Lucity 45
Datasource 46
Set Datasource Location 47
Converting Desktop Reports to use in the Web 52

Getting Started

The Crystal Report software is what is currently used to create the standard reports provided with the Lucity software.

To create or revise reports the **user must own the Crystal Reports software**. The user also needs to have permission to make changes to the reports and add them to the system.

The desktop version of Lucity can only support the functions provided in Crystal XI. The Lucity software can run reports created in later versions of Crystal, however; it cannot use any new functionality. The Web version of Lucity was developed using a newer version of Crystal, Crystal 2008. There is at least one added bit of functionality in this version that is very helpful to have. If you are purchasing the Crystal Report software you should buy at least Crystal 2008.

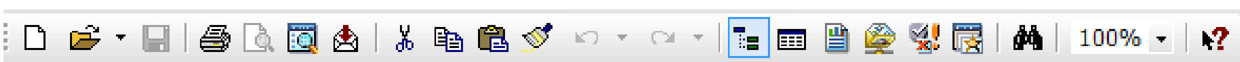
Crystal Versions …9, 10, XI, 2008, 2011, 2013.

Crystal Reference

The tool bar icons sometimes change with the version of Crystal. Screen shots throughout the Help Guides are capturing what was provided with Crystal XI.

Standard Toolbar

Crystal XI



New Report, Open, Save, Print, Print Preview, HTML Preview, Cut, Copy, Paste, Format Painter, Undo, Redo, Toggle Group Tree, Field Explorer, Report Explorer, Repository Explorer, Dependency Checker, Workbench, Find, Zoom Control, Help

Crystal 2008

New Report, Open, Save, Print, Print Preview, HTML Preview, Export, Cut, Copy, Paste, Format Painter, Undo, Redo, Toggle Preview Panel, Field Explorer, Report Explorer, Repository Explorer, Dependency Checker, Workbench, Find

Insert Tools Toolbar

Crystal XI

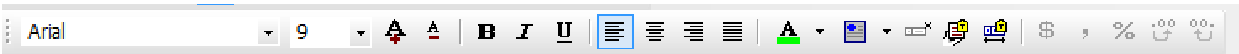
Insert Text Object, Insert Group, Insert Summary, Insert Cross-Tab, Insert OLAP grid, Insert Subreport, Insert Line, Insert Box, Insert Picture, Insert Chart, Insert Map

Crystal 2008

Insert Text Object, Insert Group, Insert Summary, Insert Cross-Tab, Insert OLAP grid, Insert Subreport, Insert Line, Insert Box, Insert Picture, Insert Chart, Insert Map, Insert Flash Object

Formatting Toolbar

Crystal XI



Font Face, Font Size, Increase Font Size, Decrease font Size, Bold, Italics, Underline, Align Left, Align Center, Align Right, Justify, Font Color, Outside Borders, Suppress, Lock Format, Lock Size/Position, Currency, Thousands, Percent, Increase Decimals, Decrease Decimals.

Crystal 2008

Font Face, Font Size, Increase Font Size, Decrease font Size, Bold, Italics, Underline, Align Left, Align Center, Align Right, Justify, Font Color, Outside Borders, Suppress, Lock Format, Lock Size/Position, Currency, Thousands, Percent, Increase Decimals, Decrease Decimals.

Expert Tools Toolbar

Crystal XI

Database Expert, Group Expert, Group Sort Expert, Record Sort Expert, Select Expert, Section Expert, Formula Workshop, OLAP Design Wizard, Template Expert, Format, Insert Hyperlink, Highlighting

Crystal 2008

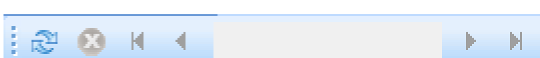
Database Expert, Group Expert, Group Sort Expert, Record Sort Expert, Select Expert, Section Expert, Formula Workshop, OLAP Design Wizard, Template Expert, Format, Insert Hyperlink, Highlighting

Navigation Tools Toolbar

Crystal XI

Refresh, Stop, Show First Page, Show Previous Page, Show Next Page, Show Last Page, Back, Forward

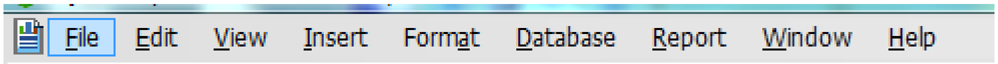
Crystal 2008

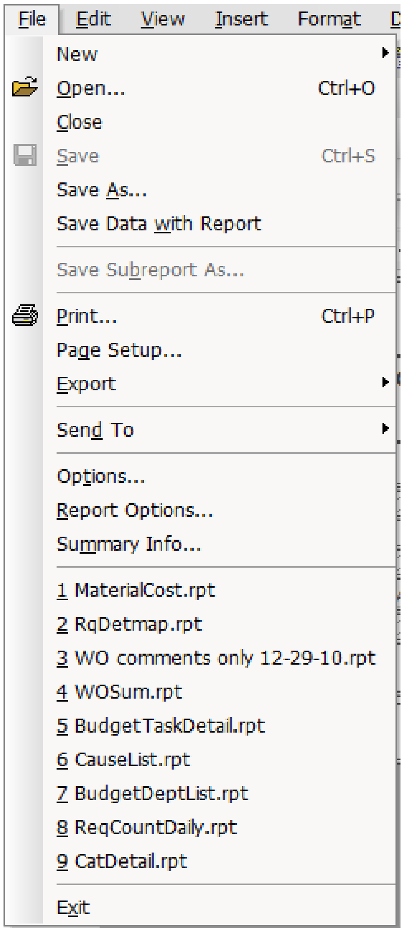


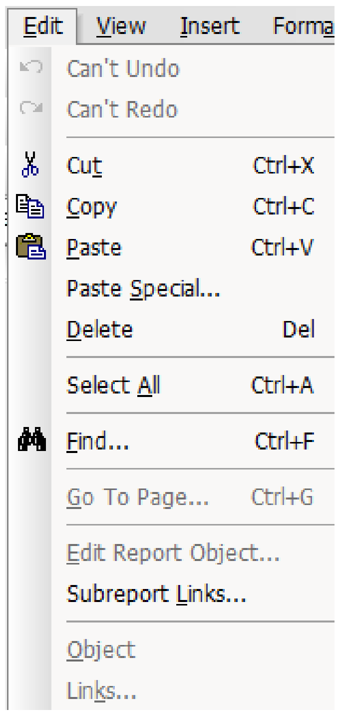
Refresh, Stop, Show First Page, Show Previous Page, Show Next Page, Show Last Page

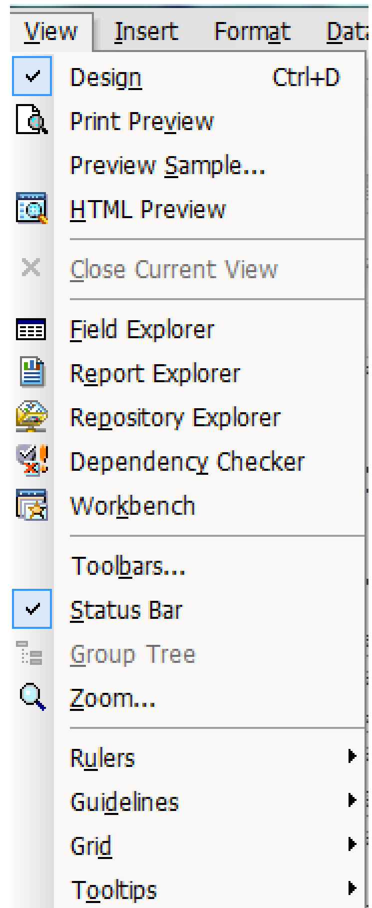
Menu Bar

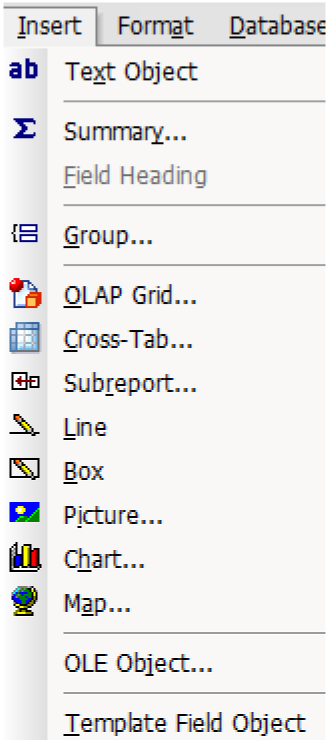
The functions of the toolbar icons are also available in the drop down **Menu Bar** at the top.

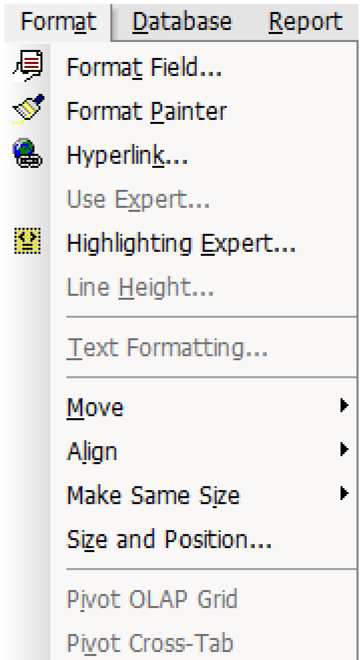


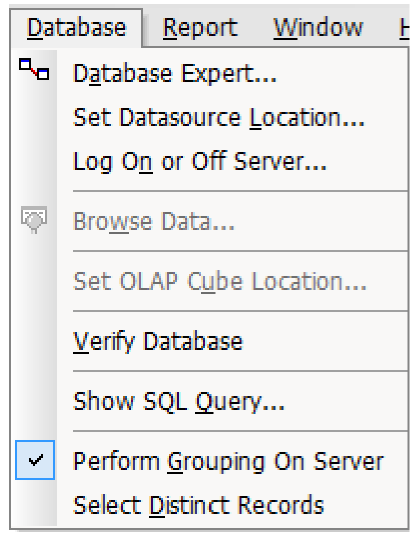


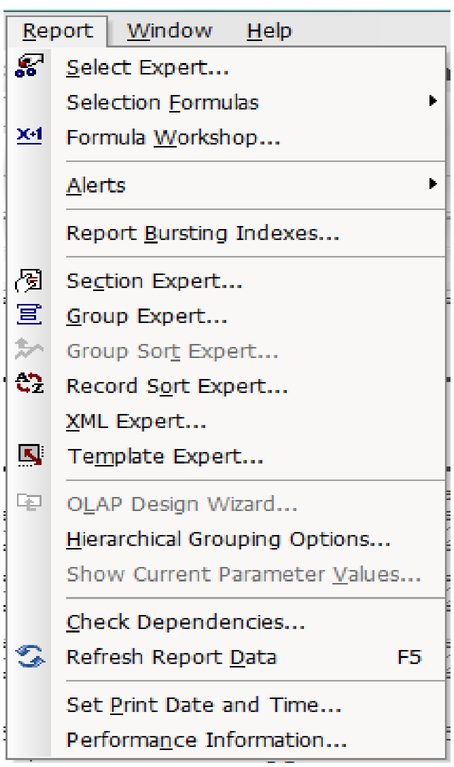


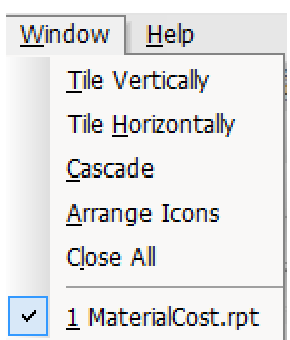


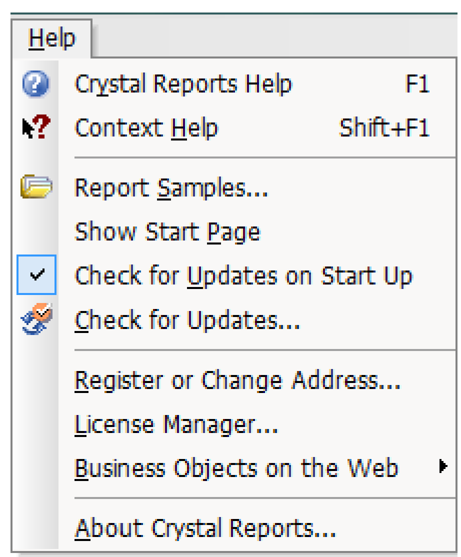

Insert
Format
Database
Text Object
Summary...
Field Heading
Group...
OLAP Grid...
Cross-Tab...
Subreport...
Line
Box
Picture...
Chart...
Map...
OLE Object...
Template Field Object


Format
Database
Report
Format Field...
Format Painter
Hyperlink...
Use Expert...
Highlighting Expert...
Line Height...
Text Formatting...
Move
Align
Make Same Size
Size and Position...
Pivot OLAP Grid
Pivot Cross-Tab

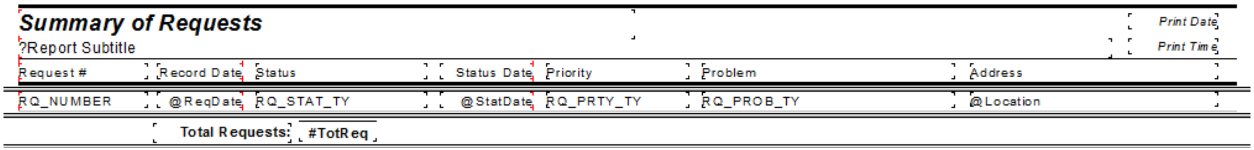

Database
Report
Window
Database Expert...
Set Datasource Location...
Log On or Off Server...
Browse Data...
Set OLAP Cube Location...
Verify Database
Show SQL Query...
Perform Grouping On Server
Select Distinct Records


Report
Window
Help
Select Expert...
Selection Formulas
Formula Workshop...
Alerts
Report Bursting Indexes...
Section Expert...
Group Expert...
Group Sort Expert...
Record Sort Expert...
XML Expert...
Template Expert...
OLAP Design Wizard...
Hierarchical Grouping Options...
Show Current Parameter Values...
Check Dependencies...
Refresh Report Data F5
Set Print Date and Time...
Performance Information...

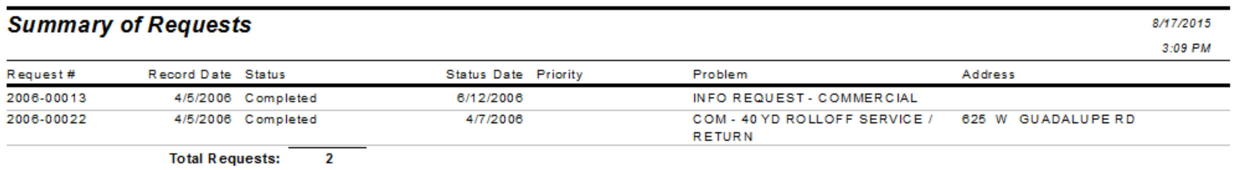

Window
Help
Tile Vertically
Tile Horizontally
Cascade
Arrange Icons
Close All
1 MaterialCost.rpt


Help
Crystal Reports Help F1
Context Help Shift+F1
Report Samples...
Show Start Page
Check for Updates on Start Up
Check for Updates...
Register or Change Address...
License Manager...
Business Objects on the Web
About Crystal Reports...

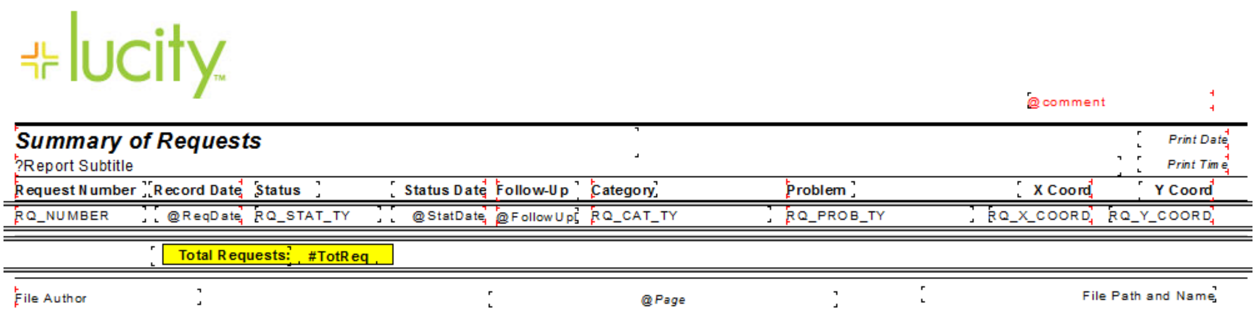
Lucity provides a Request Summary Report (**ReqSum.rpt**) that looks like this:



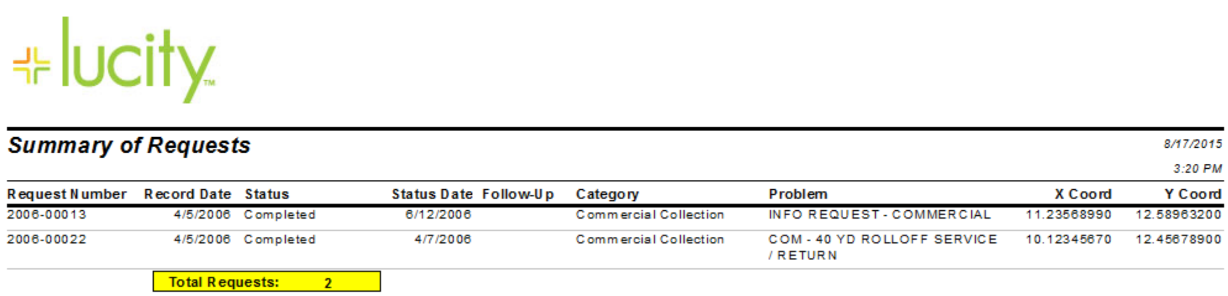
Preview



We would like to modify the report to look like this:



Preview



Some of the changes include adding a company logo, changing column headers, adding text objects, adding data fields, creating formulas and formatting.

Custom Reports from a Standard Report

Finding the Report Location and Name

The first step in modifying a standard Lucity report is to identify the report name and location so a copy of the report can be created to modify as a new custom report.

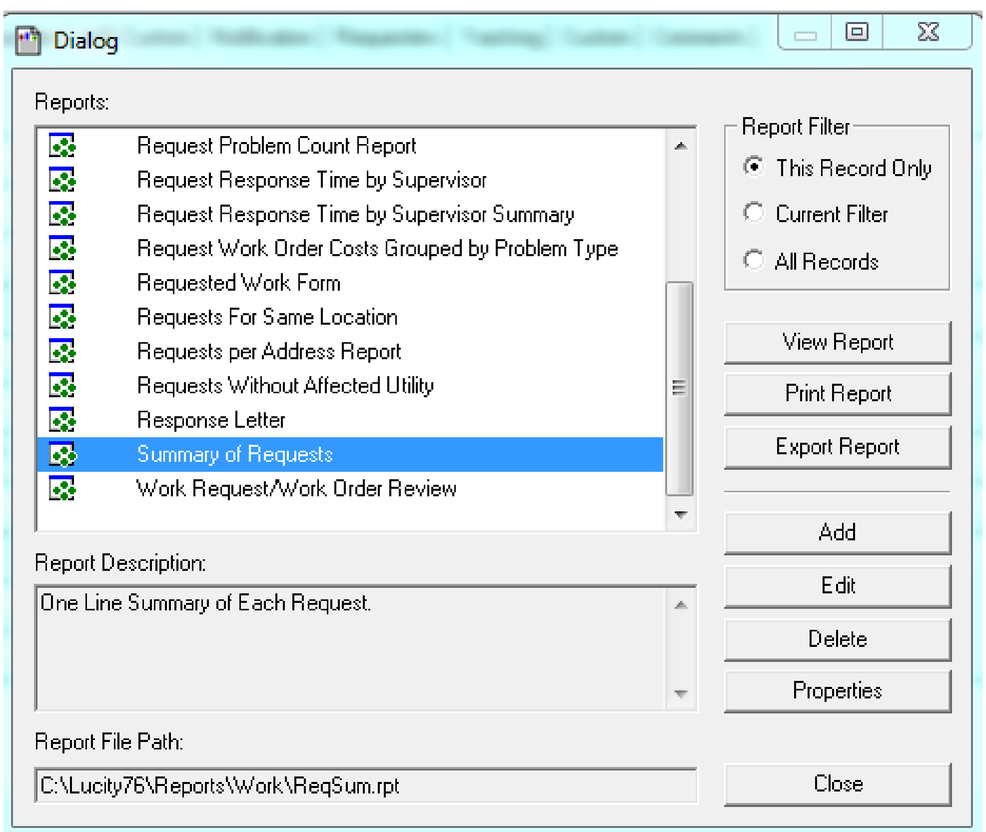
1. Open the Lucity module where the Request Summary Report is located.
   - Select **Work**>>**Request** from the Lucity main menu.
2. Open the *Reports* dialog. Click the report icon on the module toolbar.
3. Locate the report to be modified and highlight it.

   Summary of Requests

4. You'll see the *Report File Path* at the bottom of the dialog box. This path tells you important information about the report.
   - The first part of the path tells you where the report file is located. In our example below, the report is located at **C:\Lucity76\Reports\Work**.

> *Note: Lucity report files are stored in the shared files location designated during your initial installation. This is typically on a file server, but could be on your local machine. In the path shown below, C is a mapped drive. This could also be a UNC path using the full server name.*

   - The report name appears after the last backslash. As you can see below, this report is named **ReqSum.rpt**.



In the report location, the Reports Directory can be sorted by **Name** or **Date Modified** by clicking on the title in the upper bar.

Renaming Reports

If you modify a report and save it under the original name, the changes you made will be overridden the next time Lucity is upgraded. Thus, reports that are modified must be saved under a new name in order to be used.

> ***Note:*** *You must have adequate permissions to save the modified reports. If you are not sure whether you have these permissions, check with your system administrator.*

1. You'll want to make a copy of the report before you begin working on it. You can do this by simply exporting the report from the Lucity module's Report List to the Report Directory under a different name.

2. It's a good practice to establish a naming convention for your custom reports that makes them easy to distinguish from the Lucity standard report names. For example, you might want to add a two or three letter abbreviation for your company or organization or perhaps your initials to the original report name as a prefix or suffix.
    - Some sample custom report names are **LC_ReqSum.rpt** or **ReqSum_LC.rpt**.
    - Adding the abbreviation to the end of the report name (before the .rpt extension) will allow the custom report to be sorted with the original.
    - Adding the abbreviation as a prefix will sort all of your custom reports together.

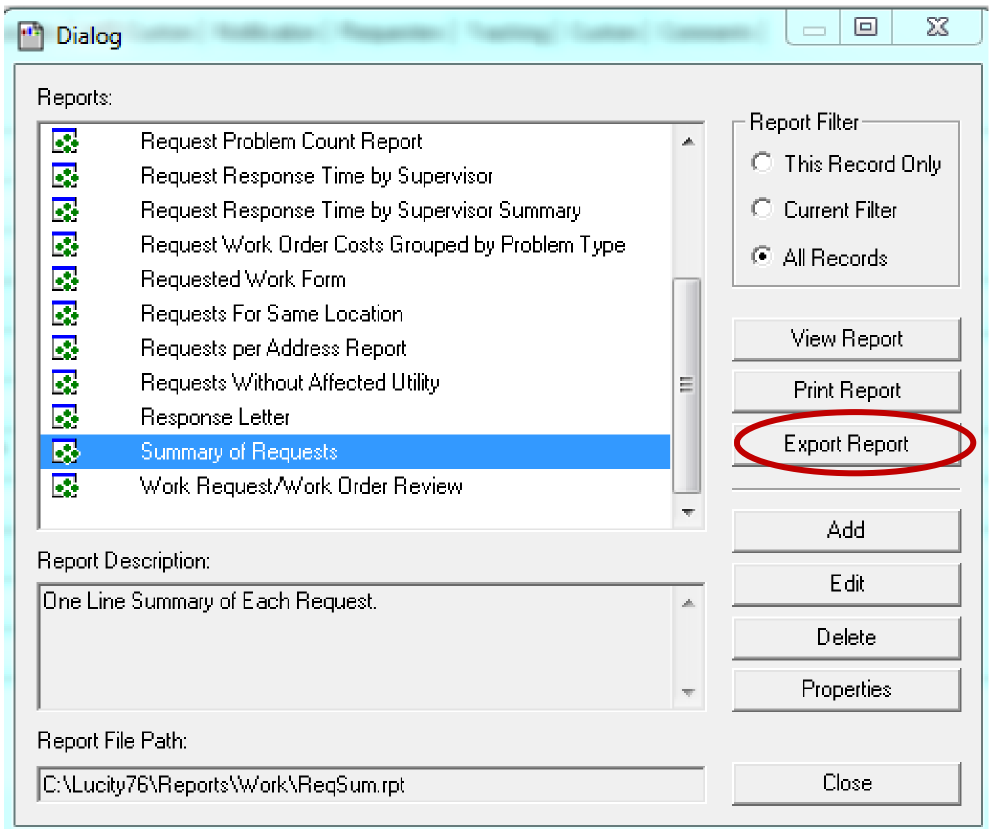
3. Lucity reports store database connection information. When the report is run in Lucity, the program replaces this connection information with connection strings specific to the customer's database configuration during run-time. When you export a report, the database connection information used at run-time is saved. This is the preferred method for handling Lucity reports and will ensure that the report stays pointed to the correct data set so that the report can be run out in Crystal.

Exporting a Report

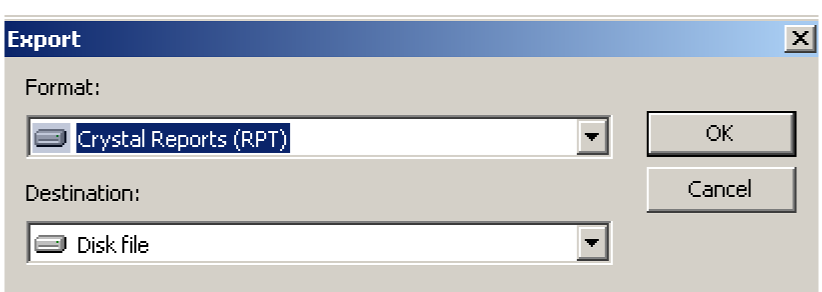
As we mentioned above, the preferred way of handling Lucity reports is to export them. This allows you to rename the report and make modifications as well as maintain your database connection information. Follow the steps below to export a report:

Desktop

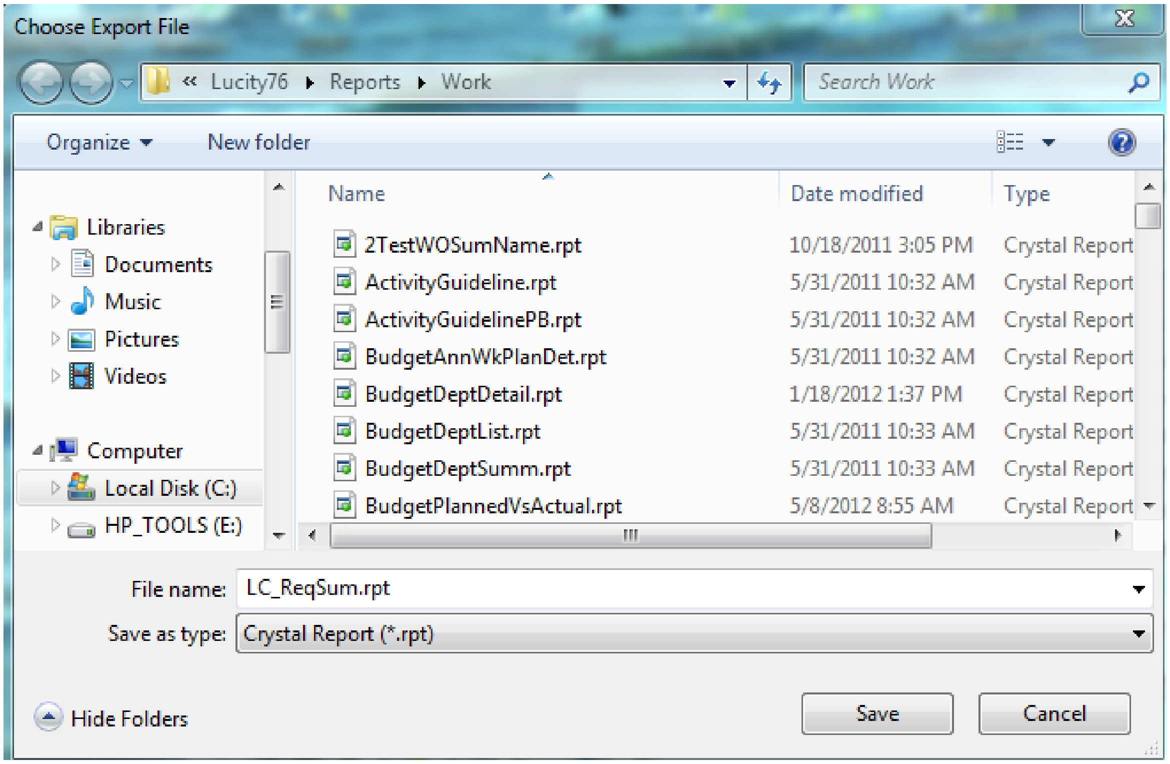
1. Within the Reports dialog click *All Records*.
2. Highlight the report you'd like to copy and select *Export Report*. (Wait)



3. An Export dialog will appear.
   a. Select "Crystal Reports" from the Format drop down box.
   b. Then, select "Disk file" in the Destination drop down box.
   c. Click *OK*.

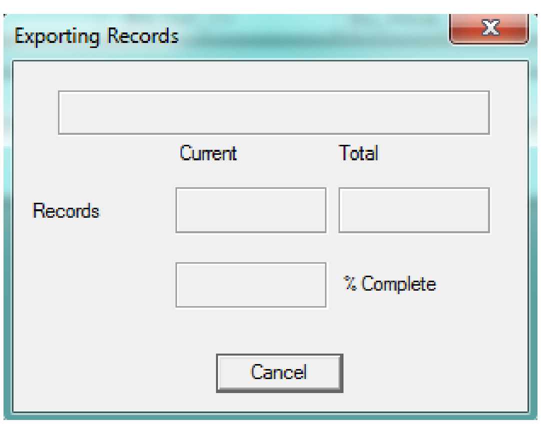


4. The following dialog will appear:

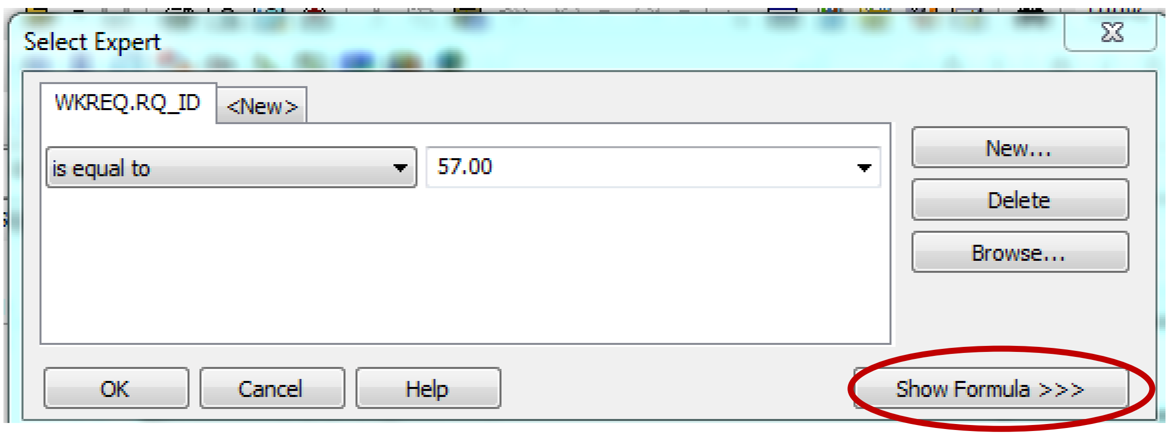


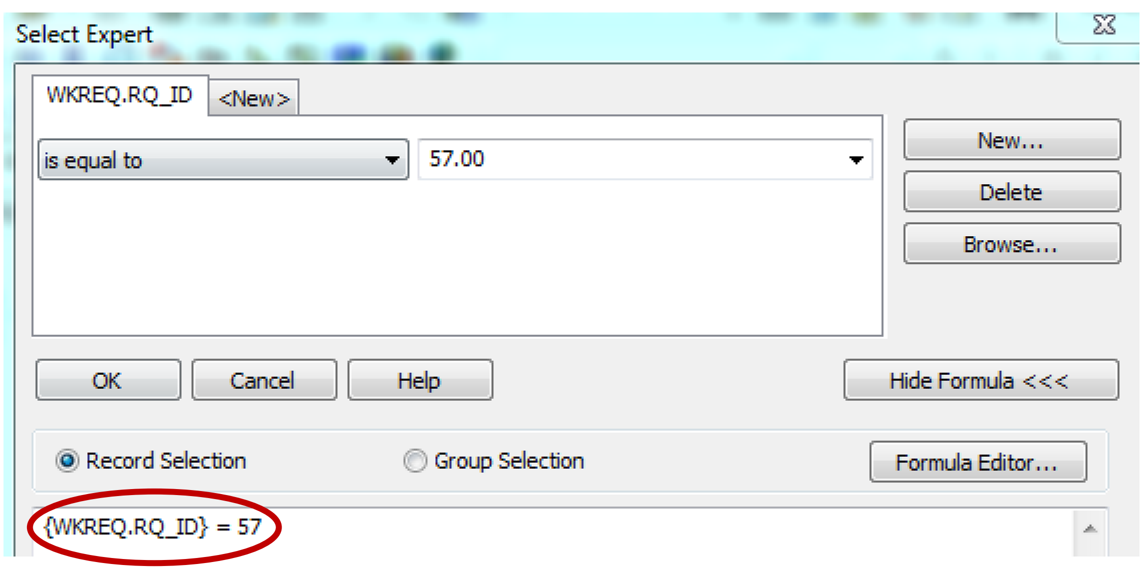
5. Find the location where the report is to be stored. It is recommended that you use the default report location discussed in the previous pages.
6. Type in a new File Name (**LC_ReqSum.rpt**).
7. Click *Save*.
8. At this point the report needs to run, the subtitle query is optional but almost any other query such as dates must be entered, then click *OK*.

Note: If the Export takes more than a few seconds then cancel and change the Report filter to "This Record Only". This may be necessary for complex reports, especially ones with subreports. Then Export (follow above steps 2 - 8).



9. Close the Report dialog.
10. Minimize the Lucity module.
11. In the Reports Directory, open the new report that was just exported.
    - On the report title either Right click and select *Open* or double click.
12. From the menu bar at the top of the screen, select *File*.
13. **Uncheck** the *Save Data with Report* option.
14. Click *Save*.
15. If the report is Exported with *This Record Only* then the *Select Expert* needs to be opened and the ID selection formula deleted.
    a. Click *Select Expert* .
    b. Click *Show Formula*>>>.





    c. Click and drag over the formula.
    d. Press Delete key to remove.

e. Click *OK*.

f. Click *Save*.

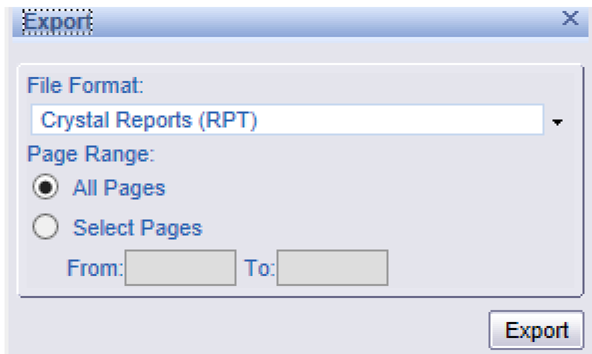
You are now ready to begin making modifications to the report.

> *Note: Reports with "secure" fields may show as "Hidden" but this is temporary and can be changed when refreshing the report and choosing the "Prompt for new parameter values". If date fields were required to run the report these too would be temporarily placed in the report until the report is refreshed and new parameters are given.*

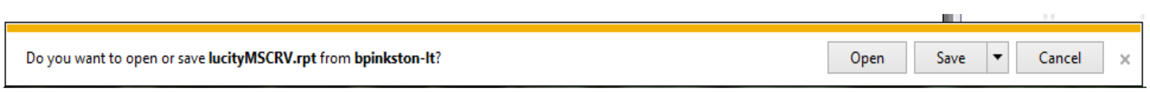
Example 1 and Example 2

Web

1. In the Report Dialog click on the report to be Exported.
2. Run the report with **Selected Records** and the **Advanced View** (HTML) options.
3. Once the report has run, select the **Export this report** option in the top tool bar.
4. This opens the following Dialog. Click **Export**.



5. The referenced report name in this example is lucityMSCRV.rpt and is not the actual file name, ignore this. Under the **Save** options select **Save as** then browse to the location and give the file a new name.



6. Select the **Open** option.

7. In the tool bar select **File**, **UNCHECK** the **Save Data with Report** option.
8. Open the *Select Expert* and remove the formula for the ID field that was placed in here because the report was run with **Selected Records**.
9. Click *Save*.

You now have a copy of the report with a new name and pointed to your data. The User ID and Password for your database are required to run the report away from the Lucity.

Setup Options

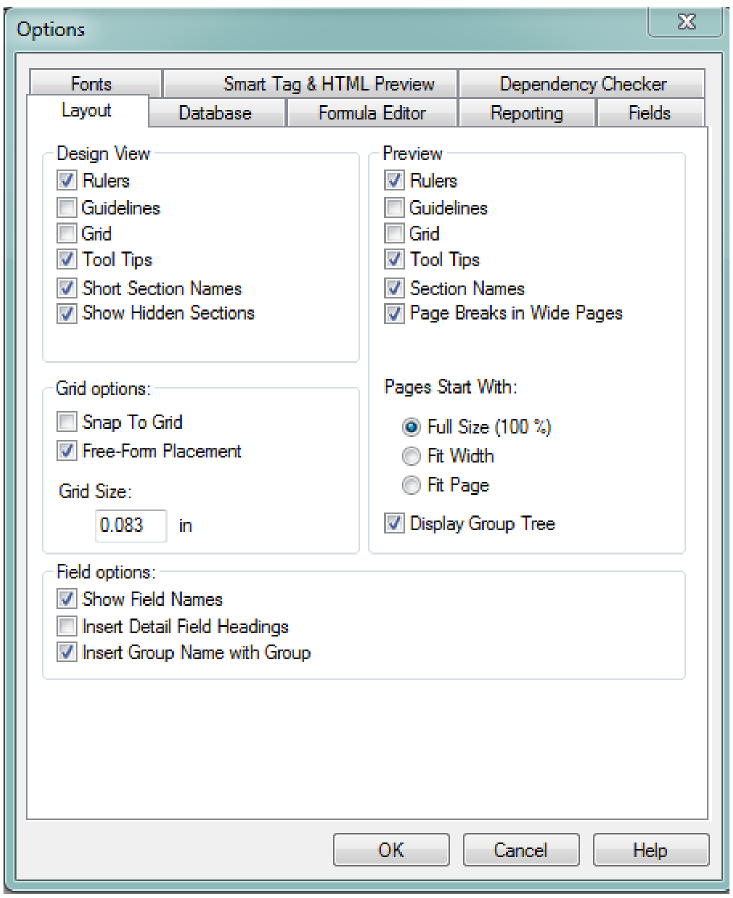
Whether a report is modified or created new, it is helpful for certain report options to be set before working on the report. Within the Crystal Reports *Options* and *Report Options* there are a number of settings that can be preset for generalizations. These can be changed for individual reports or individual fields within a report.

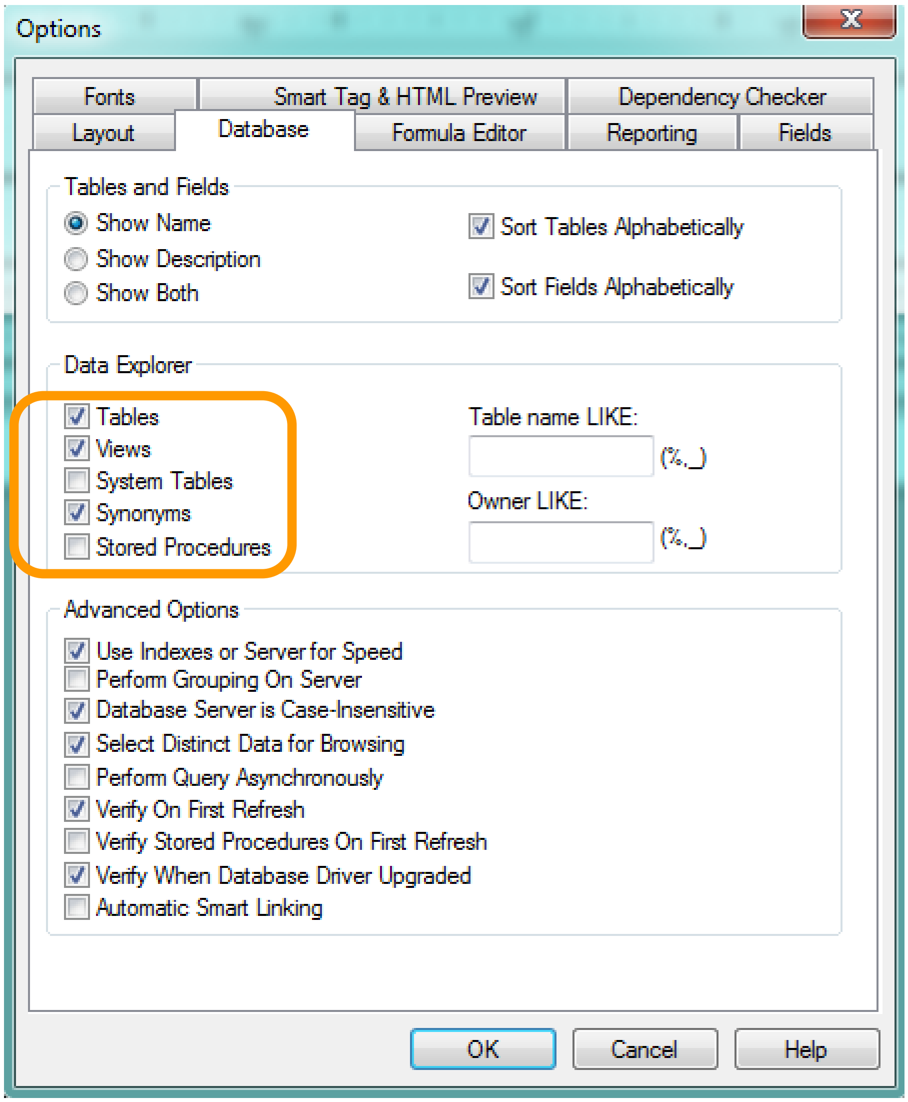
Options

To view the "Options" section, we will look at the previously exported report, **LC_ReqSum.rpt**.

- In the Menu Bar click **File >> Options**

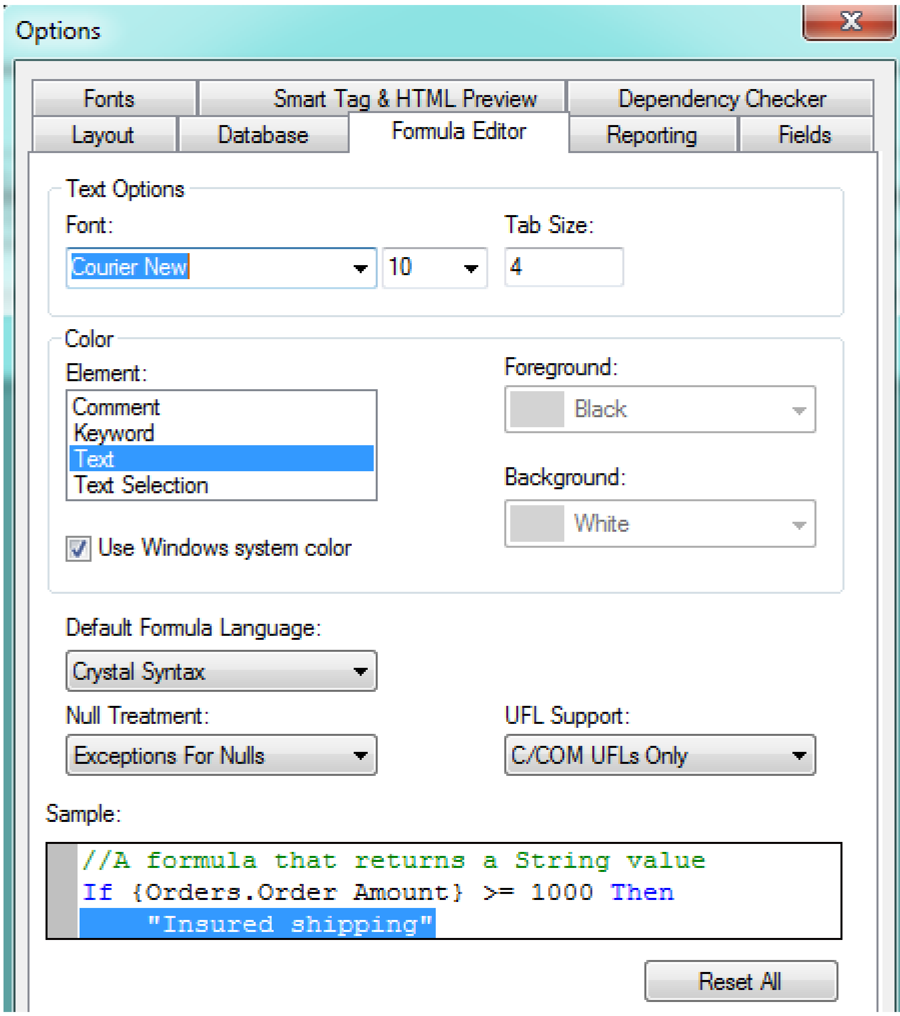
The following screen captures show what options can be changed behind the scenes. These options will be reflected in all of the reports created.



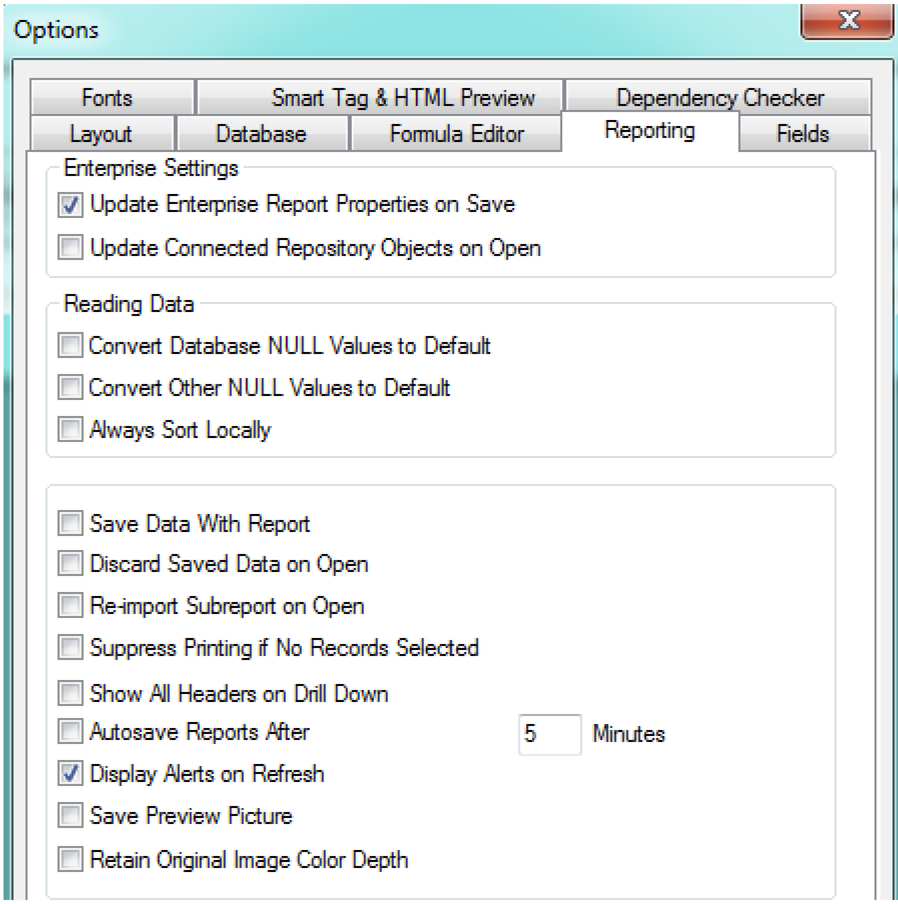


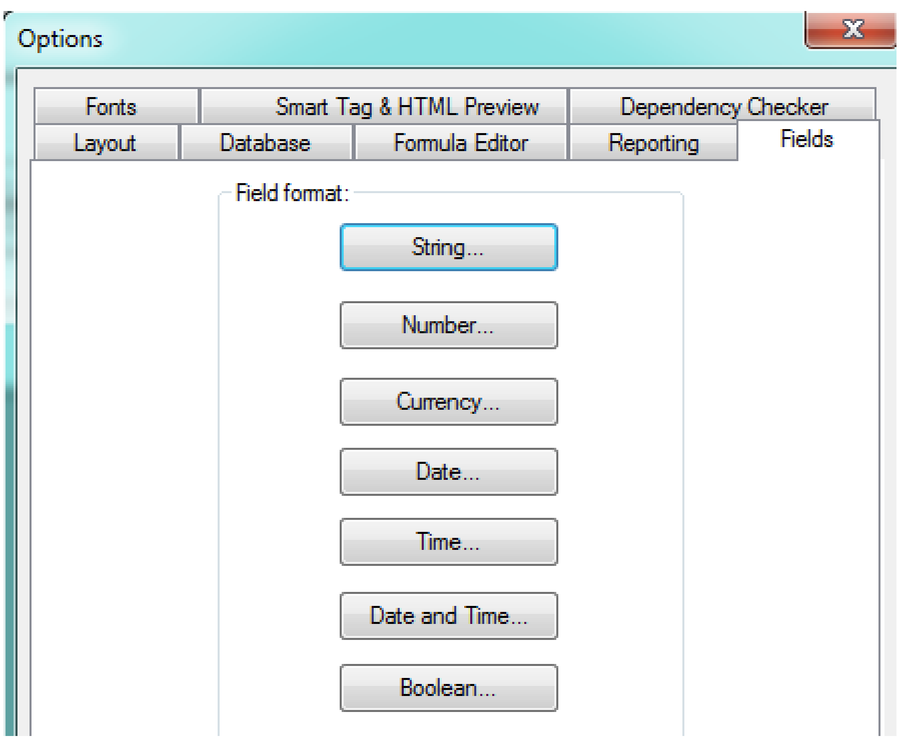
Once the database has been unified it is important to confirm the “Stored Procedures” option is unchecked. This is necessary to show all of the Lucity tables to add to a report or when repointing tables. Crystal Reports limits the number of objects available to be used in a report and Stored Procedures are counted as objects but are typically not used in reporting.

Notes:


Options
Fonts
Smart Tag & HTML Preview
Dependency Checker
Layout
Database
Formula Editor
Reporting
Fields
Text Options
Font:
Courier New
10
Tab Size:
4
Color
Element:
Comment
Keyword
Text
Text Selection
Use Windows system color
Foreground:
Black
Background:
White
Default Formula Language:
Crystal Syntax
Null Treatment:
Exceptions For Nulls
UFL Support:
C/COM UFLs Only
Sample:
//A formula that returns a String value
If {Orders.Order Amount} >= 1000 Then
"Insured shipping"
Reset All

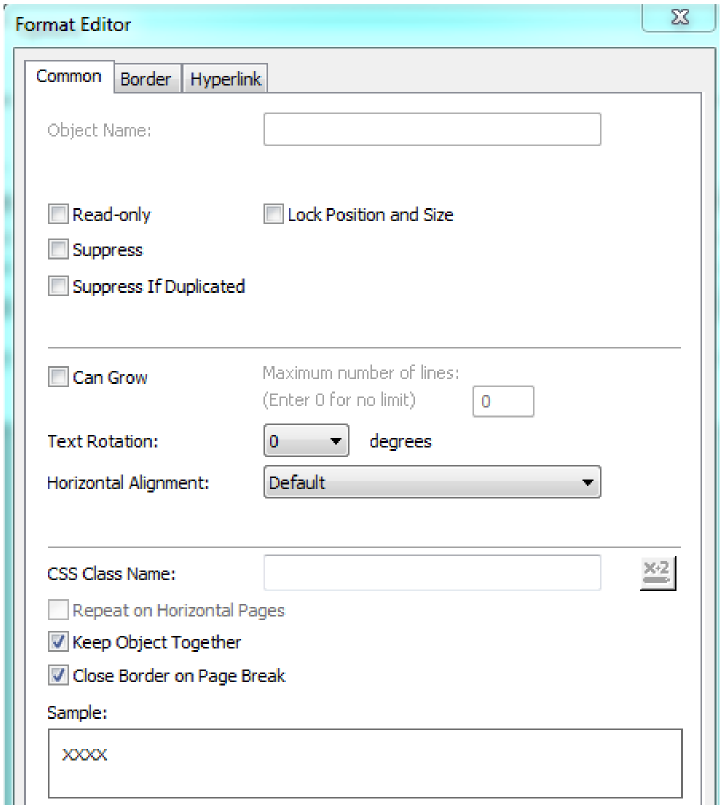
Notes:____


Options
Fonts
Smart Tag & HTML Preview
Dependency Checker
Layout
Database
Formula Editor
Reporting
Fields
Enterprise Settings
Update Enterprise Report Properties on Save
Update Connected Repository Objects on Open
Reading Data
Convert Database NULL Values to Default
Convert Other NULL Values to Default
Always Sort Locally
Save Data With Report
Discard Saved Data on Open
Re-import Subreport on Open
Suppress Printing if No Records Selected
Show All Headers on Drill Down
Autosave Reports After
5
Minutes
Display Alerts on Refresh
Save Preview Picture
Retain Original Image Color Depth

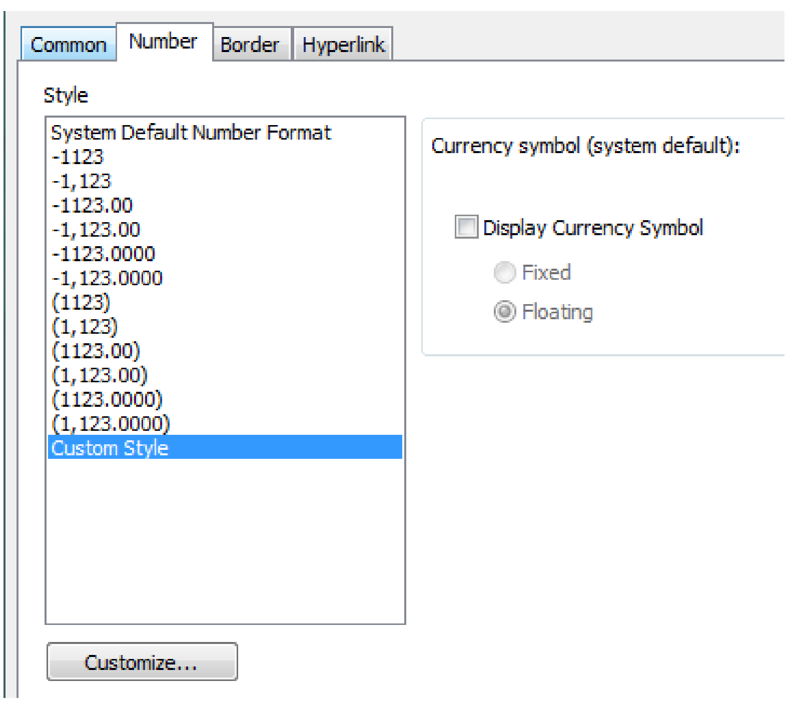

Options
Fonts
Smart Tag & HTML Preview
Dependency Checker
Layout
Database
Formula Editor
Reporting
Fields
Field format:
String...
Number...
Currency...
Date...
Time...
Date and Time...
Boolean...

For each field type there are format options specific to that type. There is a sample box at the bottom of the Format Editor for each field type that shows the current field formatting.

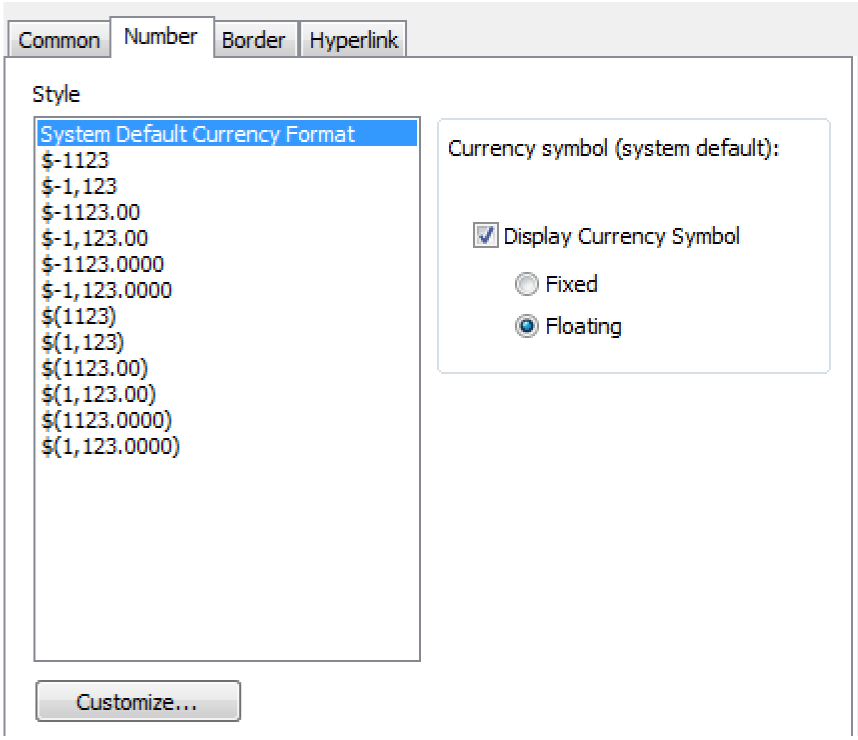
String



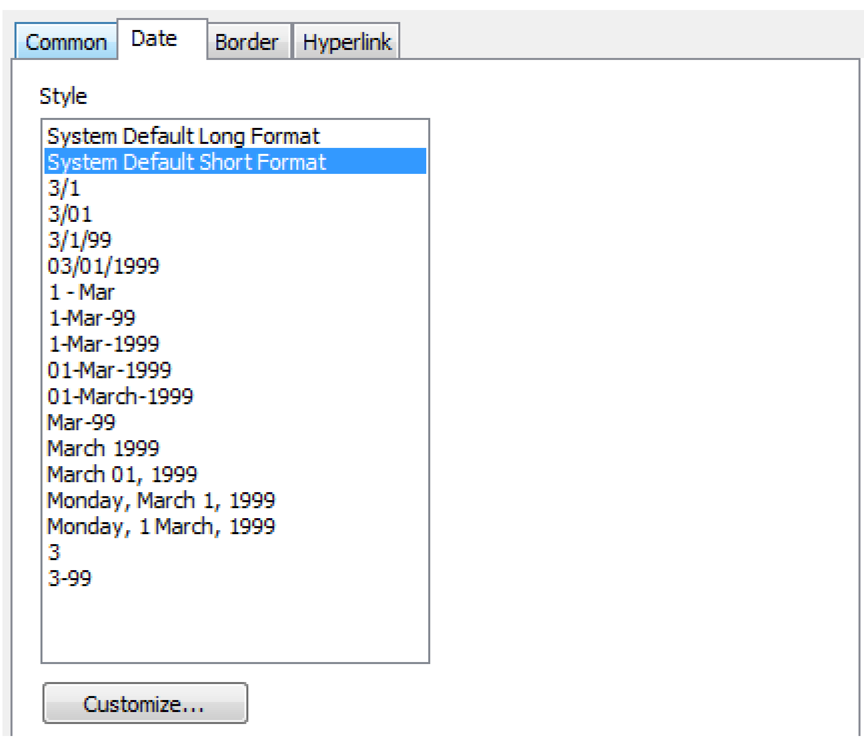
Number



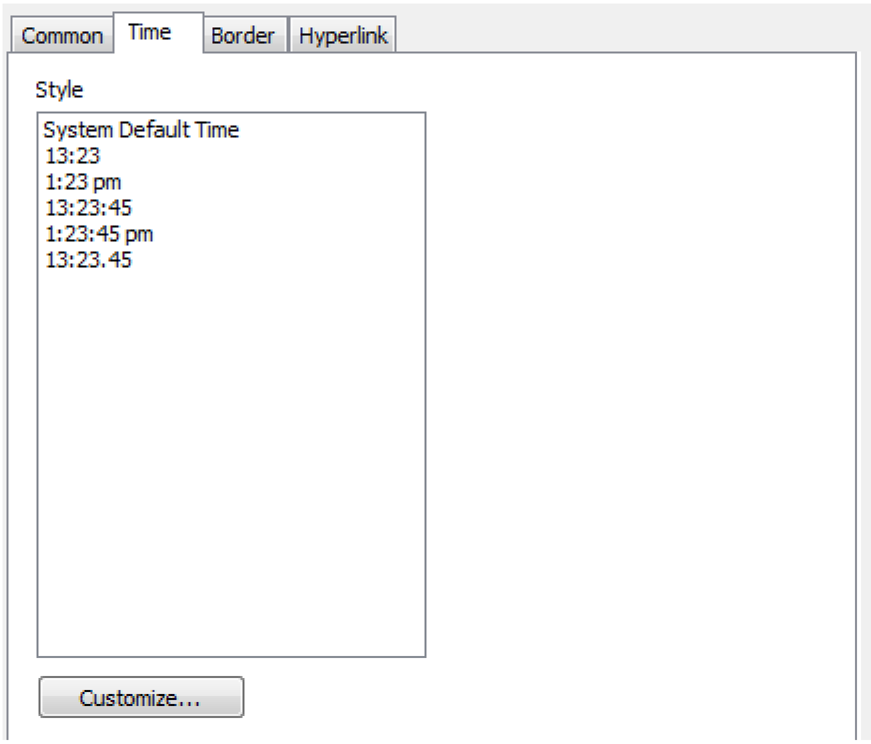
Currency



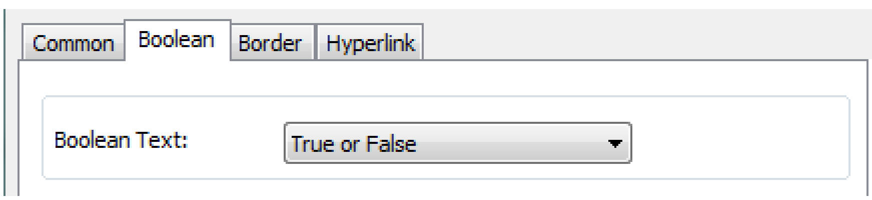
Date

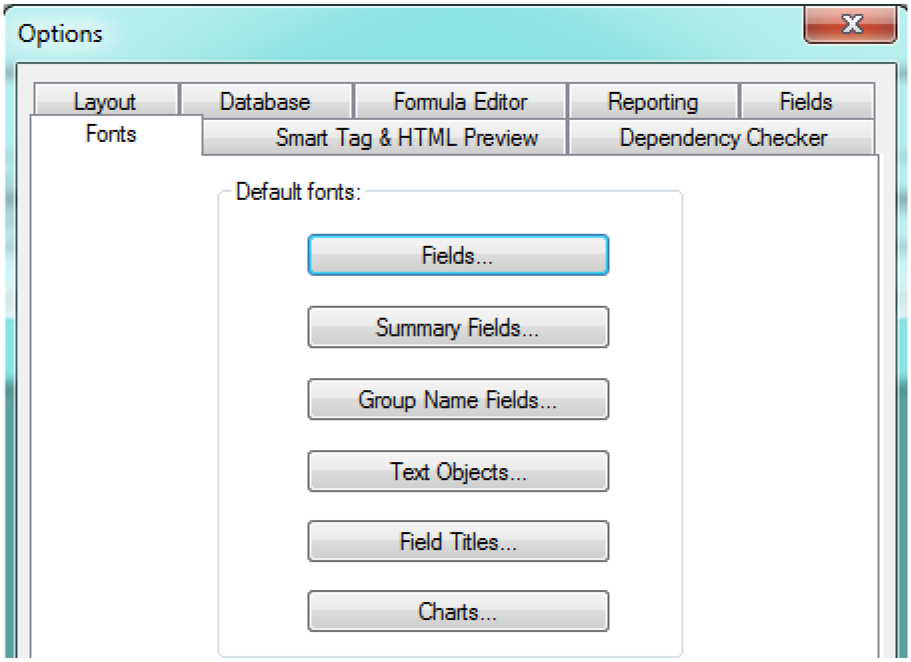


Time

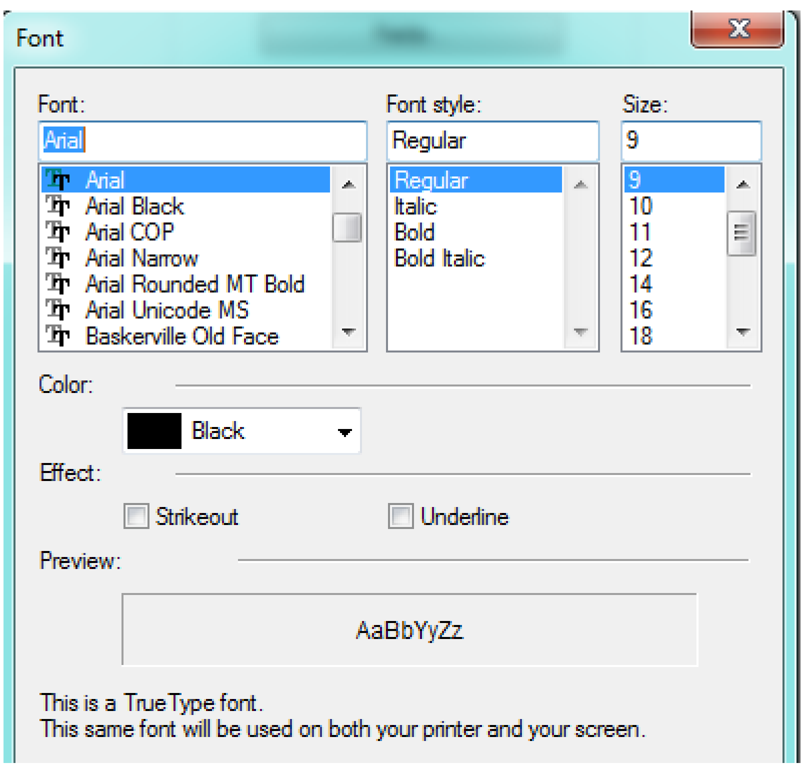


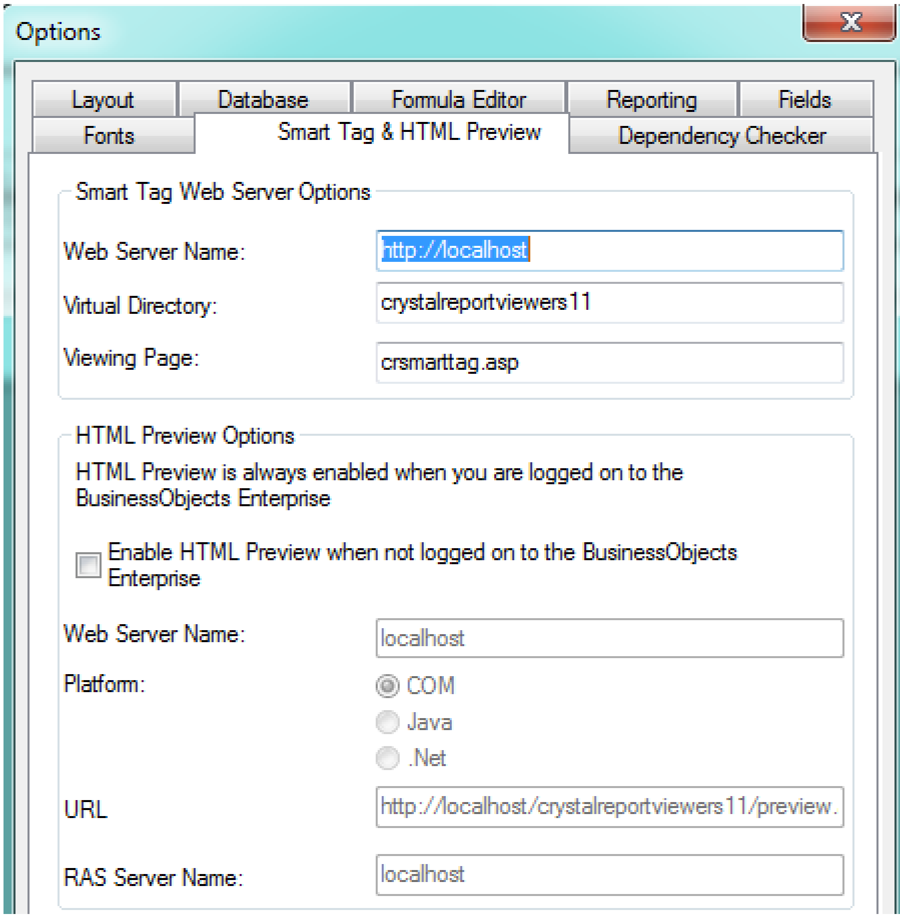
Boolean

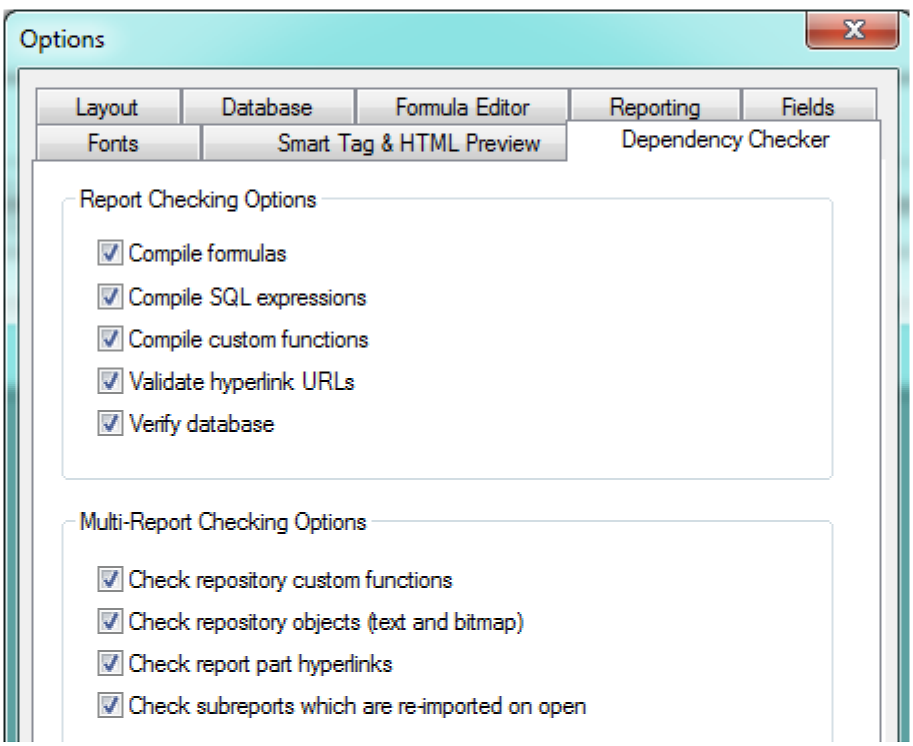




Each Field or Object type opens the Font options.




Options
Layout
Database
Formula Editor
Reporting
Fields
Fonts
Smart Tag & HTML Preview
Dependency Checker
Smart Tag Web Server Options
Web Server Name:
http://localhost
Virtual Directory:
crystalreportviewers11
Viewing Page:
crsmarttag.asp
HTML Preview Options
HTML Preview is always enabled when you are logged on to the BusinessObjects Enterprise
Enable HTML Preview when not logged on to the BusinessObjects Enterprise
Web Server Name:
localhost
Platform:
COM
Java
.Net
URL
http://localhost/crystalreportviewers11/preview.
RAS Server Name:
localhost

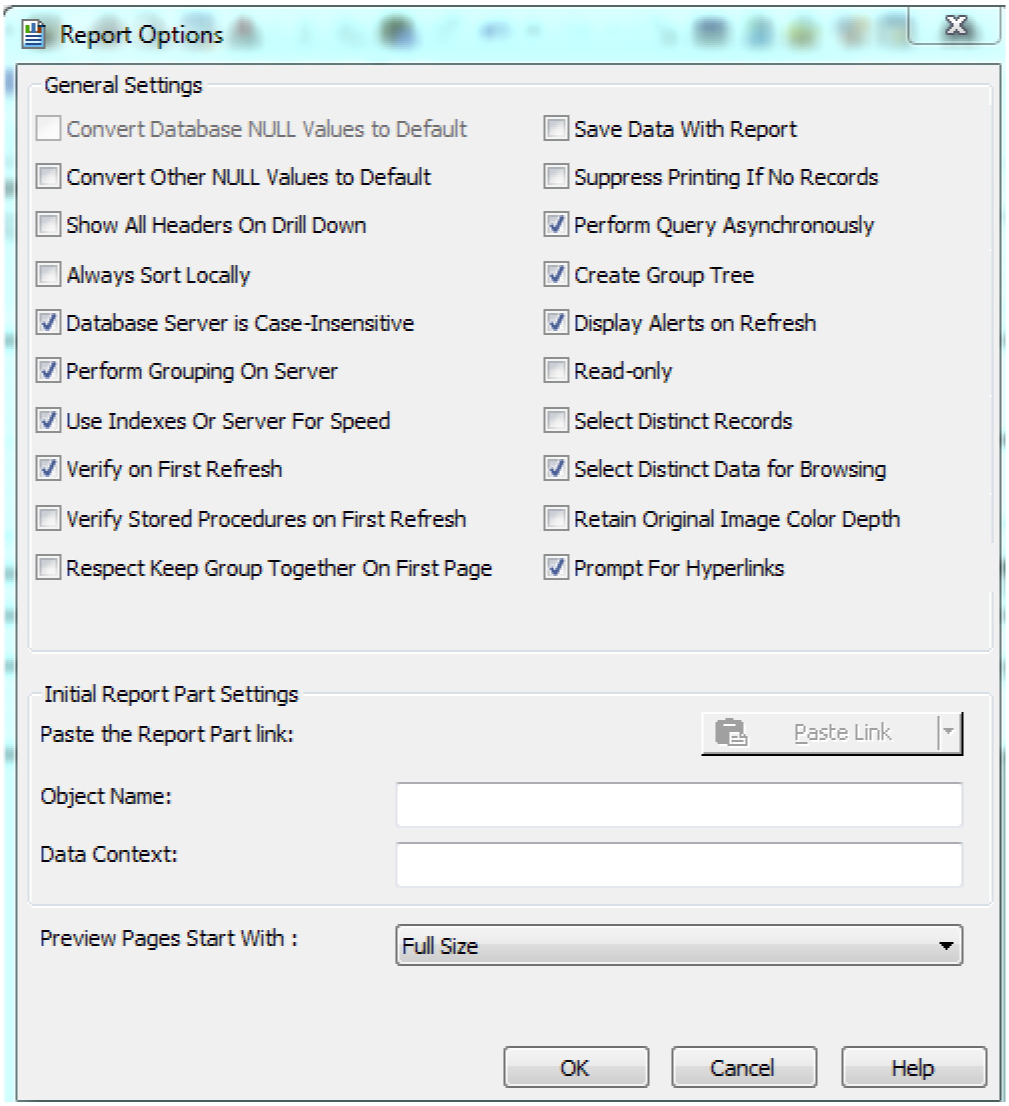

Options
Layout
Database
Formula Editor
Reporting
Fields
Fonts
Smart Tag & HTML Preview
Dependency Checker
Report Checking Options
Compile formulas
Compile SQL expressions
Compile custom functions
Validate hyperlink URLs
Verify database
Multi-Report Checking Options
Check repository custom functions
Check repository objects (text and bitmap)
Check report part hyperlinks
Check subreports which are re-imported on open

Report Options

Report Options are specific to an individual report.

- In the Menu Bar click **File >> Report Options**.

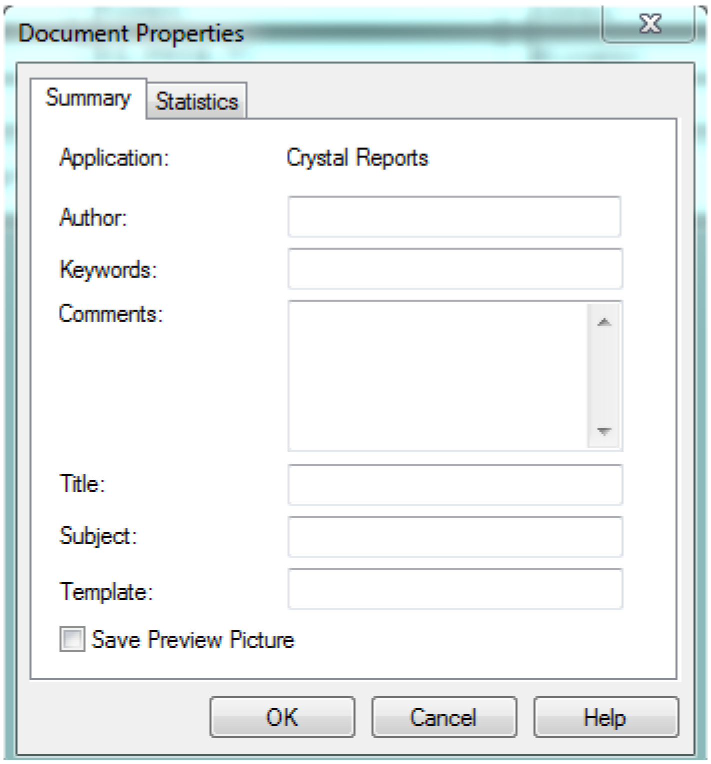
These Report Options are also available within Subreports (discussed later).

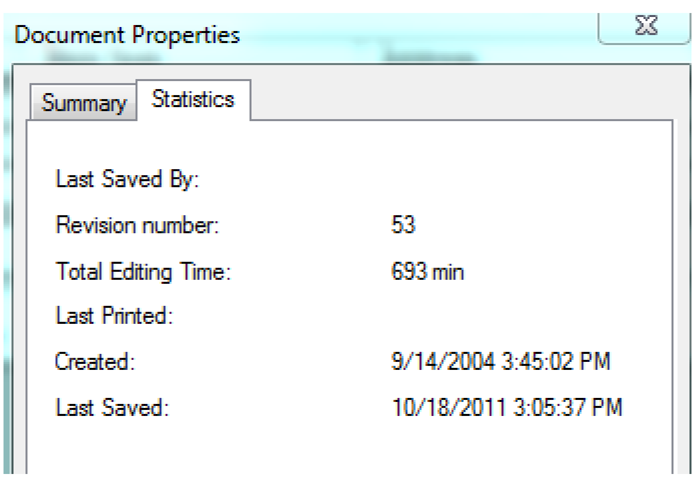


Document Properties

Another useful Crystal option is Document Properties. This information could help in report documentation. Some of the fields are available to be used in the report. They are found in the Special Fields section listed in Field Explorer (Discussed later).

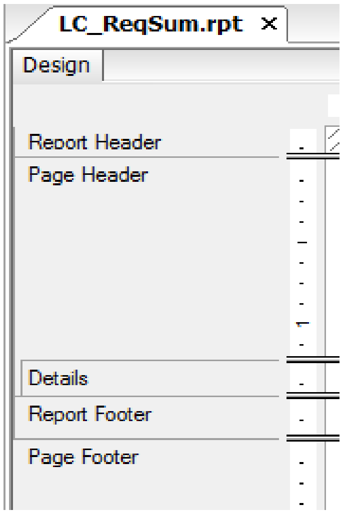
- In the Menu Bar click **File >> Summary Info…**



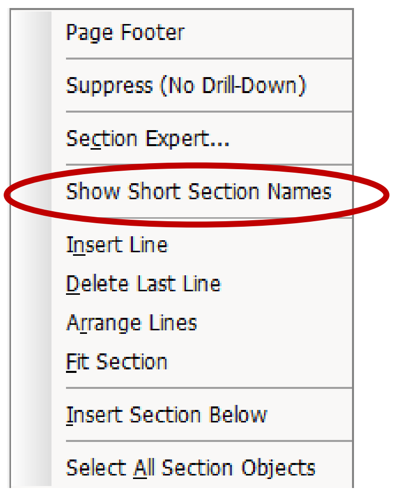


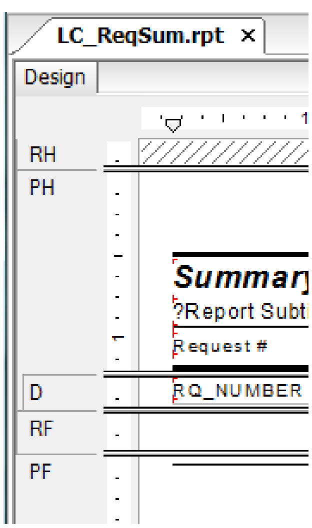
Report Sections

Every report has a minimum of five sections. These sections show on the left side of the report.



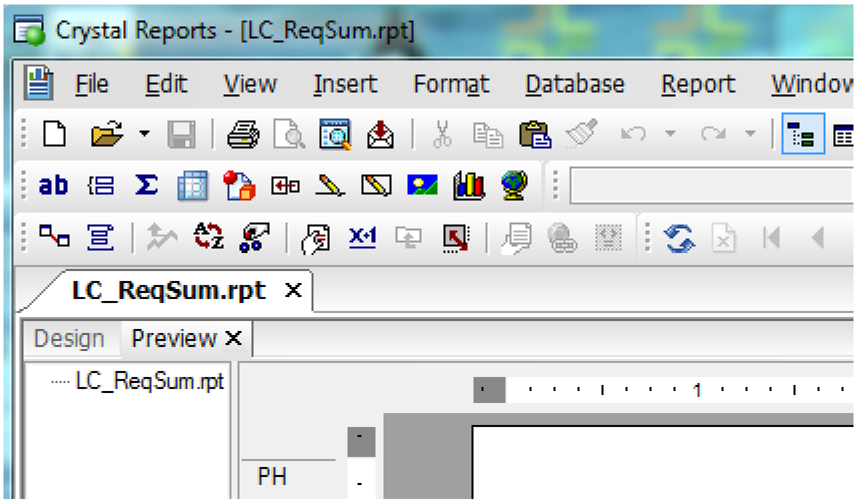
To conserve space this section can be reduced in size by right clicking in the section and selecting *Show Short Section Names*





Modifying a Report

Beneath the toolbars the open report will have a tab with either the report file name or the Title set up in Document Properties. Beneath this, the exported report already has two tabs available, Design and Preview. If the report is opened from the report folder then the Design tab will be present but the Preview will only show after the report is run.

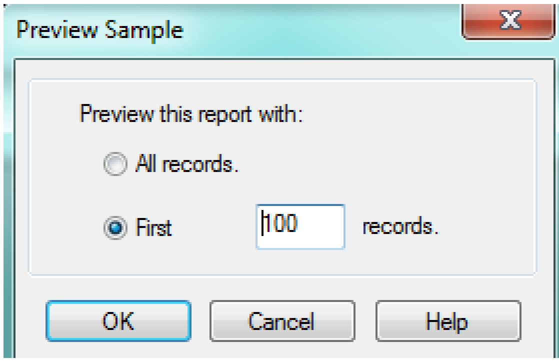


The Design page is where most of the report modifications will take place but can be done in Preview as well.

> *Note: The undo and redo buttons are very helpful when revising reports.* 

Saving and Viewing your Report

- Save any changes by clicking on *Save* . It is a good idea to Save while you are working and not just when you are finished with the report. (You never know when you will encounter one of those mysterious error statements that shuts down your system, losing all of your work).
- To preview the report, click *Print Preview* .
- To refresh the report, click Refresh .
- To limit the number of records previewed:
    - In the Menu Bar click *View*.
    - Select *Preview Sample…*
    - Select *First* and type in the number of records you would like the report to run with. This is particularly helpful when you have large numbers of records to deal with.



> *Note: If you are looking for a specific record in Preview mode, you can use the Find Tool button*  *and enter the data you wish to find.*

Field Types

Field types include Text Objects, Database Fields, Formula Fields, Field Titles, Parameter Fields, Running Total Fields, Group Name Fields and Special Fields.

When the cursor is placed over the field boxes, field type information appears if *Tooltips* is turned on.

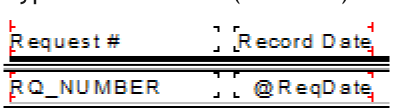
- If you place the cursor over the **Request #** box, *Text Object* appears. This means that **Request #** is a group of characters that can be modified. This is a column header that was manually typed in.
- If the cursor is placed over **RQ_Number**, it shows the table (WKREQ), field name (RQ_NUMBER) and data type (string). Depending on the age of the report the default field caption may also show. This Database Field is bringing in data from a table. In Field Explorer (discussed later) the previous tooltip information may show as well as the size of the string mask for the field.

Changing Text in Text Objects

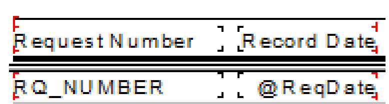
In the example report, **LC_ReqSum.rpt,** we will change the text object field "**Request #**" to "**Request Number**".

To change the text within a *Text Object*:

1. Double click on the box with **Request #**.
2. Click and drag over the portion you want to change (**#**).
3. Type the new text (**Number**) and click out of the box.



change to



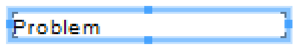
Field Sizing

Sometimes it is necessary to resize or delete existing fields to accommodate additional text or make room for a new field.

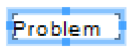
Resize a Text Box:

1. Click on the text object (**Problem**) which will highlight the borders of the box.

- This will activate the sizing handles, the small dark dots on each side of the box.



2. Place the cursor over the right border's mark which will turn the curser into a two sided arrow. Click and drag the box to the left to reduce the empty space.



Resize a Field:

1. Click on the field (**RQ_PROB_TY**).
2. Click on the right sizing handle and drag to the left (to about 7.5" in the top ruler).

Deleting a Field

Delete a Field:

1. Click on the field (**RQ_PRTY_TY**) to highlight it.
2. Press the Delete key

   OR

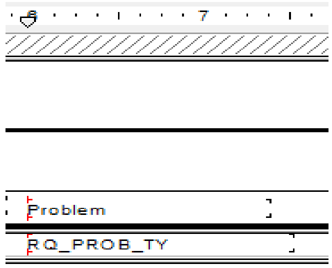
   Right click in the field and select *Delete*

Field Movement

1. The simplest form of moving fields is by clicking on the field and dragging it to the new location.
   a. Click on the **Priority** text object (resize to reduce the empty space).
   b. Drag to the right until the left edge is aligned with the 5" mark.
2. Multiple fields can be moved by holding the shift key down while clicking on the fields. This will highlight the fields which can then be moved or sized or formatted all at the same time.

   The click and drag feature, as well as the adjustment of the box size, are done to the highlighted box with the four dark marks on the edges (anchor box). Multiple fields may be copied or cut as a unit as well.
3. Multiple aligned fields can be moved as a unit by "attaching" Guidelines to the fields. This can be done both horizontally and vertically using the rulers at the top and left side of the report (if this option is turned on).
   a. In the top ruler, click near the 6" mark and hold, moving slightly if necessary, until the dotted line meets the left side of the **Problem** text box. Release
      - The left side of the text box will appear red and there is a pointed box in the ruler section.

b. The left edge of the **RQ_PROB_TY** field will likely be red as well but if not, click on the field and drag to attach the left side to the guideline.

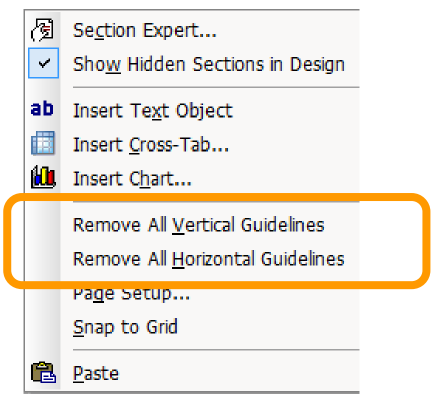


c. To move the fields attached to the guideline, click on the ruler marker and drag it to the new location. (about 6 5/8") This will move any fields attached to the guideline.

Note: Caution should be used with guidelines if there are a number of fields in the report. You may attach fields you had no intention of moving. This is a problem that can affect Lucity Detail reports.

d. To remove a marker, click on it and drag it up and away from the ruler. Then, release your mouse.

e. All markers can be removed with a right click in the ruler or body of the report and then selecting either *Remove All Vertical Guidelines* and/or *Remove All Horizontal Guidelines*.



Example 3

Add a Text Object

Make sure there is room to add the text object.

In the example we will create space between the **Status Date** and **Priority**:

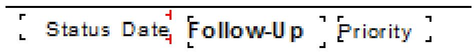
1. Reduce the size of the **Status** text object to close up the empty space.
2. Reduce the **RQ_STAT_TY** field (right edge to 3 1/4").
3. Move the **Status Date** text object and **@StatDate** field to the left (right edge 4 1/8").

This has opened up space to add a new text object.

4. Click (release – don't drag) on *Insert Text Object* 

. The cursor turns into a plus sign.
5. Click on the location where the box is to be inserted. Just to the right of the **Status Date** text object.
6. Type in the desired text (**Follow-Up**).
7. Click out of the box when you are finished.

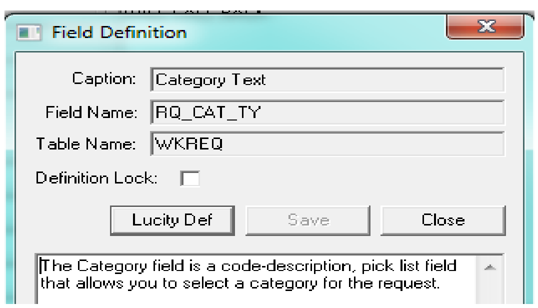
8. Resize to close up the empty space. In the example it is overlapping the **Priority** text object. It doesn't hurt anything but may hinder your design efforts later.



Adding Fields

To add a field, you may need to make room by moving or removing existing fields.

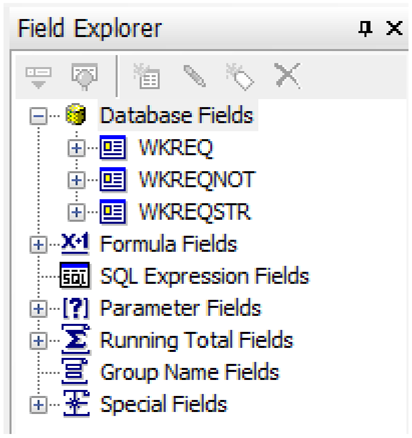
1. In our example, we'll change the "Priority" column to "Category".
   - First, you'll edit the **Priority** column header to read **Category.**
     - The **RQ_PRTY_TY** field has already been deleted.
2. Now, you'll add the new "Category" field.
3. You'll need to find out the name of the "Category" text field.
   a. Go back to the *Requests* module and locate the field that is to be shown in the report.
   b. With your cursor in the field, press **Ctrl** and then right click.
   c. Select *Field Definition*.
      - Some fields, including the Code field, have an additional option, *Field Properties*. This option offers additional information such as the field Mask and Editing options.
      - In the example, you can see that the table name is **WKREQ** and the "Category" field name is **RQ_CAT_TY**.



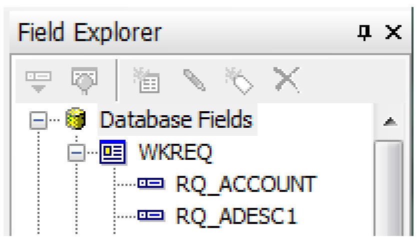
*Note: Sometimes fields that have a code box and a text box will only show the field definition of the code portion. The only difference with the text portion is that the field name would end in **TY** rather than **CD**.*

Sometimes if the box is pulling information from a different module, the field definition will not show up or the given field name may not be accurate. It may be a connecting field to pull the correct data from another table.

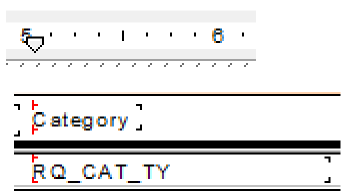
4. Return to the report. Then, complete the following steps to add the new field.
   a. Open *Field Explorer*.  (Also under "View" in the top menu bar.) This may already be open on the right of the report.
   b. Open *Database Fields* (click on the + sign).



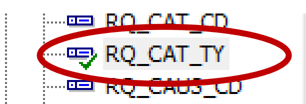
c. Open the **WKREQ** table (click on the + sign).



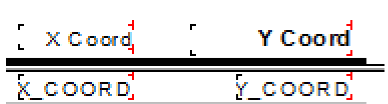
d. Click and drag the **RQ_CAT_TY** field and place it in the *Detail* section under the **Category** column heading.



When a field is used in the report, a check shows up next to it in the *Field Explorer*.

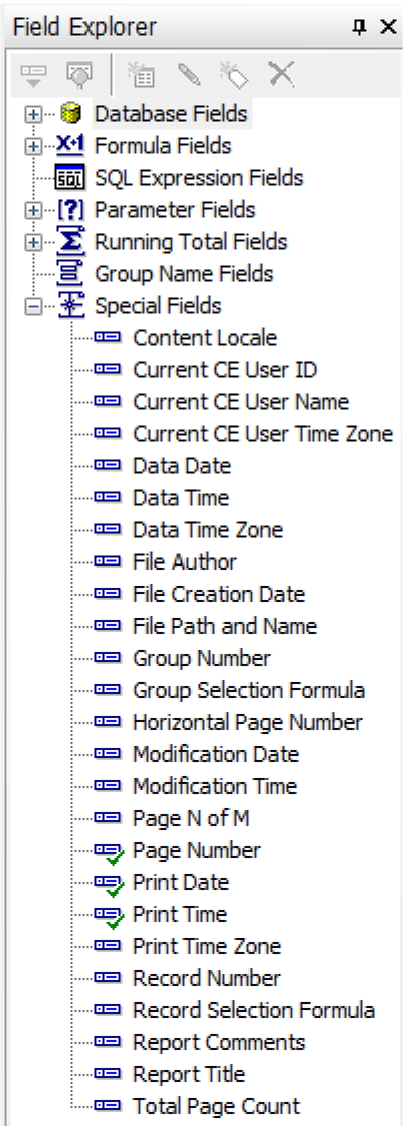


5. We will now add the X and Y Coordinate fields:
   a. Change the **Address** text object to **X Coord.**
   b. Reduce the box width to close up the space.
   c. Add another text object called **Y Coord** to the right of the **X Coord**.
   d. Right align both the **X and Y Coord** text objects.
   e. Delete the **@Location** field.
   f. Add the appropriate fields below the **X** and **Y** column headers.



Special Fields

There are a number of "Special Fields" that Crystal Reports provides. In *Field Explorer* expand *Special Fields*.



The report is currently using **Page Number**, **Print Date** and **Print Time**. If the *Summary Info…* (from File in the toolbar) had been filled out for the report then several of these fields would have been available to bring into the report (**File Author**, **Report Comments** and **Report Title**).

The **File Path and Name** could be a helpful field to place in the Report Footer. This would tell you exactly where the report is located and the exact report name (**LC_ReqSum.rpt**).

Copying Fields

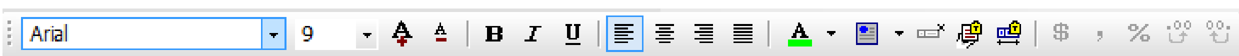
A field that is used in a report can be copied and used elsewhere in the report. There are various methods for doing this.

- Click on the field(s) and:
    - Right click *Copy* and then right click *Paste* to the new location.
    - Or - Ctrl **C** to copy then Ctrl **V** to paste in the new location.
    - Or – for a single field - hold Ctrl, click and drag to new location and release.

Formatting Fields

General Formatting

If you want a field to stand out, there are various tools you can use. You can change the lettering size, font or color of the text as well as change it to **boldface**, *italics*, or <u>underline</u>. The options are located in the Formatting Toolbar (pictured below).



Formatting can also be accessed by right clicking on the box and selecting *Format Text…* (For a text object) or *Format Field…* (For a field with data).

- Click on the box containing the text you wish to change. Then, select the options to be used.
- If partial text is to be changed, double click on the box and then click and drag over the part that is to be changed.

> *Note: For Web reports avoid the use of the Calibri font. There are issues with viewing the report as PDF.*

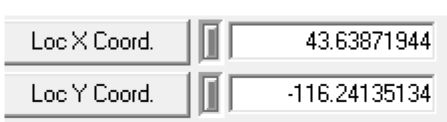
In the example report change the column header text objects to be **Bold**.

1. Hold the shift key down and click on all boxes that need changing.
2. Click on the **B** (for bold) in the toolbar.
3. Resize any boxes to accommodate the bold text.

Preview the report.

Request #	Record Date	Status	Status Date	Follow-Up	Category	Problem	X Coord	Y Coord
2006-00013	4/5/2006	Completed	6/12/2006		Commercial Collection	INFO REQUEST - COMMERCIAL	43.64	-116.24

The X and Y coordinates are showing with two digits to the right of the decimal and the actual values in the record require 8 digits.

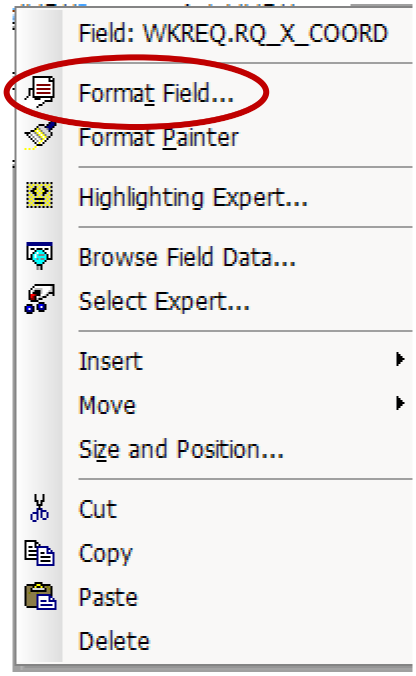


Number Formatting

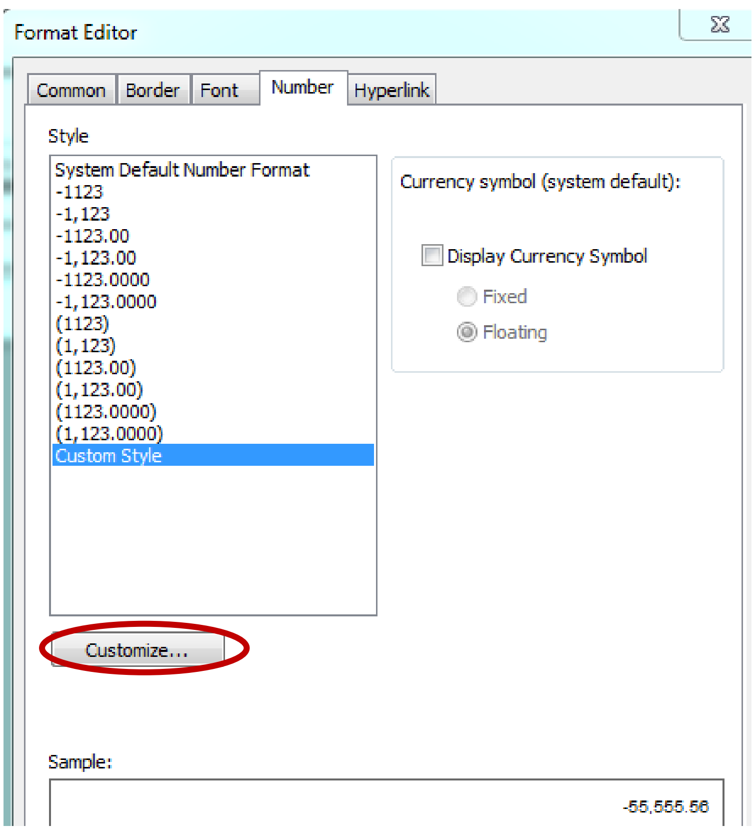
Number fields may require formatting for many reasons such as decimals, rounding, negatives, field size where the value is showing ##### or the numbers are cut off. The field size can either be increased, or the field can be reformatted to remove the decimals.

To change the format of the **RQ_X_COORD** field:

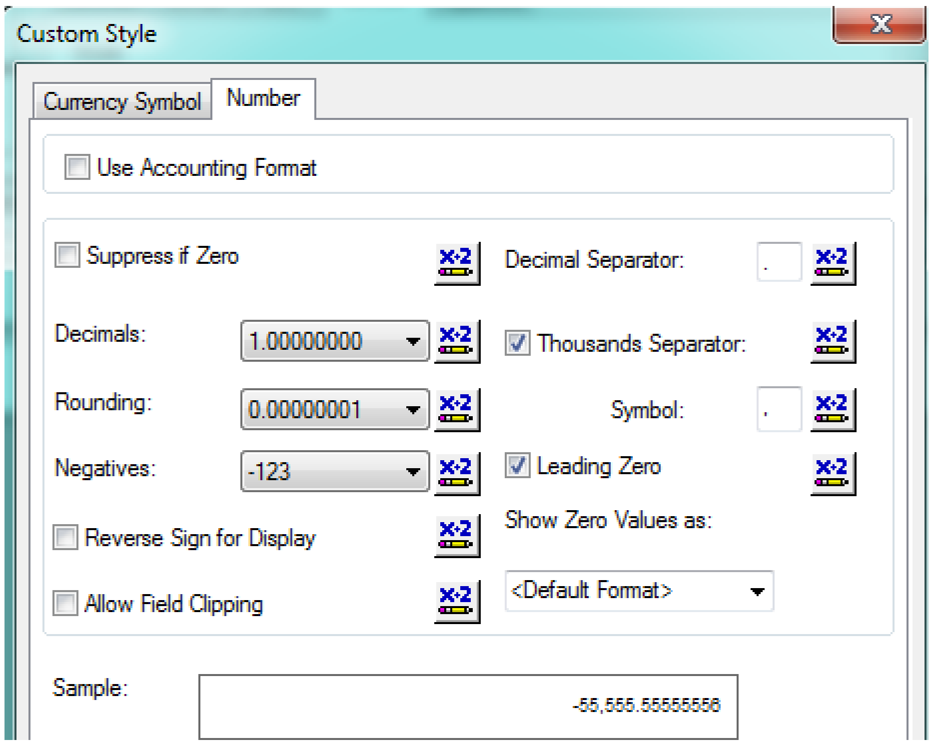
1. Right click on the field and select *Format Field…*.



2. Click on *Customize…*

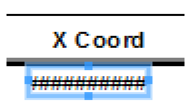


3. Click on the down arrow next to “Decimals:” and select the correct option for the number of digits.
4. Repeat for “Rounding”.



5. Select *OK* to close the *Custom Style* dialog.
6. Select *OK* to close the *Format Editor* dialog.

   In the preview tab the X Coordinate value is now showing:



7. Increase the field size with the sizing handles on the field.

Another issue that sometimes occurs is the clipping of numbers. This is where you see incomplete numbers instead of the ###.##. This is not recommended. This option is located in the Custom Style dialog box.

Make sure the “Allow Field Clipping” box is **NOT** checked.

Copying Formatting

The Y Coordinate will need similar formatting. The *Format Painter* can be used to copy the X Coordinate formatting onto the Y Coordinate field as follows:

1. Click on the **RQ_X_COORD** field.
2. Select the *Format Painter* in the *Standard Toolbar*  .
3. Click on the **RQ_Y_COORD** field.
4. Increase the field size to accommodate the additional digits.

X Coord	Y Coord
43.64000000	-116.24000000

> *Note: Many cost fields within Work reports are fields that will be "Hidden" if the person running the report does not have the proper security. The way this is achieved turns the number field into a "Text" type field thus normal "number" formatting does not work on these fields.*

Example 4

Alignment of Fields

1. Shift click on all fields to be aligned.
2. Right click on the field you want to size and align with, the darker markers will show up on the field you select.
3. To size, click ***Size > Same Height***.
4. To align, repeat steps 2 and 3, clicking ***Align > Tops*** (or Bottoms, see what looks better).
5. Do this for both the Column Headers and fields in the *Detail* section.

> *Note: If a section has only a single line of fields, then all fields can be selected by right clicking in the left margin of the section and selecting "Select All Section Objects". This option wasn't available in our example due to the line in the Detail section.*

Example 5

Using Formulas

Crystal provides a way to create formulas that can be used in record selection, conditional formatting, conditional suppression and calculations to name a few.

Date and Time Fields

In Lucity the date and time fields are a *DateTime* type field. If the Date field is brought in directly with the Options (File > Options > Fields > Date and Time… > Date and Time) set as *System Default Short Format*, the date field when brought directly into the report will look like this:

2/20/2014 12:00:00AM

The time portion is not a good value.

In the same way the Time field will look like this:

1/1/1900 12:01:00PM

The date portion is not a good value.

In File > Options > Fields > Field format the **Date and Time** type field could be set up to always show a date (without time) but then the time field would also show as a date.

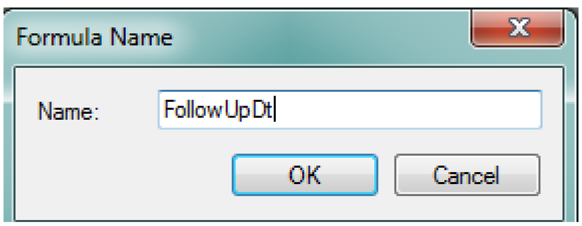
Each field's format can be set case by case to either show the date or time portion but the best practice is to handle the *DateTime* fields with a formula. The formula will take out the required portion of the field.

> *Note: Formula fields begin with the @ symbol like the **Status Date*** 
>
> .

Date Fields

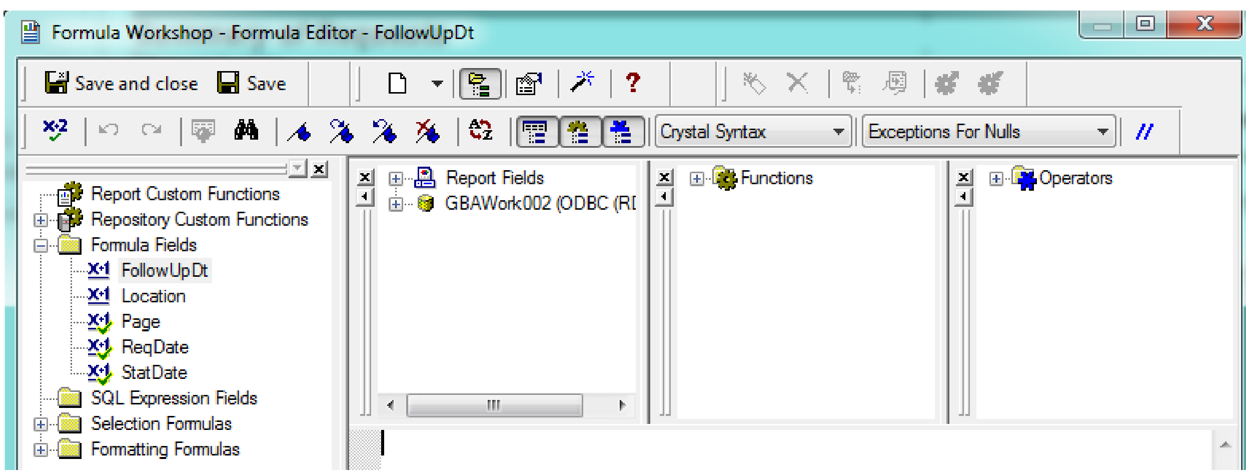
In our example, we will add the **Follow-Up Date**.

1. Within *Field Explorer*, right click on *Formula Fields*.
2. Select *New*.
3. Type in the name. For our example, we've entered "**FollowUpDt**".



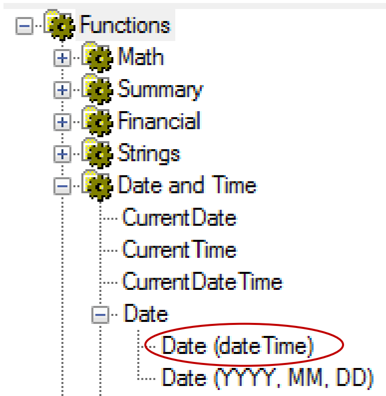
4. *OK*

This will open the Formula Workshop.



It would be helpful to have the *Hide/Show workshop tree* highlighted  as well as the *Field Tree, Function Tree* and *Operator Tree* .

5. Expand the *Function Tree*, Click the plus sign (+) in front of *Functions*.
6. Expand *Date and Time*.
7. Expand *Date*.
8. Double click the *Date(dateTime)* option.



9. The following formula will show up in the lower box work space of the Formula Workshop:

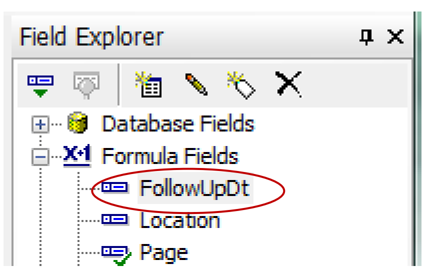
    Date()

10. In the *Field Tree* expand the ODBC database. In this case it is **Work**.
11. Expand the **WKREQ** table.
12. Make sure the cursor is flashing between the Date parentheses in the formula box, then in the *Field Tree* double click **RQ_FLLW_DT**. The final formula will look like this:

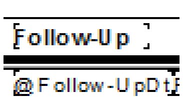
```
Date({WKREQ.RQ_FLLW_DT})
```

13. Click *Save and close*.

The new formula will now show under the *Formula Fields* in *Field Explorer*.

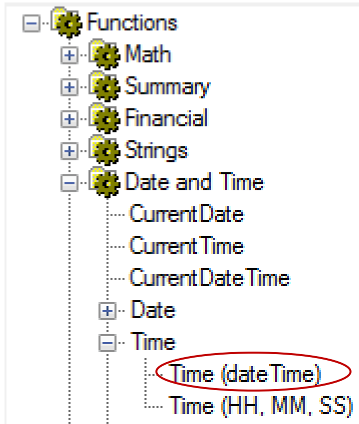


14. Drag the new formula field into the *Detail* section, under the **Follow-Up** column header.



Time Fields

A Time field which is also a DateTime type of field should also be set up in a formula. It would be created like the date formula except in the *Formula Workshop* in the *Functions Tree* the *Time* option would be used to create the formula.



Note: Once the date has been pulled from the DateTime field in the Date formula it will follow the formatting in Options for Date. In a like way the Time formula will now format as a Time field. This can be changed in a general way out in Options or specificly with the right click Format Field… option.

Note: Formulas created in the Formula Workshop can be typed in without using any of the "Tools". The Tool Fields, Functions and Operators may also be dragged in as opposed to double clicking.

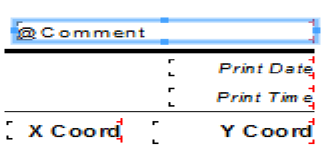
Documentation Comments

Comments can be made within the Formula Workshop to help with documentation. The comments can be in a separate formula documenting all of the changes for the report or they can be specific comments to a formula. Each line of a comment must be preceded by two forward slashes //. This will change the font color (default green can be changed in *File > Options > Formula Editor*).

A general comment will be added to the example.

1. Right click on *Formula Fields* and select *New*.
2. Type in "**Comment**".
3. In the lower section, type //.
4. Next, type whatever clues you need to remember what was done. We'll type:

   "Removed Priority and Address. Added Follow-Up date, Category, and X & Y coordinates."
5. Select *Save and Close*.
6. Drag the **Comment** formula to whichever section you will see it, like the *Page Header*. This will not show up in the Preview mode of the report but it is there for you to reference in the future.



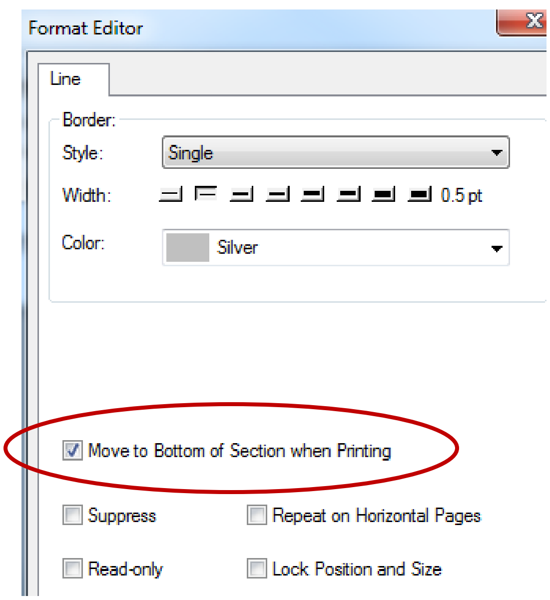
Inserting Lines and Boxes

Lines

When reports have a great deal of information, it is often helpful to use lines to break up the data. This makes it easier to read.

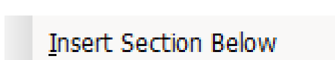
1. Click on *Insert Line* . This turns the cursor into a pencil.
2. Place the pencil point wherever you would like to insert the line in the report. Then, drag the line across the screen until you have reached the desired length.
3. The line characteristics can be modified by right clicking on the line and selecting *Format Line*.
    - Several line samples appear below

4. If any of the fields above the line are able to grow then in the *Format Line* dialog (right click on the line) select "Move to Bottom of Section when Printing".



This usually solves any growing issues, but sometimes the line should be given its own section instead.

- A new section can be added by right clicking in the left margin next to the section and selecting *Insert Section Below*. These options can also be selected by typing the underlined letter.



The "I" is underlined.

All Crystal sections allow multiples. They will show with a letter behind the section designation.

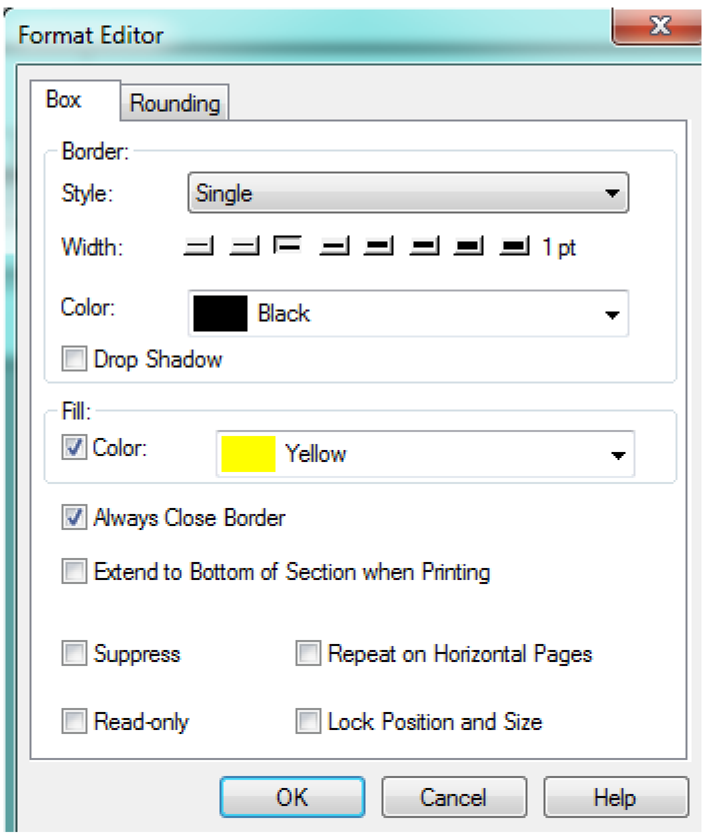
Example: Details a, Details b, Report Footer a, Report Footer b…

Example 6

Boxes

Another option is enclosing data in a box. In the example we will place a box around the **Total Requests** text object and field (**#TotReq**) .

1. Click on Insert Box . This turns the cursor into a pencil.
2. Place the pencil point wherever one corner of the box should be (top left of **Total Requests** box) and then drag diagonally to the other corner (bottom right of **#TotReq** box) and click.
3. Right click on the box line and select *Format Box…*
4. Select *Fill:>>Color:*
5. Use the drop down arrow to select Yellow.
6. Click *OK*



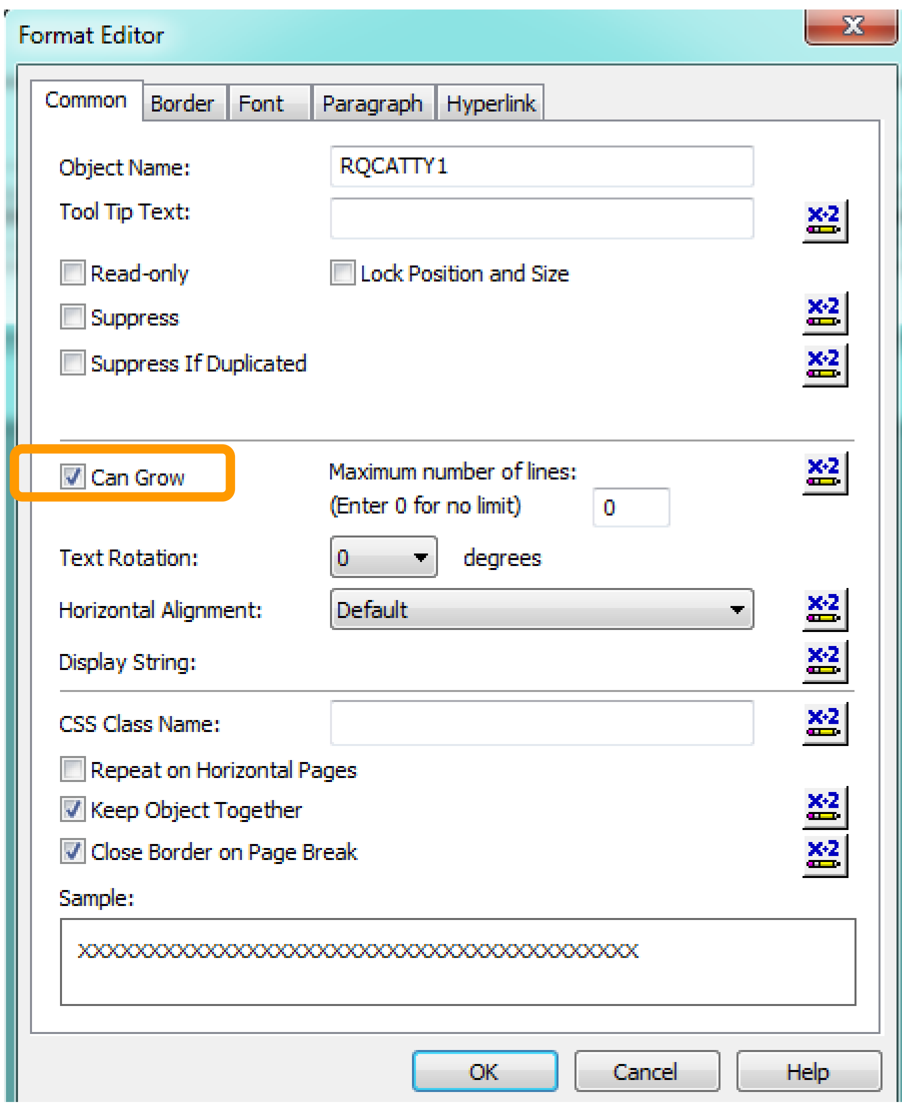
Example 7

"Growing" Fields

Sometimes the data in a field is cut off and there is no more horizontal room to increase the field size. In this case, it is helpful to allow the information to be shown in multiple lines. This can be done with the "Can Grow" option.

To add or delete the "Can Grow" option, complete the following:

1. In the example, right click on the field (**RQ_CAT_TY**).
2. Select *Format Field*.
3. On the *Common* tab, check the *Can Grow* box.
    - The "Maximum number of lines" should be "0" to see all of the data in the field. This will scroll the data vertically. If the *Can Grow* option is unchecked then in most cases the data will cut off when reaching the limits of the field size. This is not the case for the Advanced View in the Web. The field will grow horizontally to the right and overlap any field to the right. This can be corrected by using the *Can Grow* option with the "Maximum number of lines" set at "1".



Report Manipulation

Lucity typically provides a Summary report and a Detail report for each module. The Summary report is great for a quick overview of many records. The Detail report usually shows all of the fields within a module. It is much easier to delete fields and sections and move things around than it is to add information. We'll go over the steps to manipulate a report below:

1. Copy the **ReqDetail.rpt** report. This copy is just to "play" with so does not need to be exported or saved. (Copy and Paste)
2. Open **ReqDetail – Copy.rpt**.
3. Removing Sections:
   - If a section type has multiples (a, b, c…) then all but one may be removed by right clicking to the left of the report section and selecting *Delete Section*
     - Right click on the left margin of the ***Detail g*** section and select *Delete Section*. The ***g*** section is removed and the ***Details*** sections will now rearrange their lettering. The old **h** section is now **g**.
   - Some Sections cannot be removed but the information within them can be deleted.
     - Right click in the left margin of the ***Page Header*** section and choose *Select All Section Objects*.
     - Then press delete.
   - Another option is to suppress a section.
     - Right click in the left margin of the ***Detail c*** section and choose *Suppress (No Drill-Down)*.
4. Moving fields around within a report can be challenging. In this example, ***Detail a*** section, we will move **Home Phone** and **Work Phone** up to just below **Phone Number**.
   a. To make room for these fields, place the cursor to the left of the report on the right edge of the ruler strip where the field is to be inserted. You'll see a single line with double arrows.
   b. Click, hold, and slightly wiggle, pulling to the right as you release to create a section break.
   c. Click and drag the section break line to make room for the new fields.
   d. Hold the Shift key and click ***Home Phone***, ***RQ_HM_PHN***, ***Work Phone*** and **RQ_WK_PHN** to highlight the fields to be moved.
   e. Click and drag the fields beneath *Phone Number*.
   f. Right click in the ***Details*** section next to *Phone Number* and select *Merge Section Below*.

> *Note: The Merge function may have caused the check next to **Do Not Disclose** to "disappear". Right click on the check box and select Move >> To Back.*

5. Report sections can be switched by clicking and dragging to the new location.
   - Click and drag section ***Dk*** to beneath ***Da***. This is now the new ***Db*** section.
6. The report page orientation is another way to add room or shrink a report. Landscape mode is always helpful if you need to add a couple of fields or see all of the text on one line. This option is found in *File* > *Page Setup. . .* > *Orientation*. Example 8

Removing Parameters

Parameters are special fields that query the user for information to be used in the report before the report will run. Common parameters used in Lucity reports include *subtitles* and *date* queries.

- These can be removed by clicking on the Parameter field and selecting *Delete*.

The report no longer uses the parameter field, but the parameter exists in *Field Explorer*. Unused parameter fields have been an issue in some of the Web reports.

To permanently remove the parameter field in *Field Explorer*:

- Right click on the specific parameter field and select *Delete*

  OR

- Click the parameter field and press the delete key.

➢ Parameter fields are recognizable by the "?" at the beginning of the field:

?Report Subtitle

In **V2016r2** there are two new options available through the Admin Portal to suppress the subtitle parameter for Dashboard and/or Web reports.

Inserting an Agency Logo

You may want to have your agency logo appear on your customized reports. This helps identify the report as one of your own.

The image to be added to the report should be a **Bitmap**, **TIFF**, **JPEG** or **PNG** type.

To insert an agency logo in our example report (**LC_ReqSum.rpt)**, complete the following steps:

1. You may need to make space in the report for your logo.
   a. Right click somewhere to the left of the report in the ***Page Header*** section and select *Insert Section Below*.
   b. In the new ***PHb*** section left margin, click and hold, the cursor should turn into a hand.
   c. Drag up into the ***PHa*** section and release. The two sections have switched places.
   d. Place the cursor over the line between sections ***PHa*** and ***PHb*** (it should turn into double horizontal lines with an arrow pointing up and one pointing down).
   e. Click and drag down to increase the ***PHa*** section size so that it can accommodate the logo.
2. To insert a logo into the ***Page Header a*** section, perform one of the following steps:
   - Click on *Insert* and select *picture*.

   OR

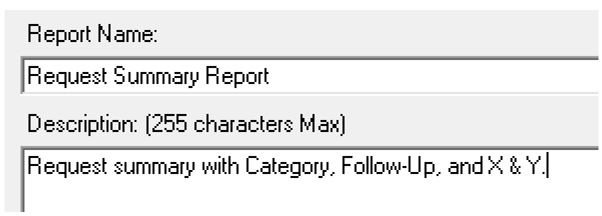
   - Click on the *Insert Picture* icon .

3. Browse out to the location of your logo file and double click to add it to the report.
4. You can resize the logo by clicking and dragging the corners and edges. You can change the placement of the logo by clicking and dragging the entire picture.
5. Resize sections as necessary.
6. Finally, right click in the ***Page Header a*** section and select *Merge Section Below*. You now have one ***Page Header*** section. *Save* and Close the Report.

Adding a Report to the Module

To use any new or revised reports within Lucity, you'll need to add them to the module where you wish to view them. The reports need to stay within the "family" for which they were created. For example, you may not run a Work report in Sewer modules.

1. Open the desired module. (ex. **Requests**)
2. Click on *Reports*  .
3. Select *Add*.
4. Click on the box with three dots next to *Report File Path*.
5. Find the report directory with the new report and double click on the report (**LC_ReqSum.rpt**).
6. Enter the report name and give it a description.

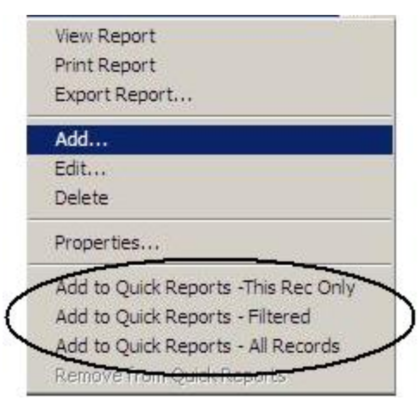


7. Select *Save*. This report is now available to be used within the module. Example 9

Accessing Reports in Lucity

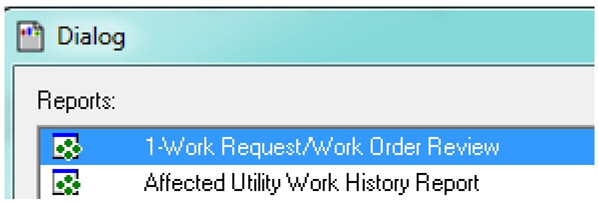
Within a module you may use any of the reports available in the reports dialog box. Frequently used reports can be added to the Quick Reports option (drop down arrow next to the Report icon). This can be set up in the Reports dialog.

Right click on the Report Title and select the type of Quick Report you would like saved. This setting is on a User Login basis. This allows various users to set up their own Quick Reports in whichever manner they'd like to see them.



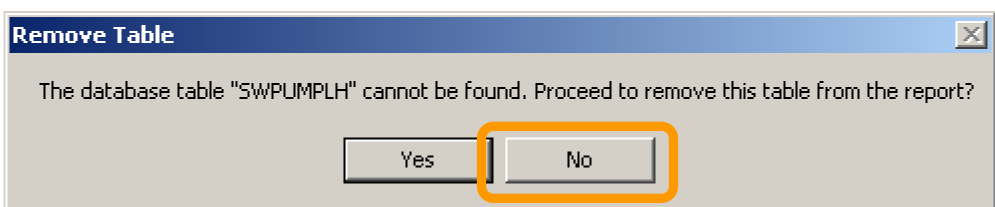
The report will be displayed with the hand icon before the report name.

Another means to access a frequently used report is to simply add a number in front of the name to bump it to the top of the list.



Datasource

If standard reports are copied and pasted instead of exported and then run or verified in the Crystal software, the original Lucity connection information is maintained, but the connection information specific to the customer's database won't be available. Thus, the report will be unable to find the proper database tables. You should receive a warning message similar to the following – Select ***No***:



If you receive the warning message displayed above, you have the following options:

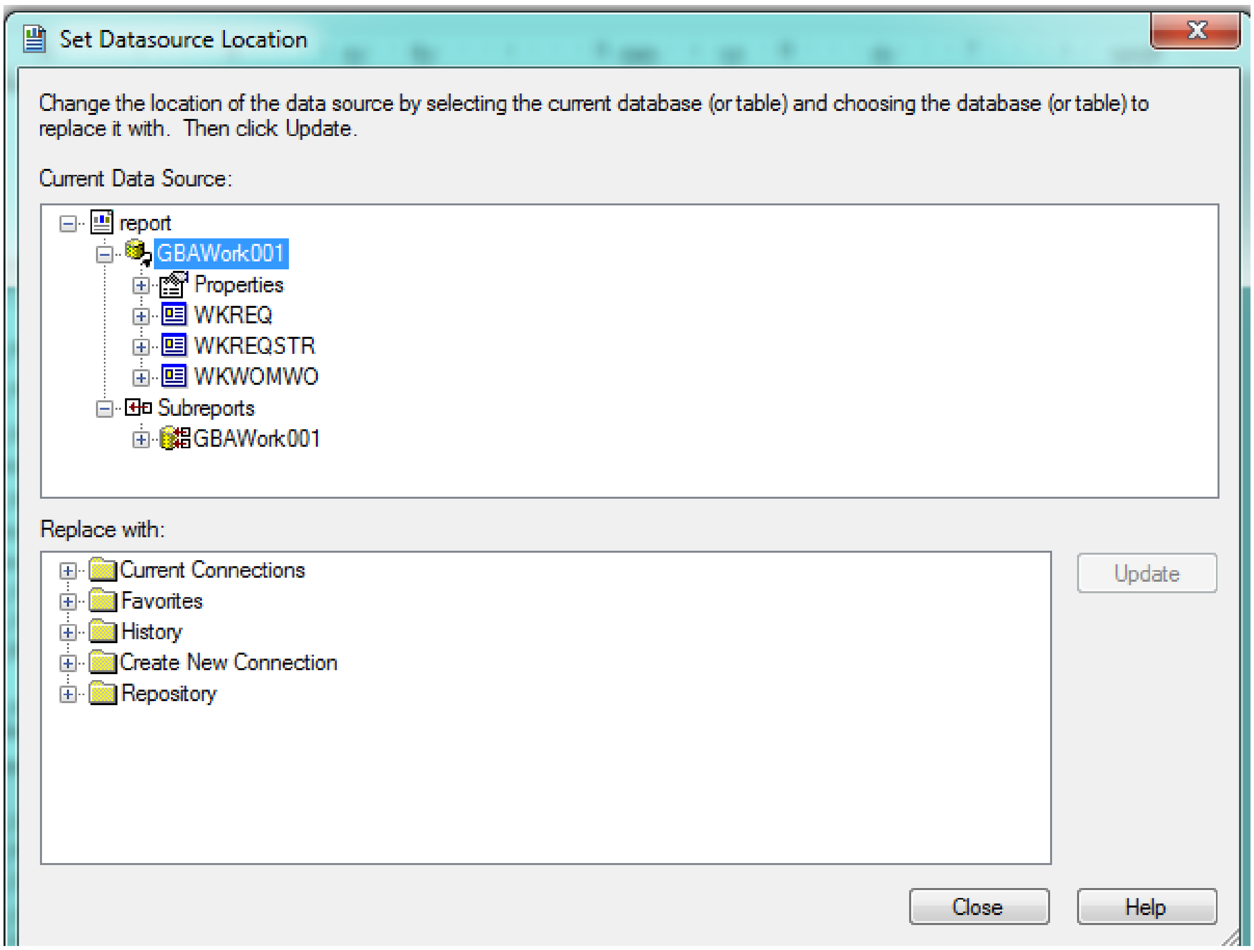
- Delete this copied report and export the report from the Lucity module. This process was explained previously.
- You can manually point each table in the report to the correct datasource.

The above options will repoint the connection strings. This will allow you to run the report in Crystal Reports, which is the quickest way to test the report modifications.

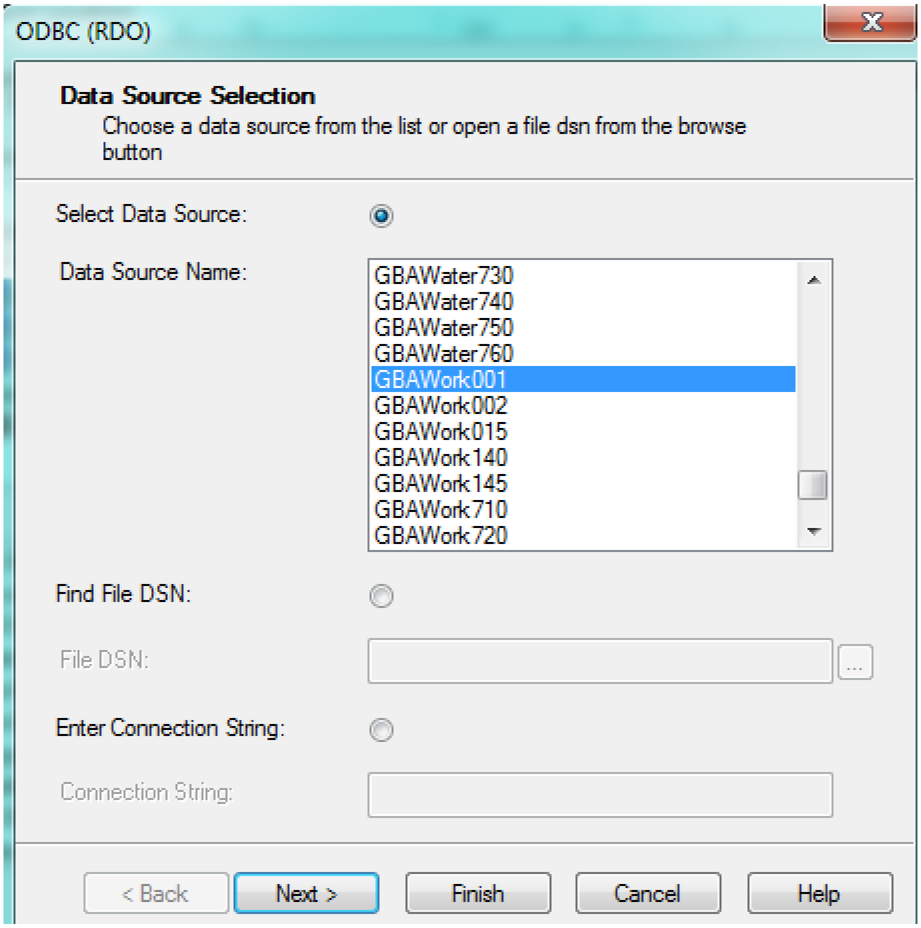
Set Datasource Location

Below, we've described the steps needed to set the Datasource Location for reports with database connectivity errors. Remember, you'll need to complete these steps if you've performed a "Save As" or copied and pasted a report and received a warning message informing you that certain database tables could not be found.

1. Within the open report, click on *Database* in the toolbar at the top of the screen.
2. Click on *Set Datasource Location*. The following dialog will appear:



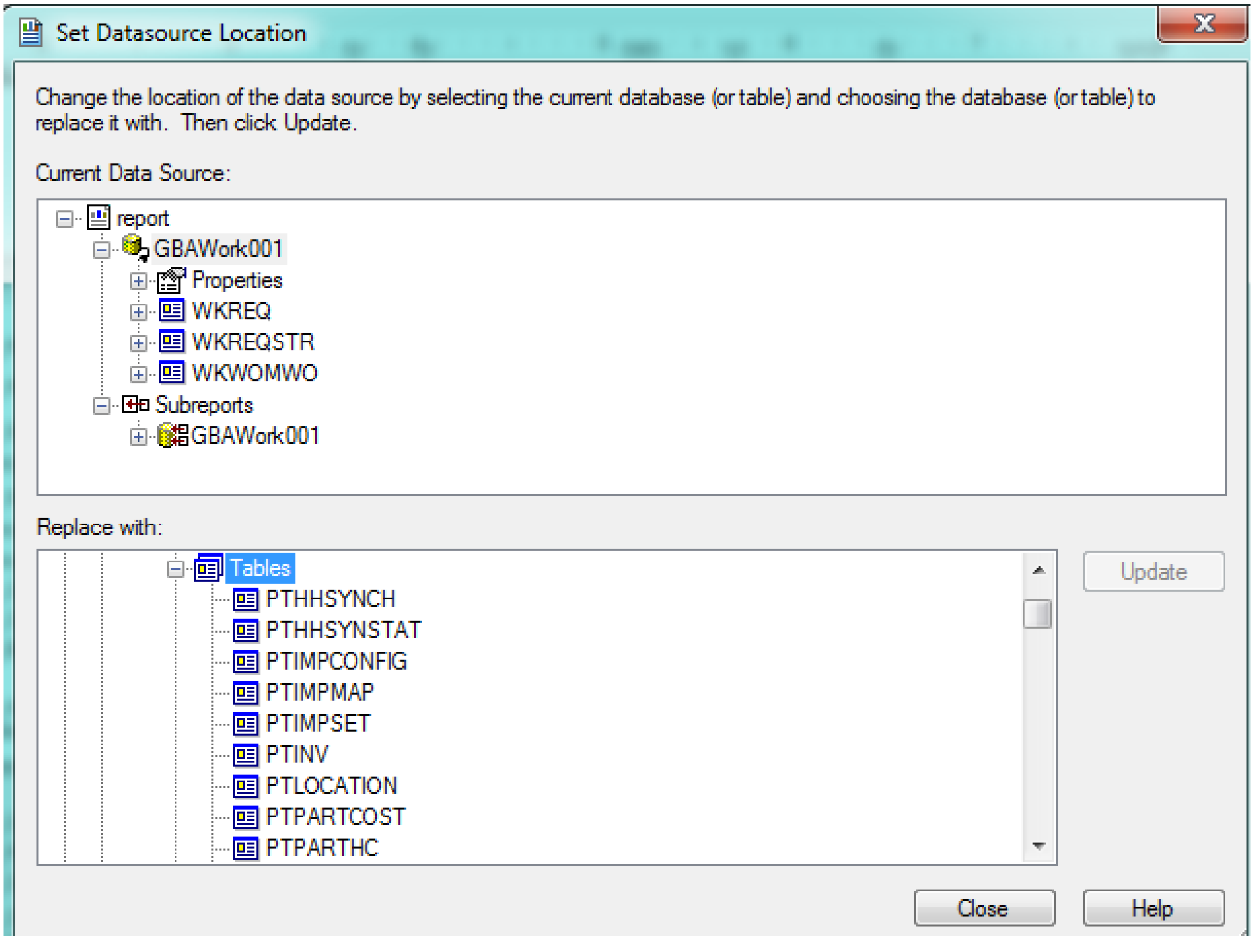
3. In the bottom window, open the *Create New Connection* folder.
4. Open *ODBC*. You'll see the dialog displayed on the following page:



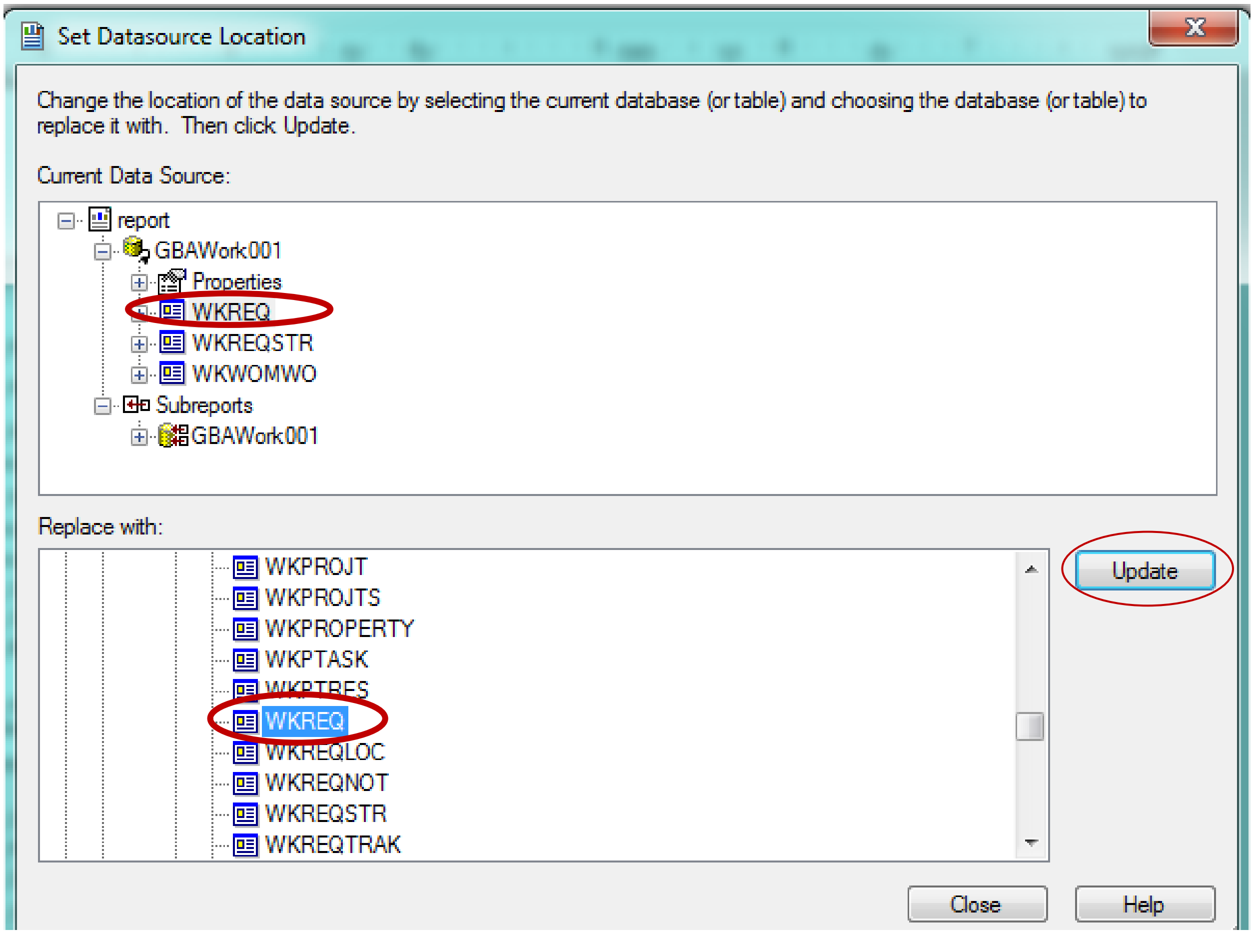
5. In the ODBC dialog, click on the correct Datasource name and then click *Finish*.
    - For example, here we've selected GBAWork001.

Notes:____

6. You'll return to the Set Datasource Location dialog. Now, open **Tables** in the bottom window.



7. Next you'll have to click on each table in the top window (*Current Data Source*) and find its match in the bottom window (*Replace With*). Click on the matching table name and then press ***Update***.
    - As you can see in the example below, we've selected the **WKREQ** table in both windows.

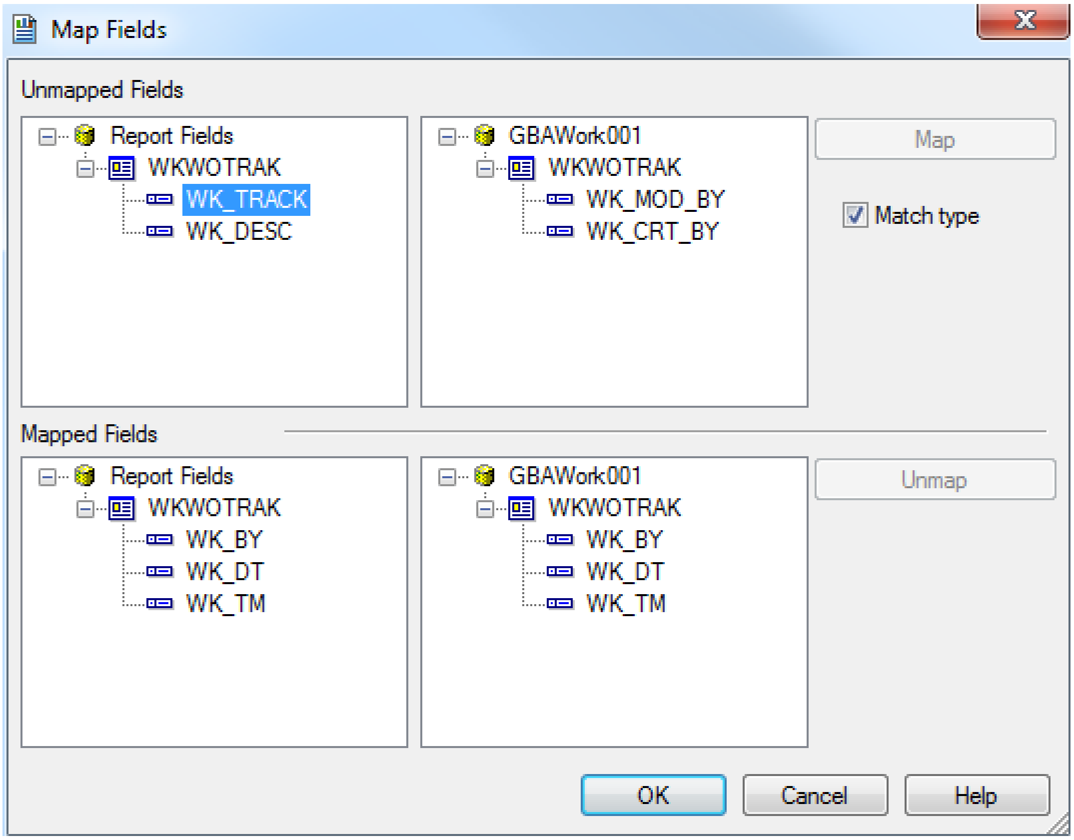


8. After updating each table listed in the top window, click *Close*.

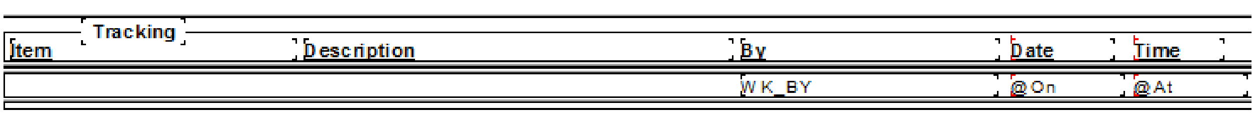
Note: Make sure to perform these steps with the Subreport tables as well!!

*Note: If the matching table names don't appear in the bottom window, open the **Synonyms** or **Views** tables and look for them there. Once the database is unified (version 2015R2 or later) Synonyms or Views should not be necessary unless the client has created a special View. If the database is unified and the table list cuts off, not showing the bottom of the alphabetical list, then check the Options Database tab and make sure the "Stored Procedures" is unchecked.*

9. If a field type has changed or been removed from the table since the report was last updated then there will be an issue with Field Mapping and you will see something similar to this:



- Sometimes unchecking the "Match type" checkbox will show the field to Map To but sometimes it doesn't.
- In Lucity 7.5 **Work** module > **Tracking** grid, the Tracked *Item* and *Description* fields were changed from a *Text* type field to a *Memo* type field. There was no option to match the Unmapped Fields to so selecting *OK* allowed the rest of the mapping to complete. When going into the Tracking subreport, these fields had been removed.

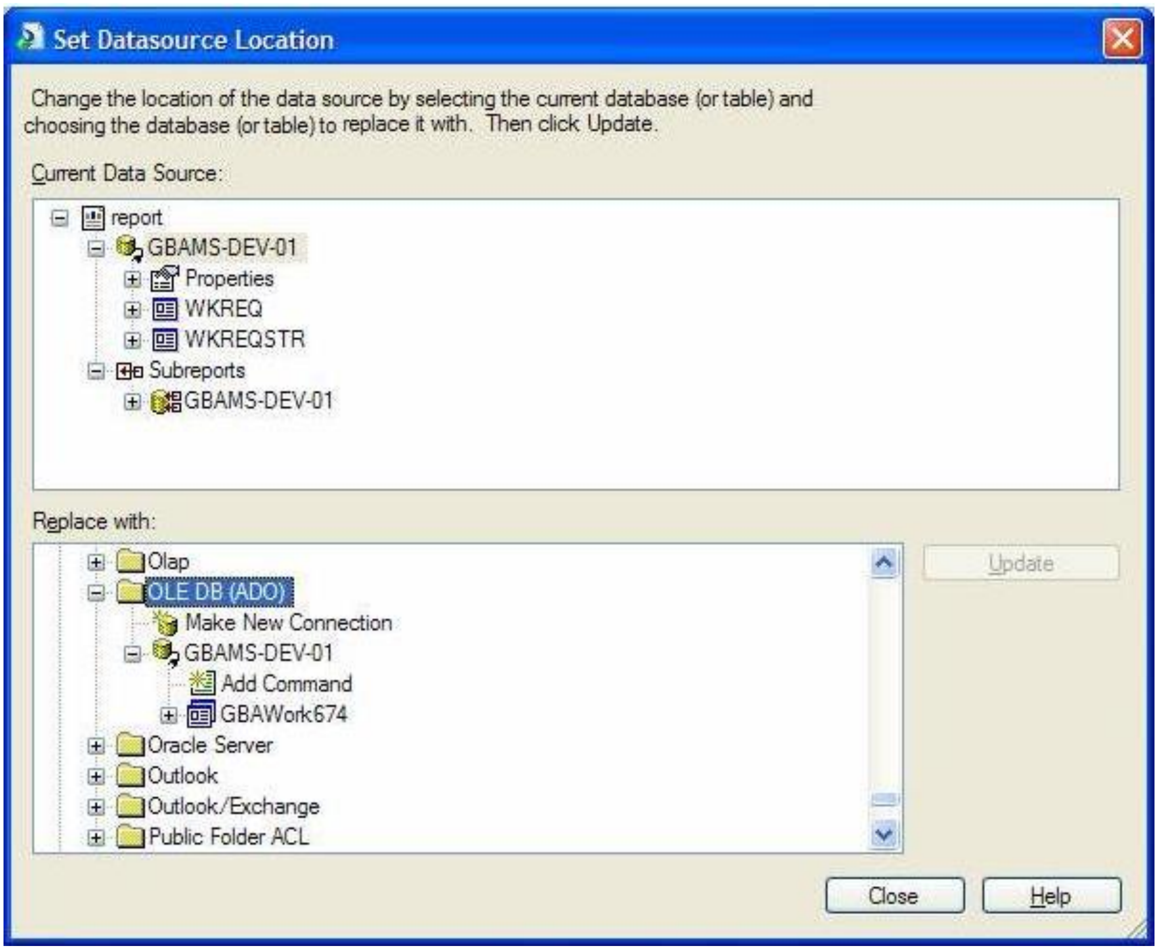


- These fields needed to be manually brought back into the report with the new field types. The fields have the same name; they are just a different type of field that allows more data.

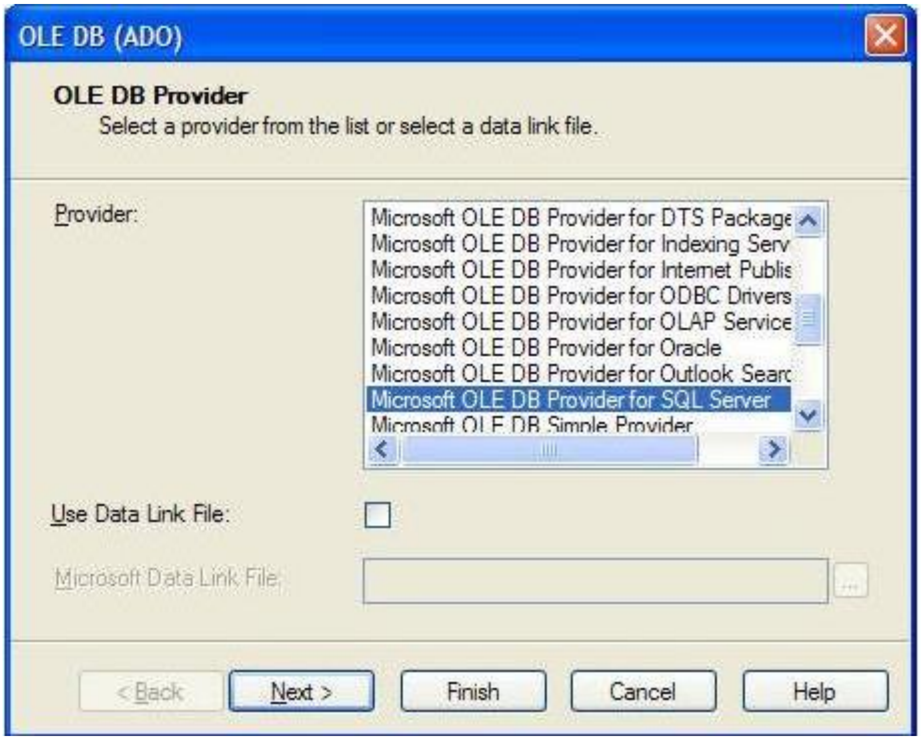
Converting Desktop Reports to use in the Web

Custom Reports that have been created for the desktop version of Lucity will NOT work in the Web application as is. To convert a report from a desktop Lucity report to a Web report, complete the following steps:

1. Make a copy of the desktop report and give it a new name (maybe add Web to the end of the file name). Open the Web report in Crystal Reports.
2. Go to *Database* >> *Set Datasource Location*.
    - **SQL Server Clients** select *OLE DB (ADO)* >> *Make New Connection*.
    - **Oracle Clients** select Oracle Server.

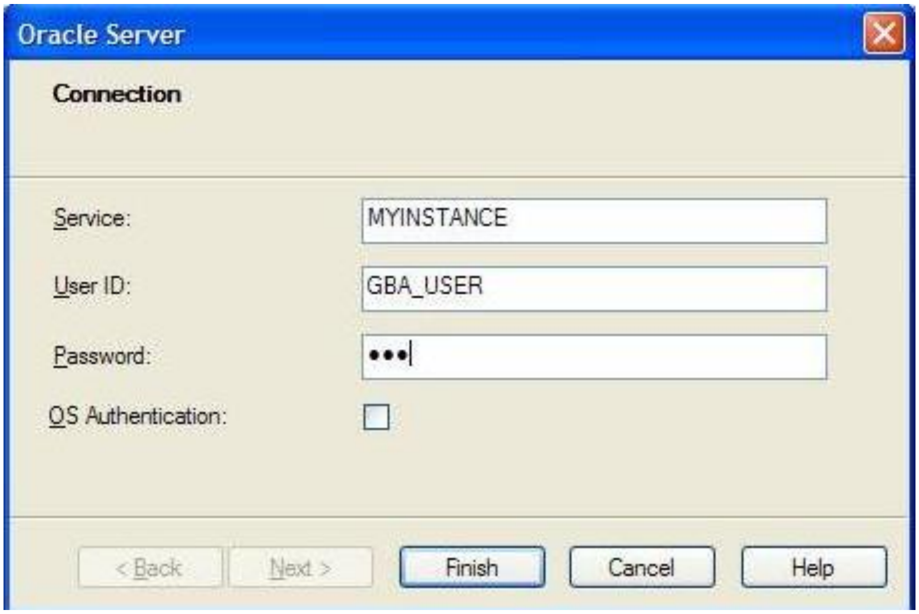


3. If you are using **SQL Server** you will then be prompted to select a provider. Use the Microsoft OLE DB Provider for SQL Server as shown below.



4. Next, enter the Connection information.
   - For **SQL Server**, include the SQL Server Name, User ID, Password, and Database.

- For **Oracle**, include the Service, User ID, and Password.



5. Once you create a connection you will need to individually (manually) map every table from the report one at a time. Don't forget the tables in the Subreports!

> *Note: The converted report needs to be added to the appropriate module in Web.*

Using Crystal Reports with Lucity

Beginner - 2

The second of a seven-part series, this workbook is designed for new Crystal Reports® users. You'll learn how to add selection parameters to a report including date ranges, secured fields, and selection categories. We'll also show you how to sort and group the report data. Finally, we'll show you how to add summaries and running totals to a report.

The screen captures in this workbook are taken from Crystal XI. Depending on which version of Crystal you are using, your screens may vary slightly.

Table of Contents

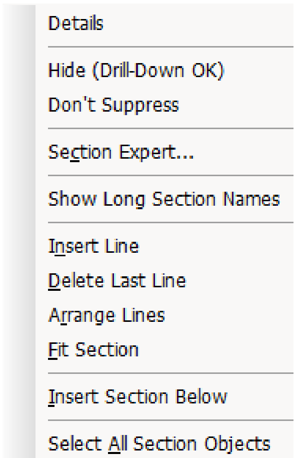
Section Options 3
Section Expert 3
Formatting Multiple Columns 4
Additional Options 6
Multiple Reports 6
Parameters 7
Date 7
Record Selection with Parameters 9
Adding Parameters to the Report Title 10
Formula Option 10
Text Object Option 11
Secured Fields (Main Body of Report) 12
Field Viewing Options 12
Field to Show Blank 12
Field to show "Hidden" 13
Logged in User ID and Logged in Employee Code – Web Only 13
Static and Dynamic Selections 14
Static Selections 14
Dynamic Selections 15
Using the Selection Parameter 16
Dynamic Cascading Prompts 18
Parameter Date Formatting for Entry 19
Sorting 20
Interactive Sorting 21
Grouping 23

Summaries 26
Running Totals 27
Work Order Reports 30
Importance of Grouping 30
Importance of Running Totals 31
Concatenate Fields 32
Address Formula 33

Section Options

Each section of the report has a variety of options available to it. To view these options, right click in each section to the left of the report.

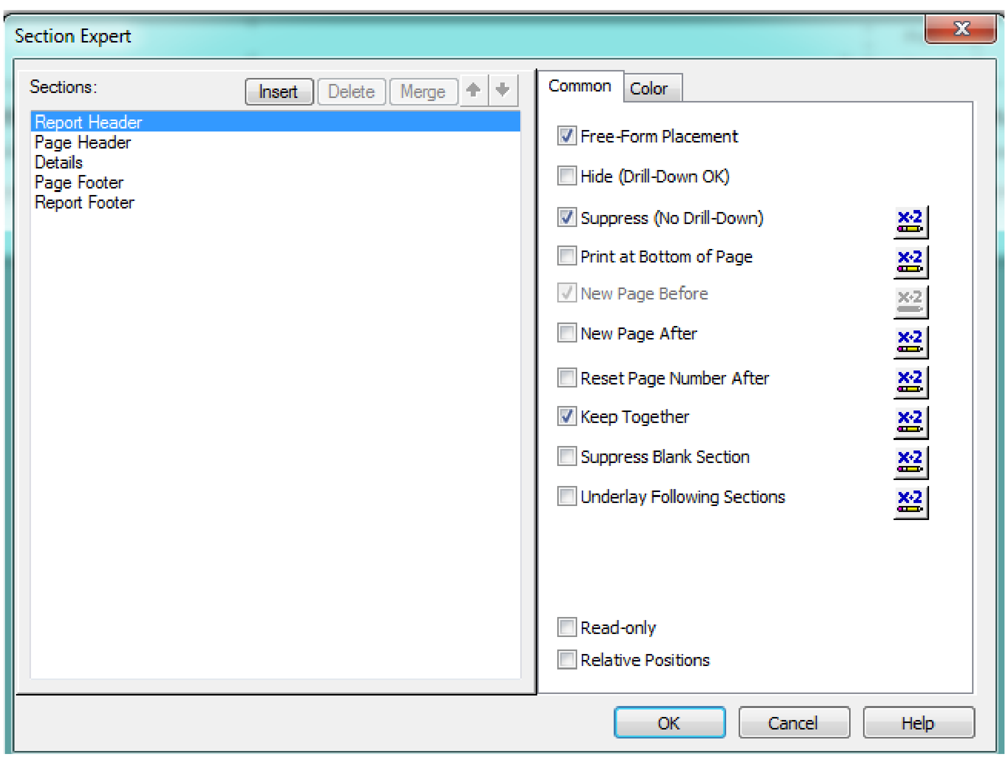
- Some useful options include *Suppress*, *Hide*, *Insert Section Below*, *Delete Section,* and *Select All Section Objects*. The availability of the options depends on the section.



Section Expert

The *Section Expert* can be accessed from the above right click menu or at the top of the report in the *Expert Toolbar* or under *Report* in the Menu Bar.

- Click on *Section Expert* . You'll see the following dialog:



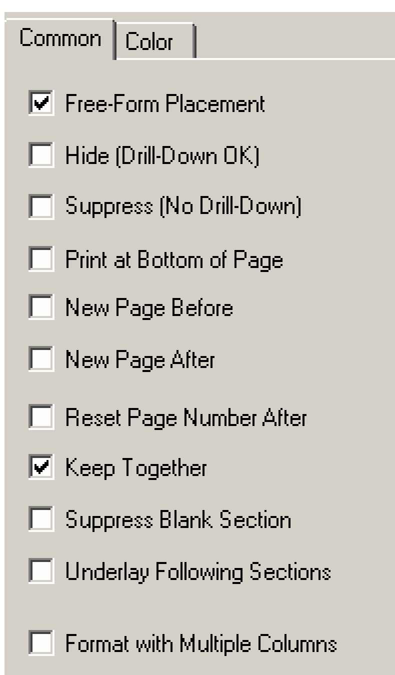
When a Section is clicked on and highlighted, the checked options show what has been set up for this section. Some options that have been chosen elsewhere, such as Suppress, are reflected here. Other useful options include conditional suppression of a section (using the *Suppress* formula button), *New Page After*, *Keep Together*, *Suppress Blank Section* (used for sub-reports), and *Format with Multiple Columns* (*Detail* section only).

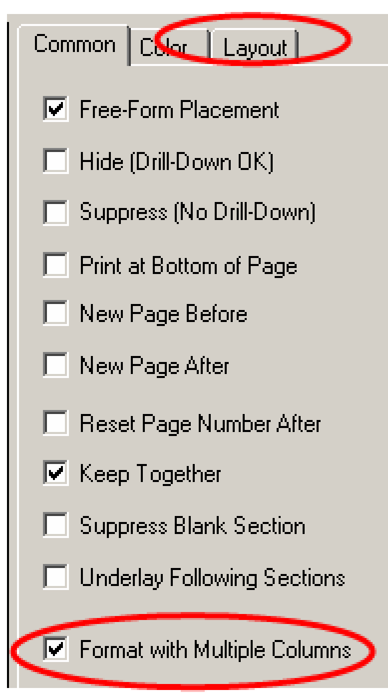
Caution: The *Keep Together* option has been known to cause odd blank pages at the beginning of a report or large blank spaces throughout the report.

Formatting Multiple Columns

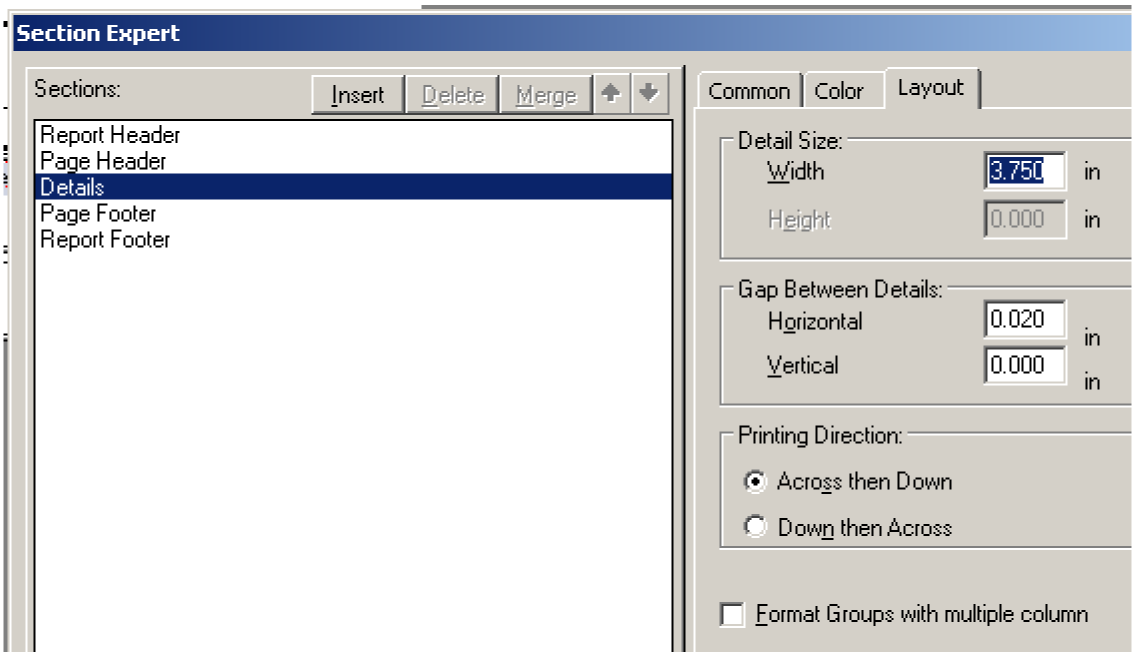
You may want to format a report with multiple columns. This is set up with the information in the *Details* section of the report and may also include the Group section data. To set up Multiple Columns, complete the steps below:

1. Within the Work reports file open **LC_ReqSumCol.rpt**.
2. Reduce the number of columns to two or three. Keep the **Request #**, **Record Date**, and **Status** fields.
3. Click on *Section Expert* and choose *Details*.
    - If you have multiple *Detail* sections then you must click on the top *Details* title (not *Detail a*) and all of the *Detail* sections will be duplicated. Individual *Detail* sections do not have the *Format with Multiple Columns* option.
4. Click on *Format with Multiple Columns*.
    - Note the addition of the *Layout* tab below:





5. Click on the *Layout* tab.
    a. You must enter a size for the column section in the *Detail Size*. Figure out how wide the first set of columns are from the ruler at the top and then allow at least that much for the duplicate section.
    b. The Horizontal Gap is the space between the columns.
    c. The Vertical Gap is the space between each line.
    d. It is also important to choose a *Printing Direction*.
    e. Click *OK* when you have finished altering the layout.



Note: The "Format Groups with multiple column" option at the bottom of the Layout tab allows this to be used in Grouping (discussed later).

The *Multiple Column* option is not available in the ***Header*** section.

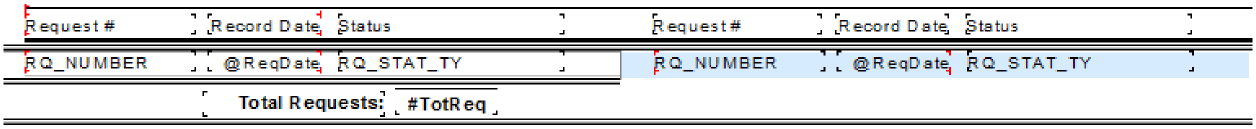
In order to identify your columns in the header, you'll need to create new column headings or copy the existing ones and paste.

The Landscape orientation is no longer necessary.

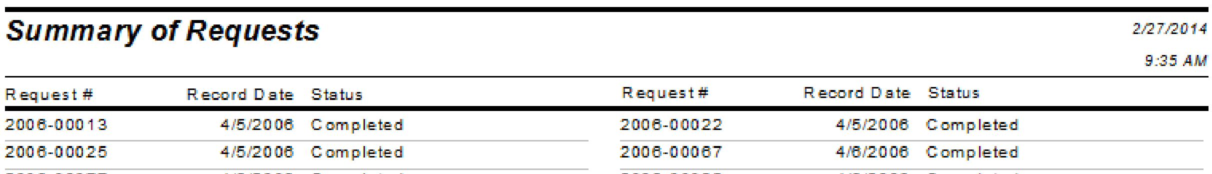
1. Shorten the Line in the *Detail* section to 4".
2. Shorten all other lines to 8".
3. Move the **Print Date** and **Print Time** right edges to 8".
4. In File > Page Setup… > Orientation select *Portrait*.
5. *OK*
6. Center Page number. *Save*

Below, you can see examples of the report Design and Preview.

Design



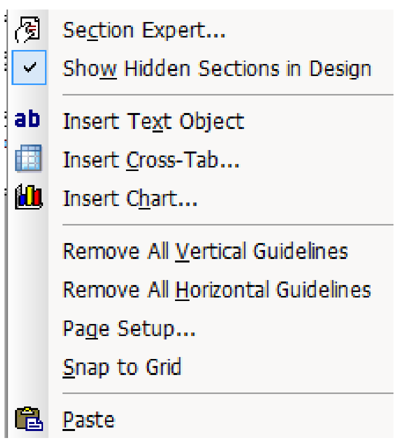
Preview



Additional Options

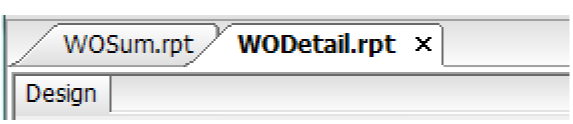
Right click in the main body of the report or Ruler to find additional options. These help with the report design.

- These include Snap to Grid, Remove All Vertical Guidelines and Remove All Horizontal Guidelines. Ruler, Guidelines, Grid, and Tooltips can be accessed through View in the top Menu Bar.



Multiple Reports

To quickly move between multiple reports it can be helpful to view them as multiple tabs. To set up this design, open your first report in Crystal then select ***File > Open…*** and then open the additional report to be viewed or worked on.



The report can be selected by clicking on the tab and closed by clicking on the X.

Parameters

Parameters are useful in creating reports that are more dynamic. The report will query the user for information and then typically use this in the record selection criteria. A common use of this feature is date ranges, categories and personnel.

Selection criteria are usually filtered on from within the Lucity modules. The report is then run using these criteria, and the specific criteria used can be stated in the subtitle. Sometimes, it is helpful to have the report make the selection. In the steps below, we'll show you how to set up these selection parameters in the report.

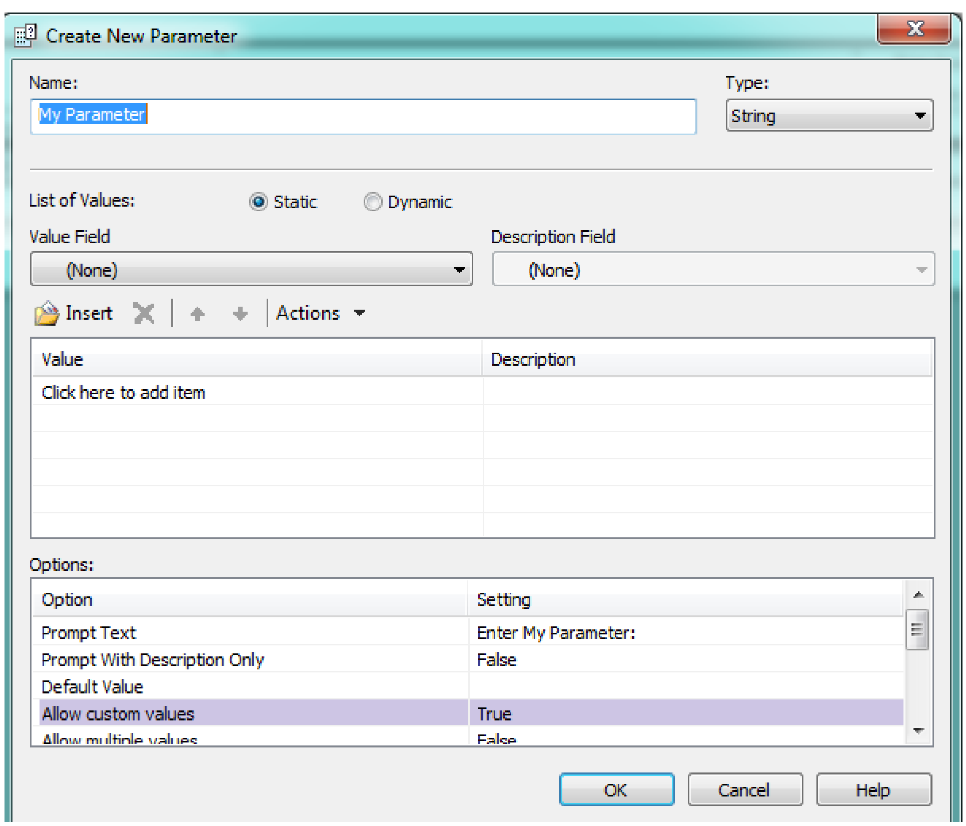
Date

In general it is best to set up a date range with two parameter fields. The report query will ask the user to supply a Start Date and an End Date.

1. From *Work* > *Requests*, we will modify the **Summary of Requests** report (**ReqSum.rpt**). For this example, open **LC_ReqSumDt.rpt**.
2. In **LC_ReqSumDt.rpt** open *Field Explorer* > *Parameter Fields*.
3. Right click on *Parameter Fields* and select *New*.

   OR

   Click on *Parameter Fields* and then click the *new* icon  in the *Field Explorer* toolbar.



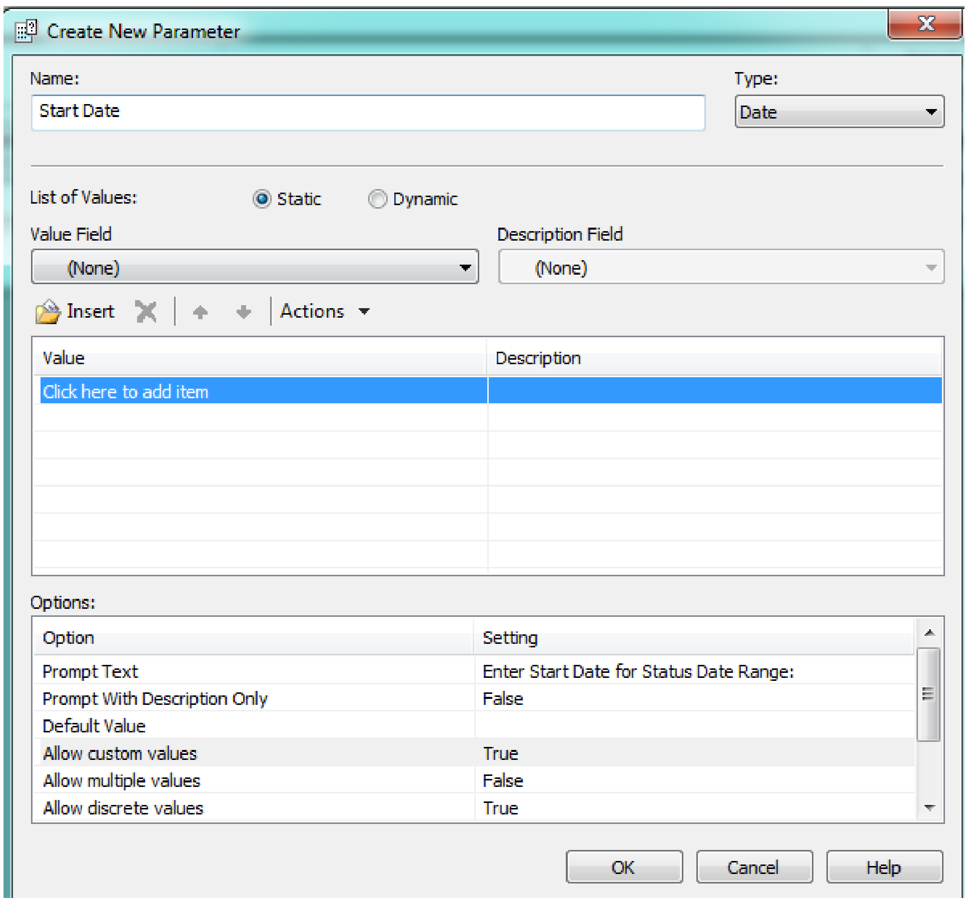
4. In the *Create New Parameter* dialog, include the following:

   a. Enter a *Name*. For our example, we've typed **Start Date**.

   b. Select the type of data that the parameter field will be. In our example, we will choose **Date**.

   > *Note: There is an option for DateTime which would correspond with our field type but in the report we have pulled the Date portion out of the field using the Date formula. If you had used the DateTime type then the user would have to enter the irrelevant Time portion of the field each time they ran the report.*

   c. Under *Options* the *Prompt Text* is automatically filled in with **Enter (Parameter Name)**. This prompting text can be revised by clicking in the box and adding or subtracting text. (We have added "**for Status Date Range**".)



   d. *OK*

5. Repeat this procedure for **End Date**.

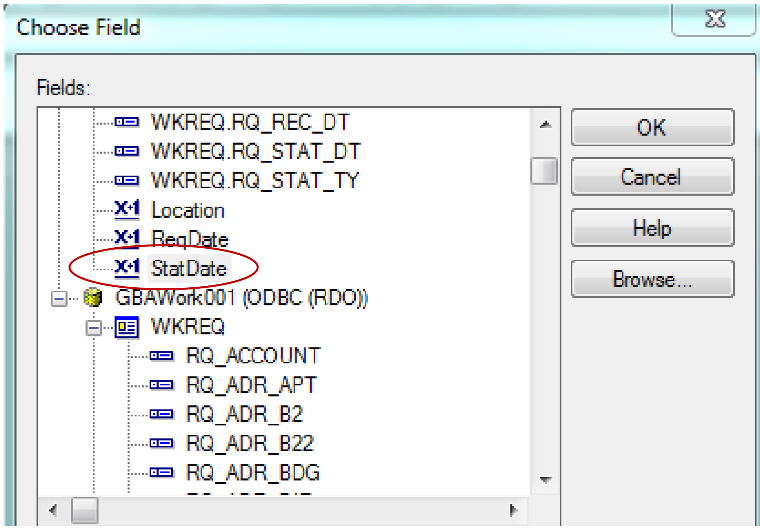
There are now two parameter fields (**Start Date** and **End Date**) that can be used in the selection criteria and in a date title.

> *Note: Even though the parameters have been created, the report will not use them unless they are put in the selection criteria.*

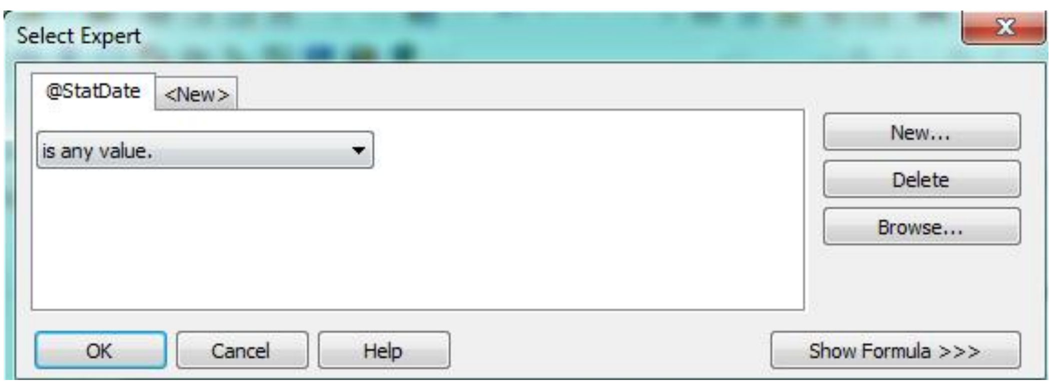
Record Selection with Parameters

To use your newly defined Date parameters in a report to select records, complete the followings:

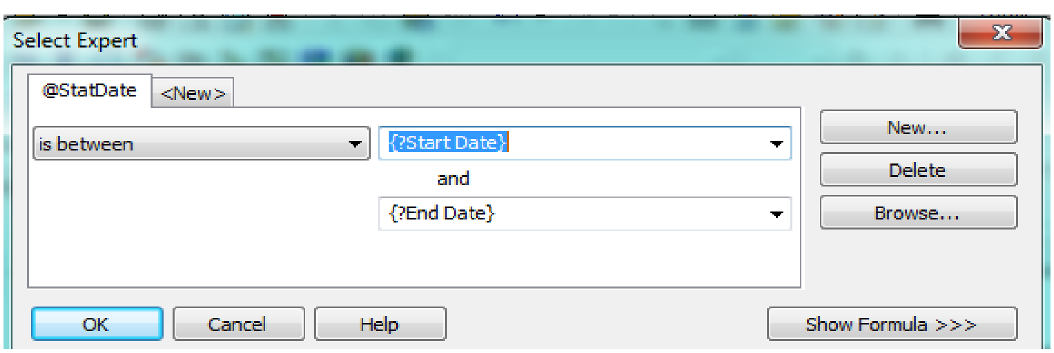
1. Click on *Select Expert* 
2. Click the Status Date Formula (**StatDate**).
3. Select *OK*.



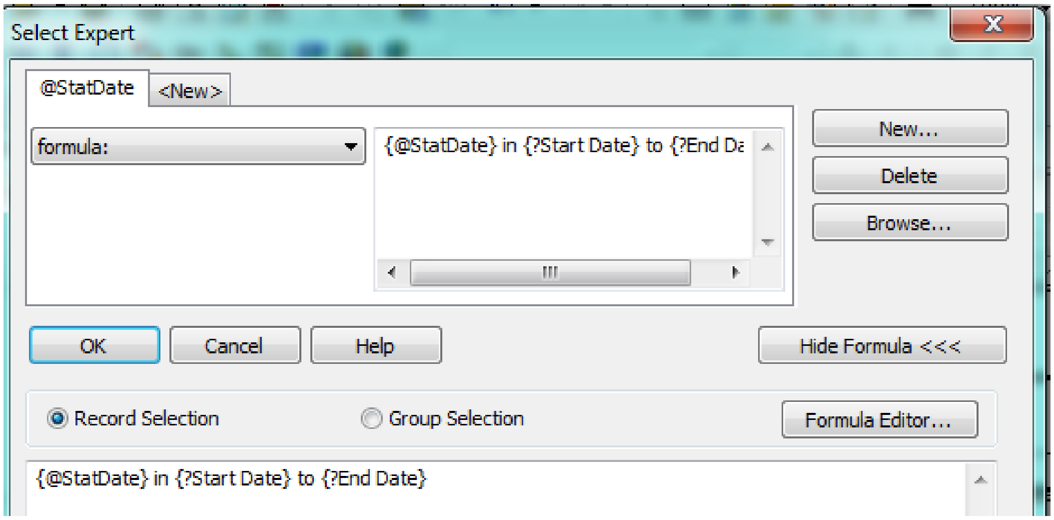
The dialog displayed below will appear:



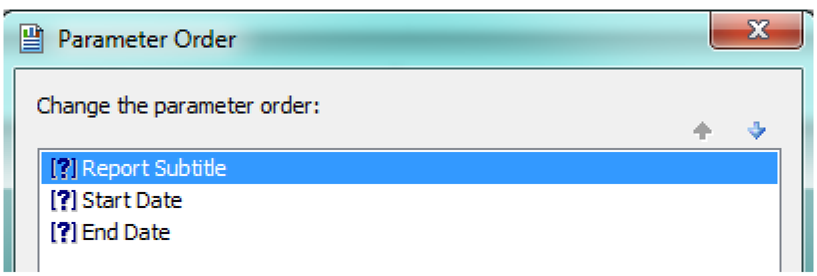
4. Select from the drop down boxes the appropriate criteria:



5. Then, if you would like to view the formula for the Selection Criteria that you have created, click on *Show Formula>>>*



Note: There is an option to Set Parameter Order when you right click on Parameter Fields in Field Explorer. This is the order in which you will be queried. You can click and drag the parameters (or use the arrows) to the correct order.



Adding Parameters to the Report Title

Once you've added Date parameters to a report, you'll want to add that data to the title section. This helps you know which dates are reflected in the report.

- You can manually enter the dates in the *Report Subtitle* parameter query.

  OR

- You can create a **Formula** to automatically state the dates selected and place in the Title section.

  OR

- You can create a **Text Object** and bring in the dates.

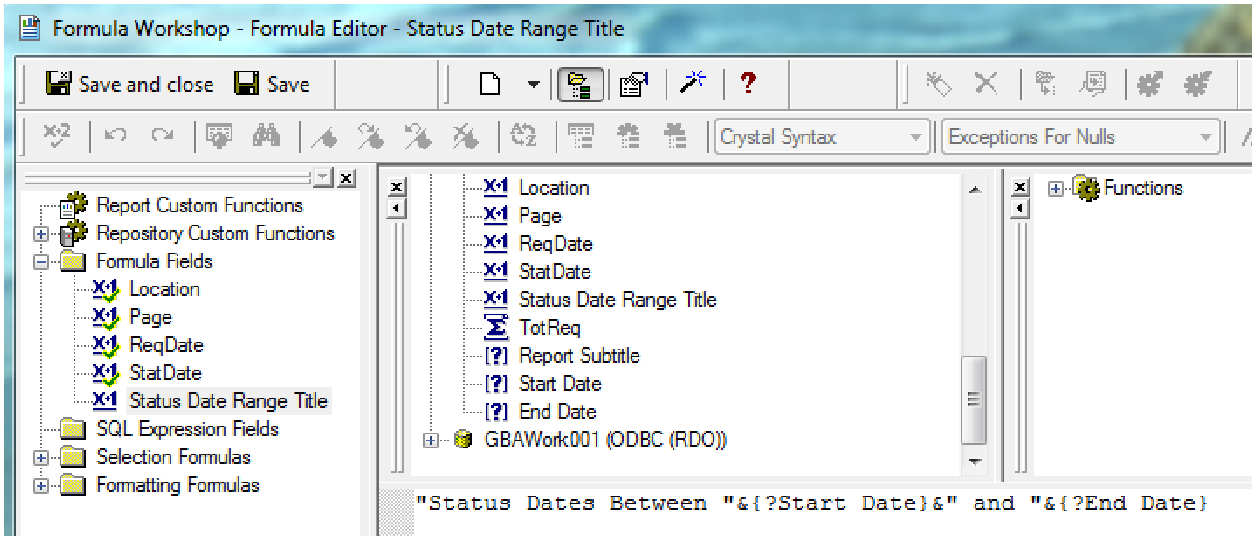
Formula Option

1. Right click on *Formula Fields* and select *New*.
2. Enter a descriptive name. For our example, we've typed "**Status Date Range Title**".

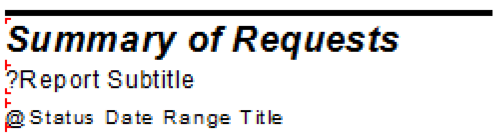
3. Select *OK*, then type in the following:

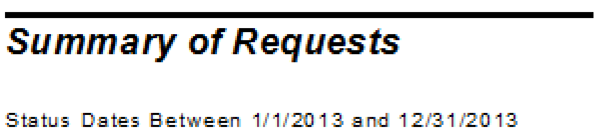
   "Status Dates Between "&{?Start Date}&" and "&{?End Date}

   The parameter fields can be selected from the Report Fields.



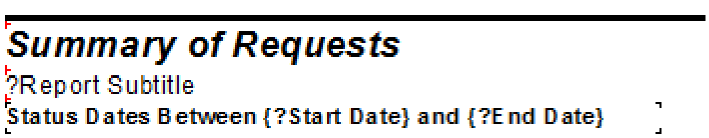
4. Now, either remove the Report Subtitle or create some room in the *Page Header* section to drag the @**Status Date Range Title** formula into the *Page Header*.

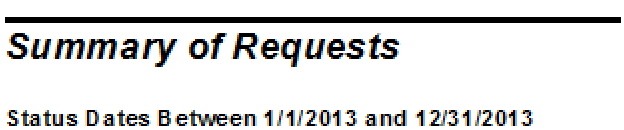




Text Object Option

1. Click on *Insert Text Object* and place below **?Report Subtitle**.
2. Type "**Status Dates Between and** "
3. Increase the box size to accommodate the addition of the Date parameters.
4. From *Field Explorer* > *Parameter Fields*, drag the **Start Date** in front of "**and**" and the **End Date** behind "**and**". Add spaces as needed.





Example 10

Secured Fields (Main Body of Report)

Sometimes fields should be hidden in reports if the person viewing the report does not have the proper level of security. This can be done by using parameters and formatting options.

> *Note: This will only work for fields in the main body of the report. Fields that need to be hidden in subreports will be addressed in our related workbook, Advanced Crystal 3.*

Many cost fields in Work Order reports are set to use the “Hidden” option. Sometimes you may wish to suppress the fields completely.

The following steps are provided so you can set up your own field security (step 7).

1. From *Work* > *Work Flow Setup* > *Employees* module, we will modify the **Employee List Report** (**EmployeeList.rpt).** From the Work report folder open **LC_EmployeeCost.rpt**.
2. Modify the **Department** text object to **Unit Cost.**
3. Add a text object to the right called **Overtime Rate**.
4. Remove the **EM_DEPT_TY** field.
5. Add from the **WKUEMP** table the **EM_UNIT_C** field beneath the **Unit Cost** heading.
6. Add from the **WKUEMP** table the **EM_OVERI_C** field beneath the **Overtime Rate** heading.
7. Right click *Parameter Fields* and select *New*.
8. Type in the *Name* - **ViewSecuredFields**.
    - This is a special parameter field that must have this name “ViewSecuredFields”. When the report is run within Lucity the security is passed to the report and will not query the user. If the report is run outside of a Lucity module, in Crystal, then the security will be queried.
    - If the report is refreshed, it will ask for the parameters again, including the permission to view the secure fields. At this point you can change the security value the report will run with.
9. Select the *Type* > **Number** and under *Options* > *Discreet* **Value -True**.
10. Click *OK*.

Field Viewing Options

Field to Show Blank

For a blank field to show up when the user does not have rights to view the secured fields, do the following:

1. Right click the field that requires suppression (**EM_UNIT_C**) and select *Format Field*.
2. Click the *Common* tab.
3. Click the formula box  next to *Suppress*.
4. Double click the **ViewSecuredFields** parameter from the **Report Fields**.

5. Type "= 0".

   {?ViewSecuredFields} = 0

6. Click *Save and close*.
7. Click *OK*

Field to show "Hidden"

For the word "Hidden" to show up when the user does not have rights to view the secured fields, do the following:

1. Right click in the field that requires suppression (**EM_OVERI_C**) and select *Format Field*.
2. Click the *Common* tab
3. Click the formula box next to *Display String*.
4. Type in:

   if {?ViewSecuredFields}=0 then "Hidden" else "$"& ({WKUEMP.EM_OVERI_C})

> *Note: The inclusion of the dollar sign is because once the formula brings in the word "Hidden", the formula requires the outcome to be text. The field will not allow number formatting.*
>
> *Using the "&" for joining is an implied "to text" for the number field. If a "+" had been used for joining, then a conversion would have been necessary +(totext(**{WKUEMP.EM_OVERI_C}**)).*

5. Click *Save* and *Close*.
6. Click *OK*

If the user did not have permission to view Employee costs, then because of the field set ups, the Unit Cost is blank and the Overtime is showing "Hidden".

Unit Cost	Overtime Rate
	Hidden
	Hidden
	Hidden

It would be helpful to make a notation at the bottom of the report to explain why some of the fields are "Hidden", such as:

"A Hidden field indicates permission to view the secured field is turned off."

Logged in User ID and Logged in Employee Code – Web Only

For versions 7.4 or later the **Logged in User ID** and **Logged in Employee Code** can be brought into the report straight from Lucity. This information is being brought in from the Employee module in Work and is set up much like the "ViewSecuredFields" parameter.

➢ For the User ID, create a new parameter called **LOGGEDINUSERID**.

➢ For the Employee Code, create a new parameter called **LOGGEDINEMPCODE**.

Both parameters are *String* type fields.

Drag the parameter fields into the report. When the report is run from Lucity, these fields will populate with the correct Logged in User information.

Static and Dynamic Selections

A pick list of values to use in a report is possible by using parameter fields. An example of this use will be shown in selecting Categories.

1. From *Work* > *Work Flow Setup* > *Category*, we will modify the **Category with Problem and Task Report** (**CatProbTask.rpt**). From the Work report folder open **LC_CatProbTaskCat.rpt**.
2. Right click *Parameter Fields* and choose *New*.
3. Enter the *Name* (**Category**). Beginning with version 2015, Lucity Web will support dynamic parameter selections but requires the *Name* to be that of the specific field. (See Dynamic Selections)
4. Enter the *Type* (**String**).
5. Choose the "List of Values" type. Set up as either a Static Selection or Dynamic Selection. (Discussed next)

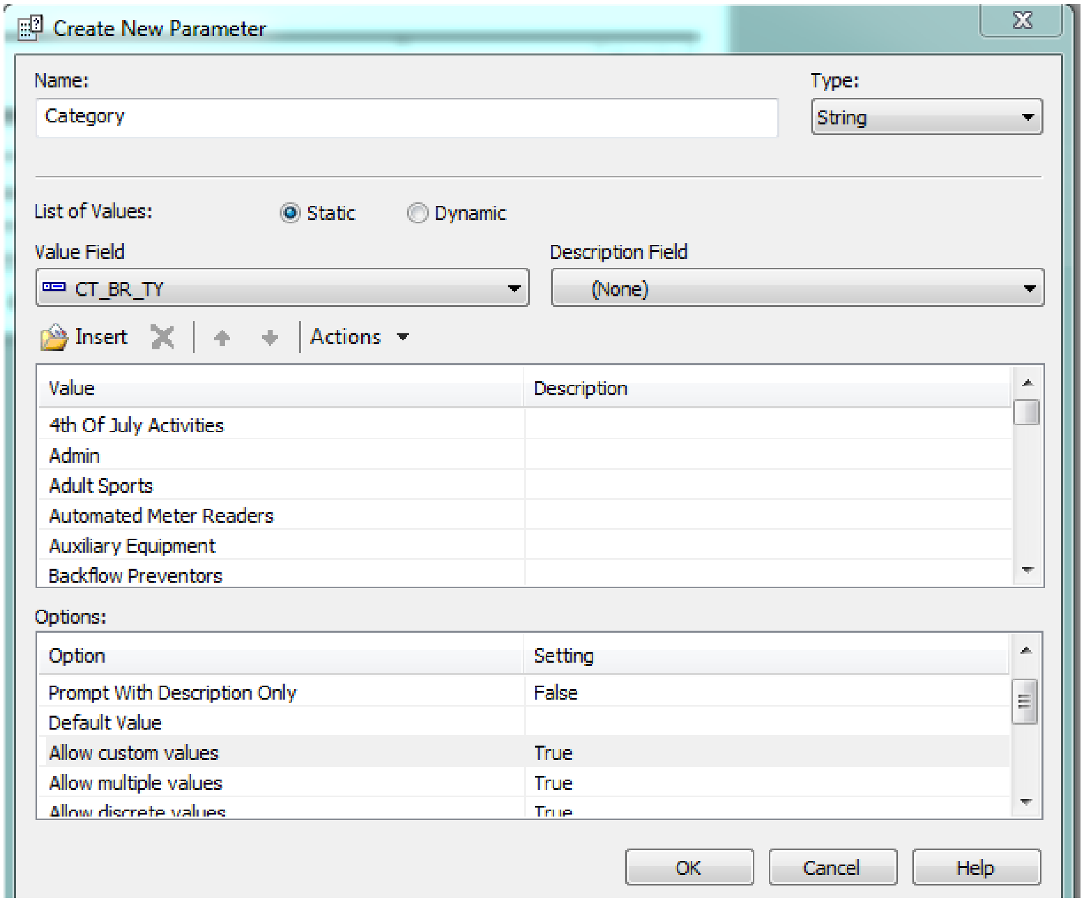
Static Selections

This allows selection from a set list of values for a specific field.

1. Next to "List of Values:" select *Static*.
2. Under *Value Field* select **CT_BR_TY** (This is the Category text field).
3. If you want to choose specific Categories to be in your selection list, click Insert 

.
4. Click on the down arrow under *Value*.
5. Click the Category that you want in your list.
6. For each additional Category, click on a blank line, and then click on *Click here to add item*, and then click the down arrow for the list.
    - If **All** the Categories should be in the list, click *Actions* and choose *Append all database values*.
    - This drop down box is also where you can clear all values in a list.
7. Under *Options* you may revise the *Prompt Text*. It has automatically placed the *Name* (**Category**) after **Enter**.
8. Under *Options* place True next to both *Allow discreet values* and *Allow multiple values*.
    - The True and False options may be changed by clicking on True (or False) which will cause a drop down of True or False to select from.

9. Click *OK*.



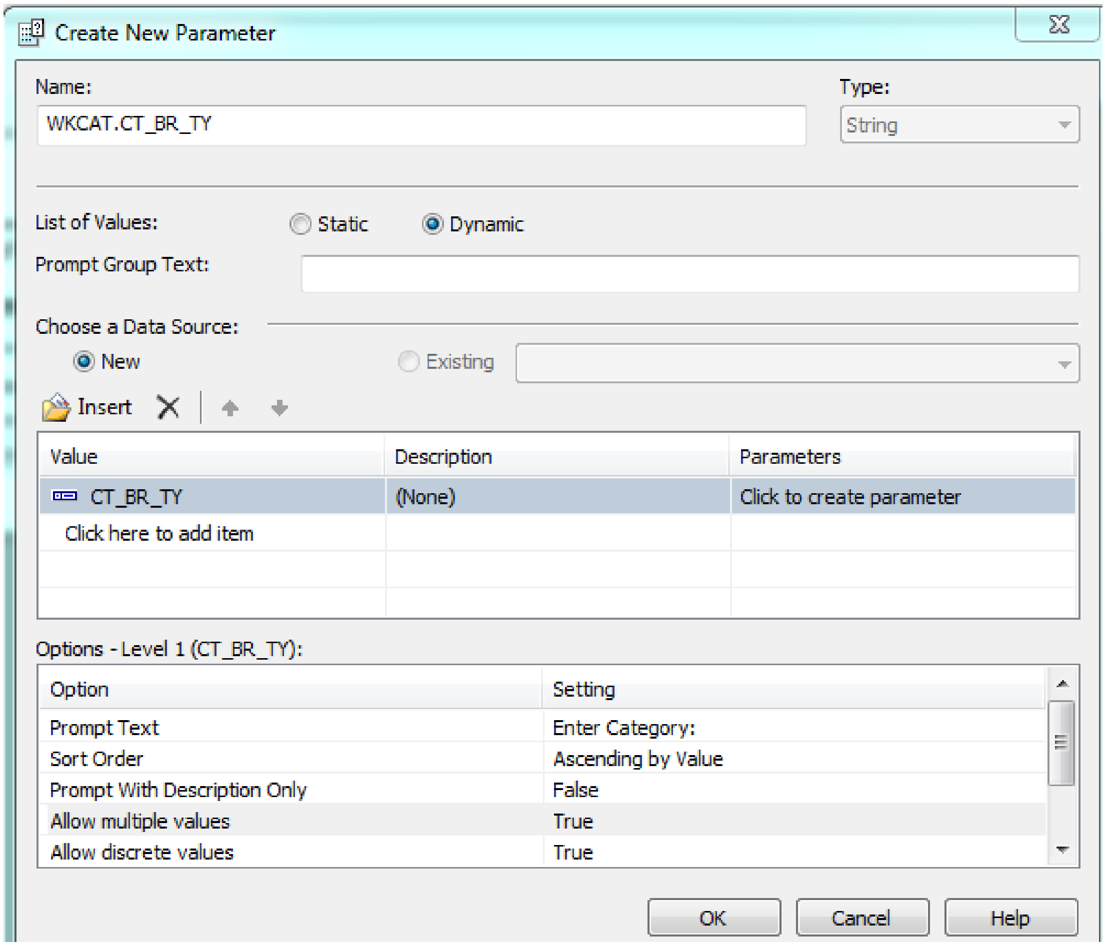
Dynamic Selections

This allows selection from whatever values are in a specific field at the time the user runs the report.

Prior to V2015 for this option to be used with Web reports, the report needed to be developed in Crystal 2008 or later and run with the HTML view where the dynamic selection was only available after the report ran initially. Lucity version 2015 Web supports dynamic selection for either Advanced View (HTML) or Basic View (pdf).

1. Create a new parameter named **WKCAT.CT_BR_TY**. For the Dynamic pick list to show up in V2015 or newer the field name needs to be used. Even if you are using an older version of Lucity, the parameter should be set up this way so it will work correctly when you upgrade.
2. Type is **String**.
3. Next to *List of Values:* select *Dynamic*.
4. Under *Choose a Data Source*, select New.
5. Then Click either *Insert* or *Click here to add item*. Select the field in question.
6. Edit the Prompt text if desired.
7. Select Options

8. *OK*



*Note: For Web reports, make sure the Show on (Viewer) Panel option is set for **Editable**.*

Option	Setting
Show on (Viewer) Panel	Editable

Using the Selection Parameter

You must now add this selection criterion to the *Select Expert*.

Static parameter

{WKCAT.CT_BR_TY} = {?Category}

Dynamic parameter

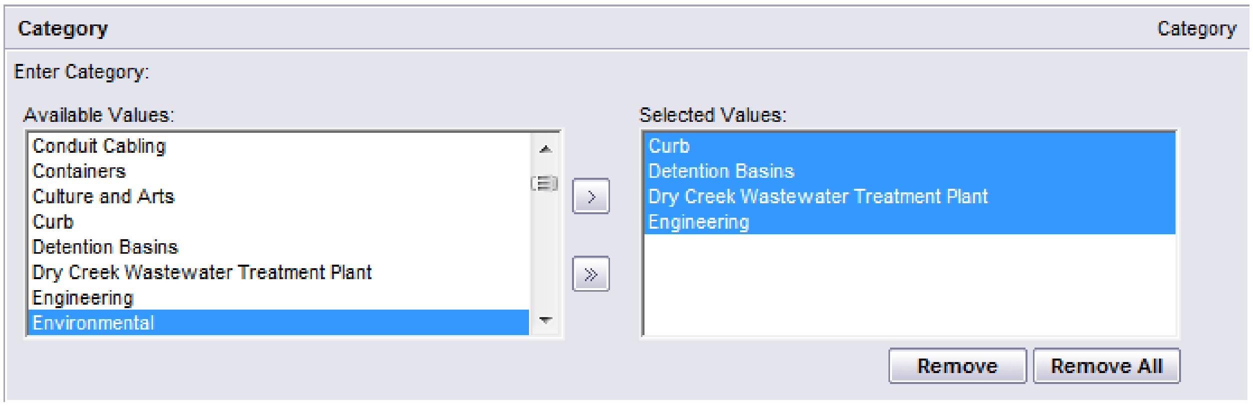
{WKCAT.CT_BR_TY} = {?WKCAT.CT_BR_TY}

When the report is run and the Category parameter is queried, it will appear similar to the following example.

- Below, we have selected a **group** of Categories by clicking on Curbs.

  Then shift/click on Engineering

  Then the > button



- Individual Categories can be moved by clicking on the Category and then the > button.
- All of the Categories can be selected by using the >> button.
- Another helpful way to select Multiple values is selecting the value then holding the control key(Ctrl) down and selecting additional values, then moving these values over with one click on the > button.

The **Remove** and **Remove All** buttons work with the *Selected Values:* window.

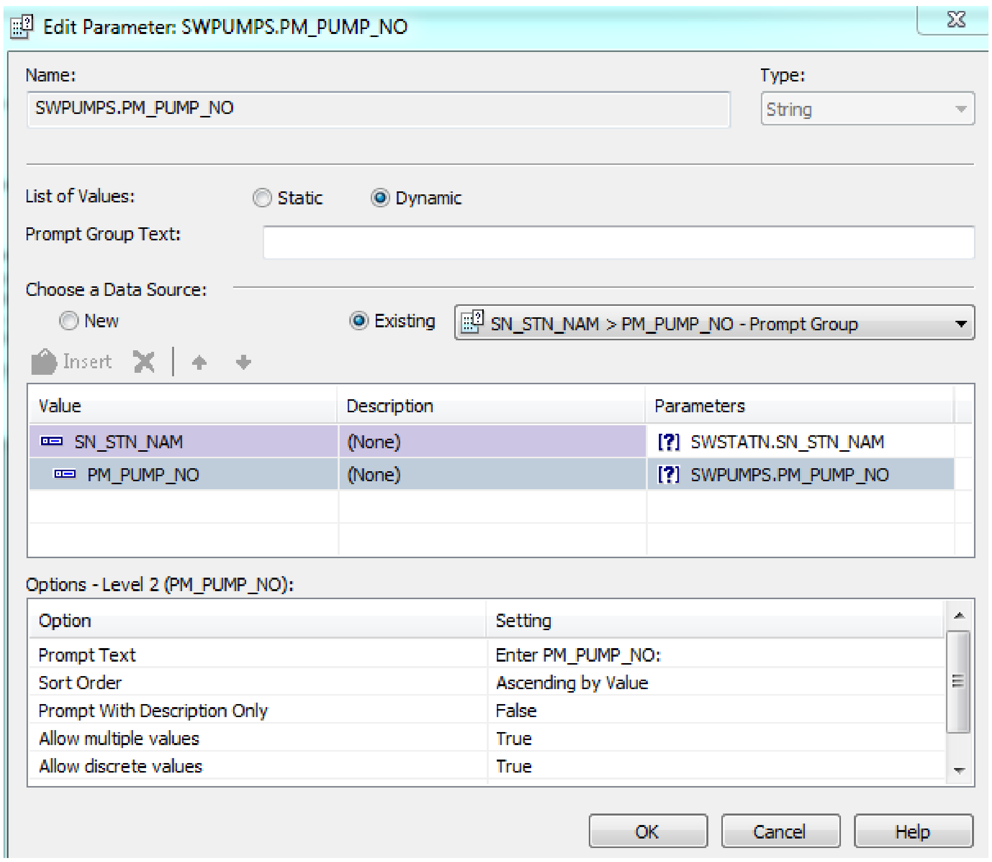
OK

Example 11

Dynamic Cascading Prompts

A dynamic cascading prompt allows the user to choose first one selection criteria and for this chosen selection then choosing a second one. Possibly Web only. There have been issues using this with Crystal XI which is what Desktop runs.

For a Sewer Pump Station report a parameter was created to choose a Pump Station and then once the station was selected then the pumps were selected from a list of pumps associated with the station.

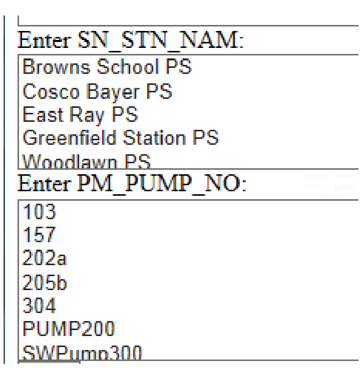


The selection criteria within the *Select Expert* would be set up like this:

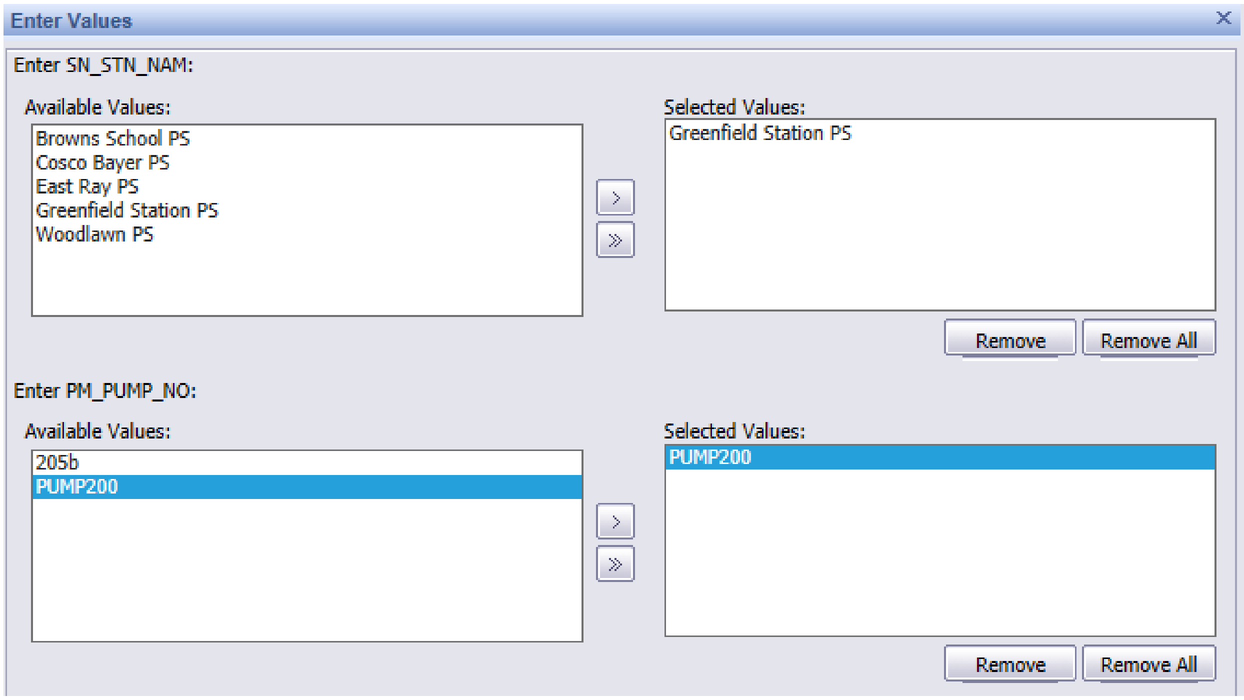
{SWPUMPS.PM_PUMP_NO} = {?SWPUMPS.PM_PUMP_NO} and

{SWSTATN.SN_STN_NAM} = {?SWSTATN.SN_STN_NAM}

When running the report in Web the following prompt would show up:

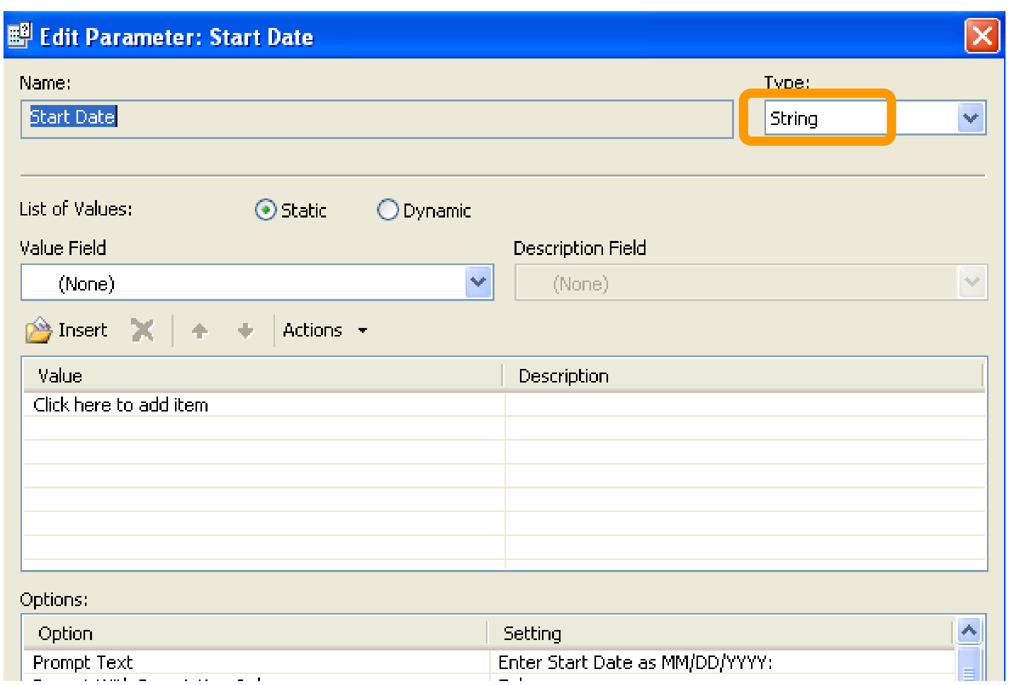


It does not use the cascading feature. If the report uses the Advanced View and is rerun with the parameter tab it works correctly:



Parameter Date Formatting for Entry

Crystal expects dates to be entered as yyyy-mm-dd. A client wanted to be able to enter dates mm-dd-yyyy. To get around the standard Crystal formatting, the date parameters were set up as string fields instead of date fields.



When the parameters were used in the *Select Expert* they were converted to Date type fields.

Date ({WKRESRCE.WR_END_DT}) in [CDate ({?Start Date}) to CDate ({?End Date})]

> *Note: Later versions of Crystal allow the parameter date entry in the mm-dd-yyyy structure.*

Sorting

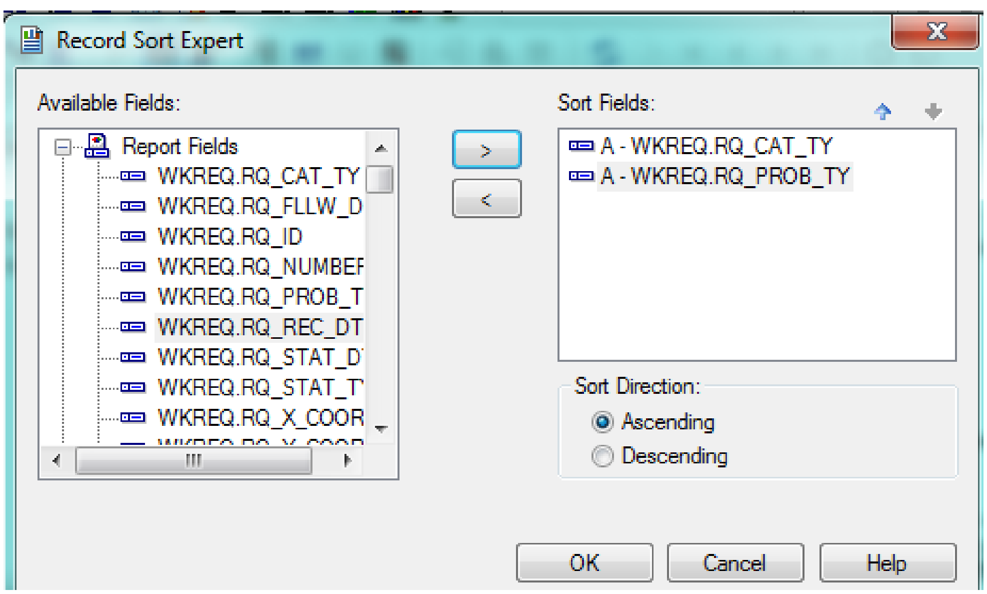
Sorting is a simple method to view data in your report in a certain order; ascending or descending.

Crystal Reports allows sorts within sorts, each sort reflecting its own sort direction.

If there is grouping in a report (discussed next), the grouping comes first before any field sorting. Many of the work reports have groupings to deal with duplicate records created in filtering so simple sorting will not work. Additional sorting results can usually be accomplished with additional groups.

We are going to set up a simple sort within the **LC_ReqSum.rpt** report (created in the Beginning Crystal 1 document). The following steps will set up a sort on the **Category** then within Category a sort on the **Problem**.

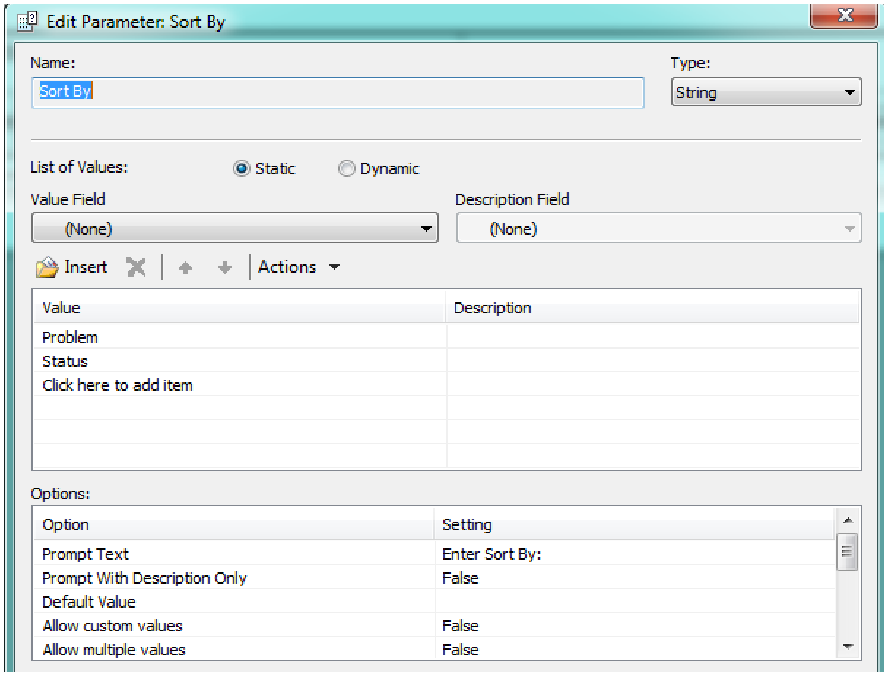
1. Click *Record Sort Expert* .
2. Choose the field to be sorted by. This is typically found in the *Report Fields*.
    - Click on **RQ_CAT_TY** and move to the *Sort Fields* box by pressing the > button.
3. Then select the *Sort Direction: Ascending* or *Descending*.
4. Repeat this for the **RQ_PROB_TY** field. Each field's Sort Direction is independent of the other fields to be sorted on.



Interactive Sorting

To create a report with a choice of sorting, we will modify the **Summary of Requests** (**ReqSum.rpt)** report. From the Work report folder open **LC_ReqSumSort.rpt**.

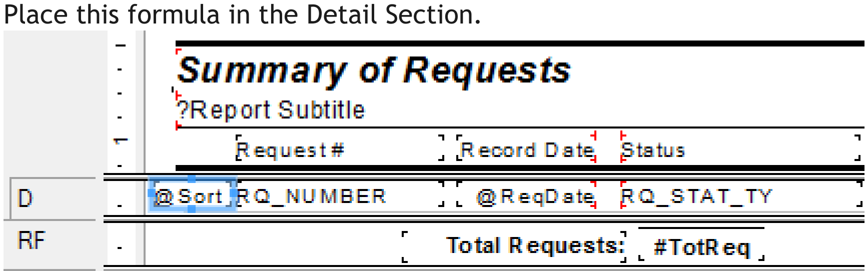
1. First we will create a Static parameter formula to list what the sorting choices are. (**Sort By**)



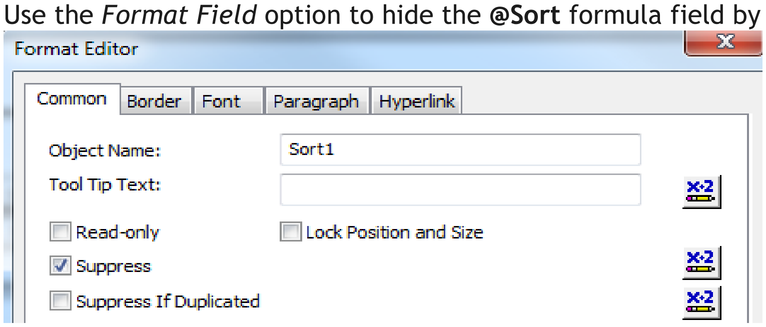
2. Using Formula Workshop, create a formula (**Sort**) to use the correct sorting parameter.

```
If {?Sort By}="Problem" then {WKREQ.RQ_PROB_TY}
Else if {?Sort By}="Status" then {WKREQ.RQ_STAT_TY}
```

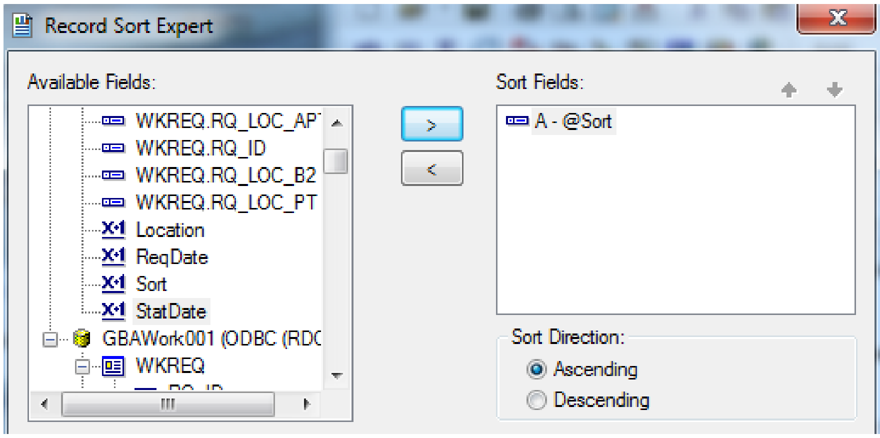
3. Place this formula in the Detail Section.



4. Use the *Format Field* option to hide the **@Sort** formula field by *Suppressing*.

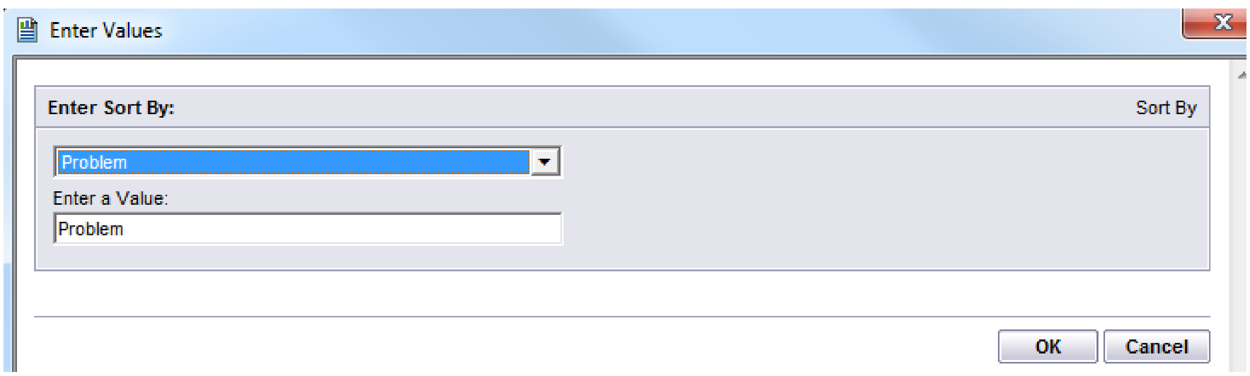


5. Place the **@Sort** formula under *Sort Fields:* in the *Record Sort Expert* .



Preview

The following prompt will appear. The drop down arrow will show the fields to be sorted by.



Summary of Requests

Request#	Record Date	Status	Status Date	Priority	Problem
2006-09991	12/8/2006	New Request	12/8/2006		
2007-01256	1/8/2007	W O Completed	1/9/2007		
2009-00015	8/7/2009	New Request	8/7/2009		
2009-00021	8/7/2009	New Request	8/7/2009		
2009-00022	8/7/2009	New Request	8/7/2009		
2009-00027	8/7/2009	New Request	8/7/2009		
2012-00001	3/6/2012	New Request	3/6/2012		
2007-05272	2/6/2007	New Request	2/6/2007		Abandoned W aste
2006-03598	11/1/2006	Completed	11/2/2006	Immediate Priority	Accident Response
2006-07730	11/27/2006	Completed	11/30/2006		Accident Response
2006-07878	11/28/2006	Completed	11/30/2006		Accident Response
2006-09695	12/7/2006	Completed	12/21/2006		Accident Response
2007-04571	1/31/2007	New Request	1/31/2007		Accident Response
2006-04078	11/3/2006	W O Completed	11/11/2006	Immediate Priority	Bees In The Box
2006-04113	11/3/2006	W O Completed	1/2/2007	Immediate Priority	Bees In The Box

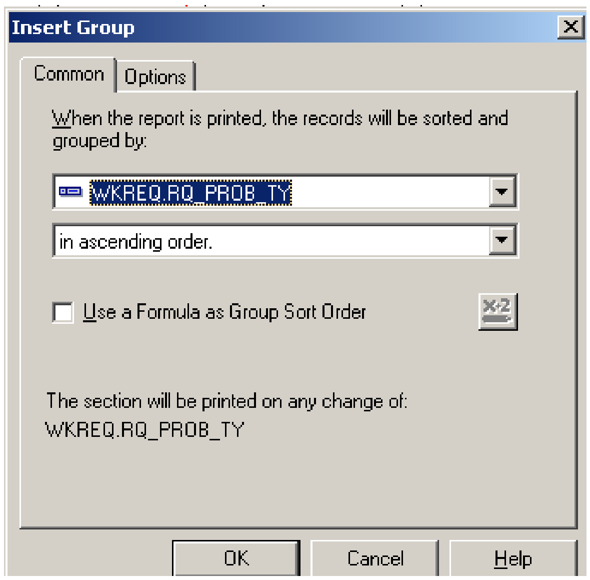
Example 12

Grouping

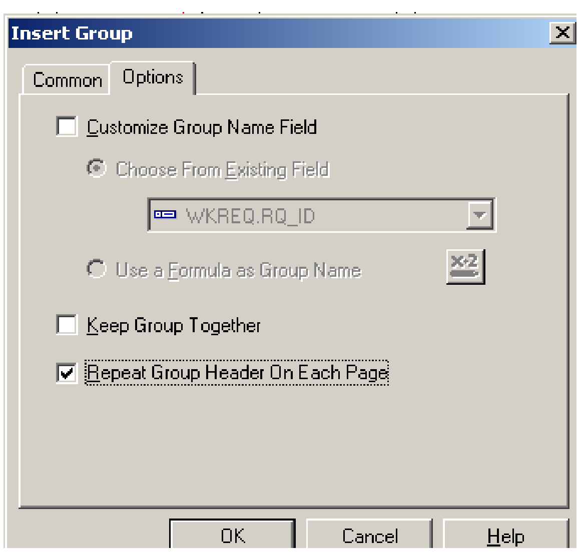
Grouping is a powerful tool and relatively easy to use. It is particularly helpful when creating summaries or counts.

We are going to add a grouping on *Problem* to the **Summary of Requests (ReqSum.rpt)** report.

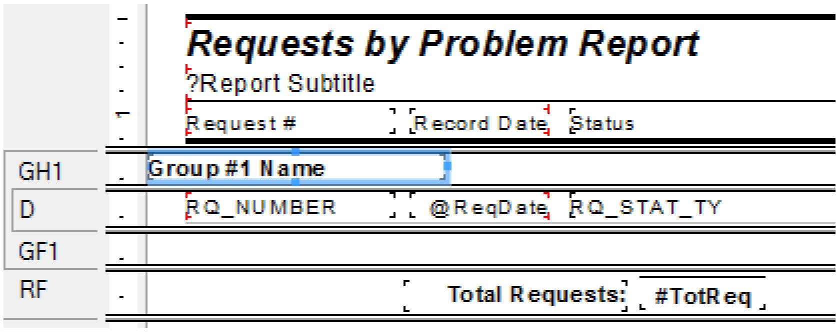
1. From the Work report folder open **LC_ReqSumProbGr.rpt**.
2. Change the Report title. For example, we've titled this report: **Requests By Problem Report**.
3. Select *Insert Group* . If the field you wish to "Group By" is currently in the report, click on it to highlight it and then press the *Insert Group* button. It will automatically group on the field; however, you may also use the drop down box to select the field to group on (**RQ_PROB_TY**).



4. Choose any pertinent options.



- *Group Header (GH1)* and *Footer (GF1)* sections have been added.
- The **Group #1 Name** is the field that this report was grouped by.



Preview

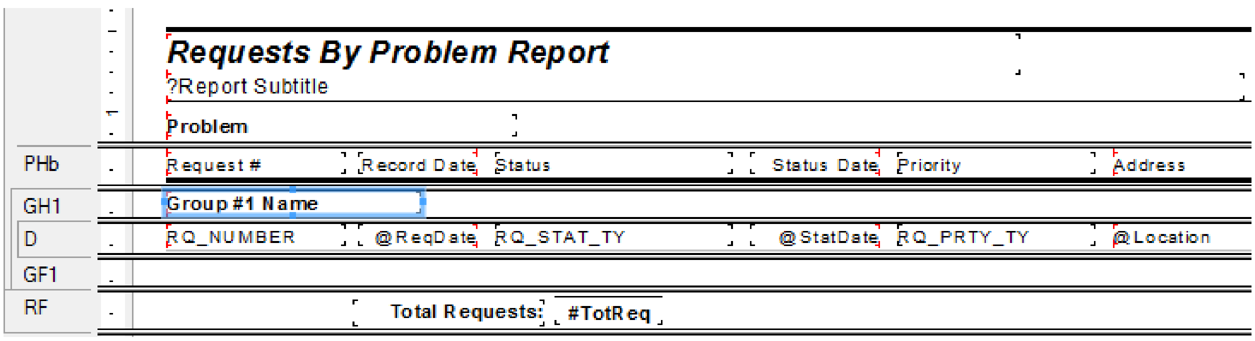
Requests by Problem Report

Request #	Record Date	Status	Status Date	Priority	Problem
2006-09991	12/8/2006	New Request	12/8/2006		
2007-01256	1/8/2007	W O Completed	1/9/2007		
2009-00021	8/7/2009	New Request	8/7/2009		
2012-00001	3/6/2012	New Request	3/6/2012		
2009-00022	8/7/2009	New Request	8/7/2009		
2009-00015	8/7/2009	New Request	8/7/2009		
2009-00027	8/7/2009	New Request	8/7/2009		
Abandoned Waste					
2007-05272	2/6/2007	New Request	2/6/2007		Abandoned Waste
Accident Response					
2006-09695	12/7/2006	Completed	12/21/2006		Accident Response
2007-04571	1/31/2007	New Request	1/31/2007		Accident Response
2006-03598	11/1/2006	Completed	11/2/2006	Immediate Priority	Accident Response
2006-07878	11/28/2006	Completed	11/30/2006		Accident Response
2006-07730	11/27/2006	Completed	11/30/2006		Accident Response
Bees In The Box					
2006-09375	12/5/2006	W O Completed	12/6/2006	Immediate Priority	Bees In The Box
2006-11925	12/22/2006	W O Completed	12/26/2006	Immediate Priority	Bees In The Box
2007-04080	1/29/2007	W O Completed	1/30/2007	Immediate Priority	Bees In The Box
2007-06165	2/12/2007	W O Completed	2/13/2007	Immediate Priority	Bees In The Box

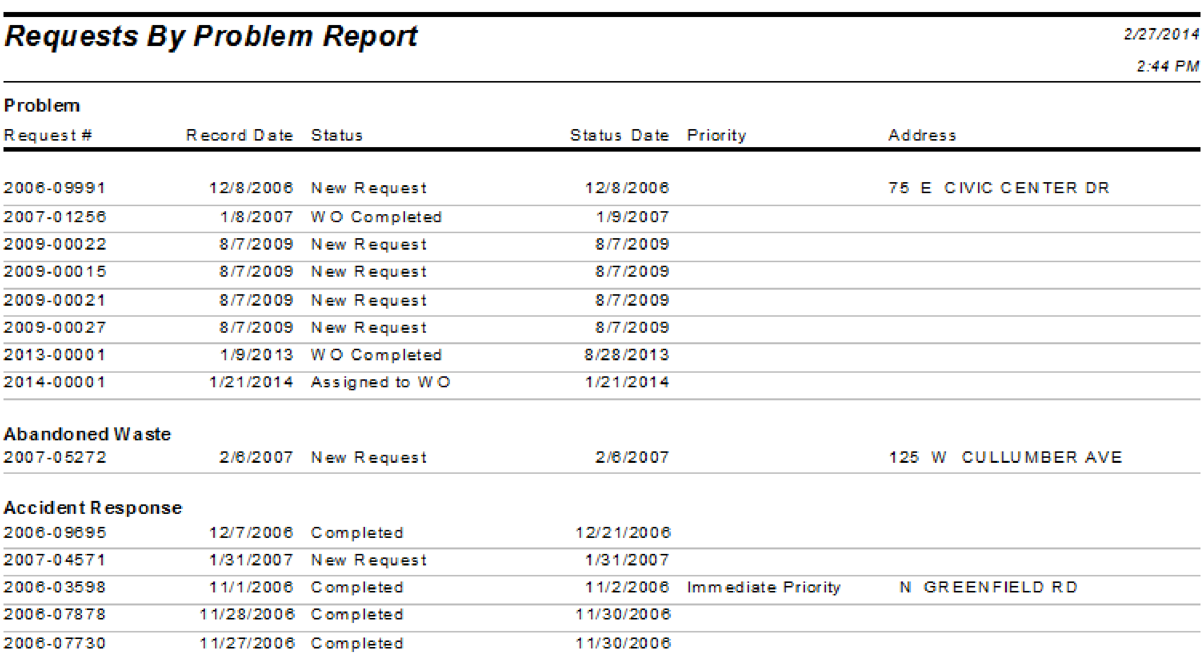
The **Problem** is now being shown twice, once as a Group Header and again as a column, so we will eliminate the **Problem** column.

We will create a separate section with the column headings (***Page Header b***) because there is currently no room to fit **Problem** above **Request #**. (next page)

5. On the left-hand ruler, find the spot where you want the break to occur. It should appear just above the column titles.
    - Click and hold the mouse over that spot and move the cursor slightly, pull to the right and release. A new break line is formed. The section with the column titles is ***Page Header b (PHb)***.
6. Increase the size of ***Page Header a*** by dragging down the bottom line of this section.
7. Drag the **Problem** column title above **Request #** in the ***Page Header a*** section. Format **bold**.
8. Left align the **Group #1 Name** field to the **Problem** text box.
9. Delete the **Problem** field (**RQ_PROB_TY**).
10. The address formula could be moved over (left side at 6").
11. In *File* > *Page Setup…*, change from *Landscape* orientation to *Portrait*.
12. Adjust lines and Page Header fields to fit in the Portrait orientation.



Preview



Requests By Problem Report *2/27/2014* *2:44 PM*

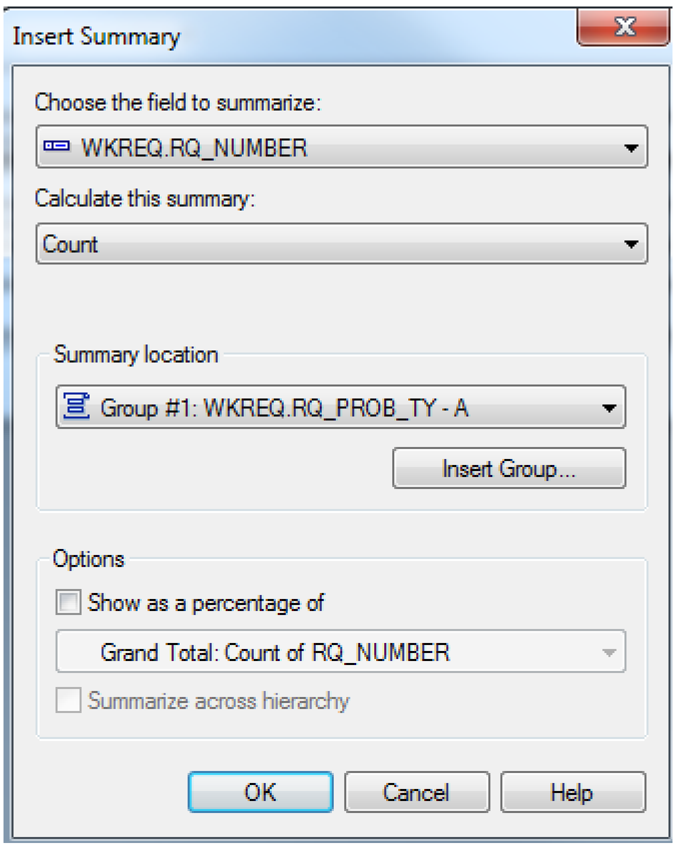
Problem Request #	Record Date	Status	Status Date	Priority	Address
2006-09991	12/8/2006	New Request	12/8/2006		75 E CIVIC CENTER DR
2007-01256	1/8/2007	W O Completed	1/9/2007		
2009-00022	8/7/2009	New Request	8/7/2009		
2009-00015	8/7/2009	New Request	8/7/2009		
2009-00021	8/7/2009	New Request	8/7/2009		
2009-00027	8/7/2009	New Request	8/7/2009		
2013-00001	1/9/2013	W O Completed	8/28/2013		
2014-00001	1/21/2014	Assigned to W O	1/21/2014		
Abandoned Waste					
2007-05272	2/6/2007	New Request	2/6/2007		125 W CULLUMBER AVE
Accident Response					
2006-09695	12/7/2006	Completed	12/21/2006		
2007-04571	1/31/2007	New Request	1/31/2007		
2006-03598	11/1/2006	Completed	11/2/2006	Immediate Priority	N GREENFIELD RD
2006-07878	11/28/2006	Completed	11/30/2006		
2006-07730	11/27/2006	Completed	11/30/2006		

Note: Like when Sorting, Grouping can be nested; a Group within a Group. If multiple groups had been used then they could be switched around by clicking and dragging on the sections.

Summaries

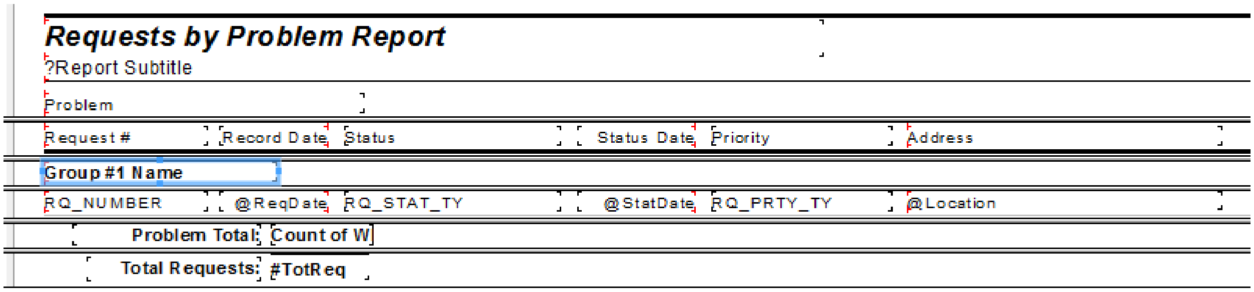
You may want to know the total count of each individual group. The summary option can be used for this purpose. Continue with the **LC_ReqSumProbGr.rpt** report.

1. Click on the field that you wish to count. (**RQ_NUMBER**)
2. Select *Insert Summary* Σ. The *Insert Summary* dialog will appear:
    - The field to summarize (**RQ_NUMBER**) should already be in the field to summarize.
3. Select the type of Summary (**Count**).
4. Choose the summary location (**Group#1**) and click *OK*.



There is now a subtotal for each Problem group.

- You may want to add some lines and make the group subtotal bold for easier reading.



Preview

Problem Request #	Record Date	Status	Status Date	Priority	Address
2006-09991	12/8/2006	New Request	12/8/2006		75 E CIVIC CENTER DR
2007-01256	1/8/2007	W O Completed	1/9/2007		
2009-00021	8/7/2009	New Request	8/7/2009		
2012-00001	3/6/2012	New Request	3/6/2012		
2009-00022	8/7/2009	New Request	8/7/2009		
2009-00015	8/7/2009	New Request	8/7/2009		
2009-00027	8/7/2009	New Request	8/7/2009		
Problem Total: 7					
Abandoned Waste					
2007-05272	2/6/2007	New Request	2/6/2007		125 W CULLUMBER AVE
Problem Total: 1					
Accident Response					
2006-09695	12/7/2006	Completed	12/21/2006		
2007-04571	1/31/2007	New Request	1/31/2007		
2006-03598	11/1/2006	Completed	11/2/2006	Immediate Priority	N GREENFIELD RD
2006-07878	11/28/2006	Completed	11/30/2006		
2006-07730	11/27/2006	Completed	11/30/2006		
Problem Total: 5					

The report already has a Grand Total but if you needed to create one you could repeat the process and choose *Grand Total* (*Report Footer*) in the Summary location box. The summaries will automatically be dropped into the report wherever Crystal seems to think it should go. Click and drag the field and reformat it to fit your needs.

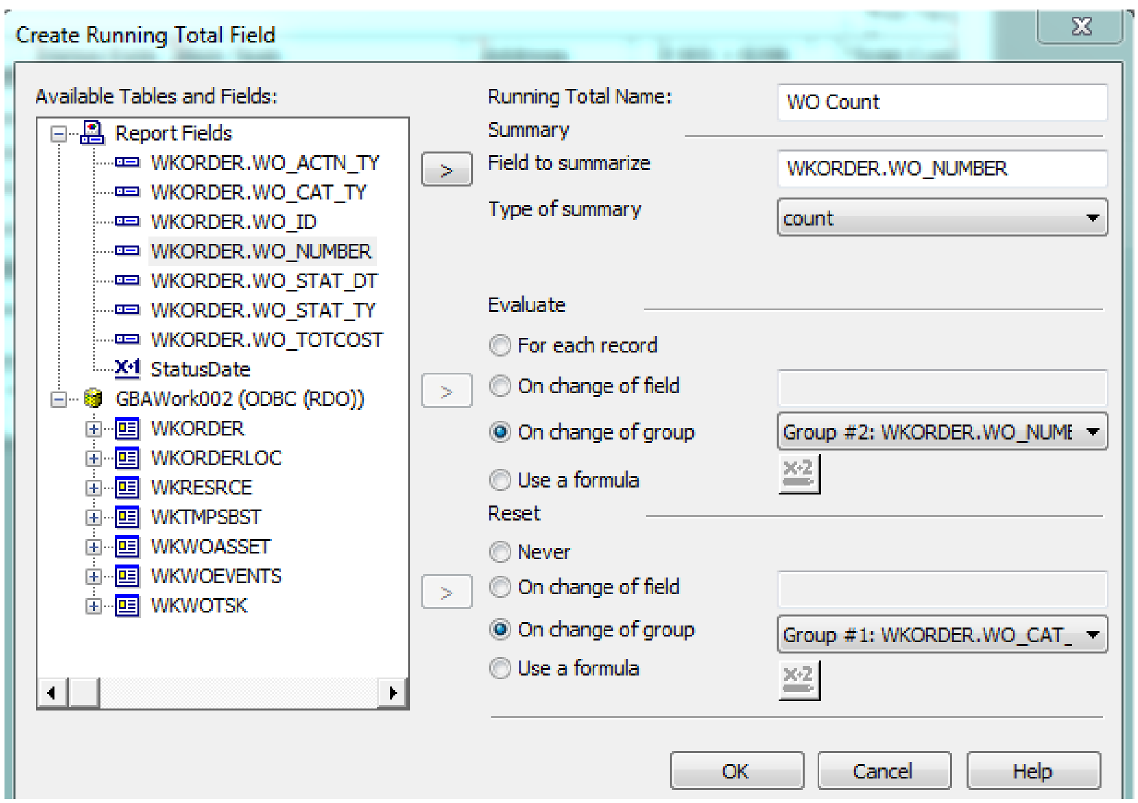
Running Totals

The Running Totals feature is used to add a list of numbers cumulatively. The various options offered within the Running Total dialog have rendered the use of variables (discussed in later documents) obsolete in some cases.

In this example we will create a count on the number of Work Orders per Category.

1. We will modify the **Work Order Summary Report** (**WOSum.rpt**). From the Work report folder open **LC_WOSumRunTot.rpt**.
2. Create a new group on *Category* (**WO_CAT_TY**).
3. Shift the *Category* group to **Group 1** by clicking and dragging it into position.
4. Delete the **Category** Column.
5. Move the **Main Task** and **Address** columns to the left about 1 ½ inches.

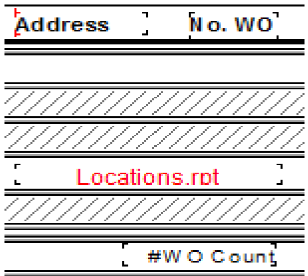
6. Change the Report title to “**Work Orders By Category Report**”.
7. Within *Field Explorer*, right click *Running Total Fields* and select *New*. The *Create Running Total Field* dialog will appear.
8. Type in a name for the *Running Total Name* (i.e. **WO Count**).
9. Choose the *Field to Summarize* (**WO_NUMBER**).
10. Choose the *Type of summary* (**count**).
11. Choose how the report will *Evaluate* the *Work Order Number* field.
    - *On change of group* - **WO_NUMBER**
12. Choose when to *Reset*.
    - *On change of group* - **WO_CAT_TY**
13. Then, click *OK*.



14. Add a text object for a column header (**No. WO**) just to the right of **Address**.

15. Drag the Running Total formula (**WO Count**) under the "**No. WO**" column header into the *Group footer 1 (GF1)* section.

    - The Running Total formula has a pound sign "#" in front to distinguish it as a Running Total type field (**#WOCount**).



We will now add a count of Work Orders greater than $200 per Category. This will use a formula for evaluation.

16. Within *Field Explorer,* right click *Running Total Fields* and select *New*. The *Create Running Total Field* dialog will appear.

17. Type in a name for the *Running Total Name* (**WOCount>200**).

18. Choose the *Field to Summarize* (**WO_NUMBER**).

19. Choose the *Type of summary* (**distinct count**).

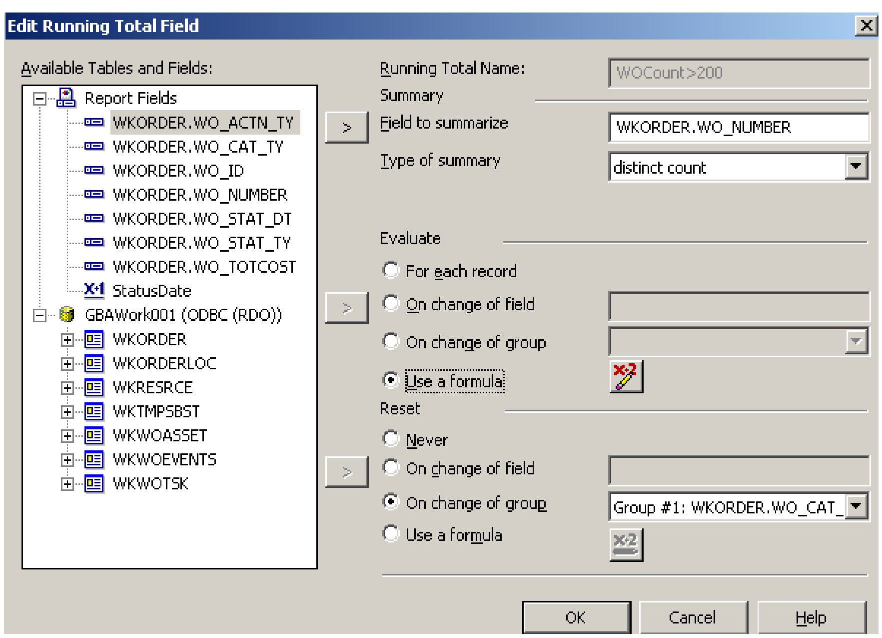
20. Choose how the report will *Evaluate* the WO_NUMBER (**Use a Formula).**

    - Type in the following formula:

      {WKORDER.WO_TOTCOST}>200

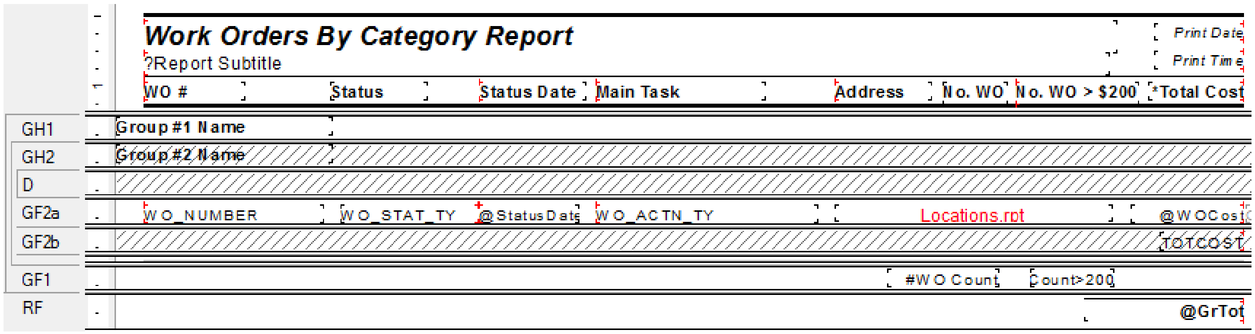
    Choose when to *Reset* (*On Change of Group***- WO_CAT_TY).**

21. Then, click *OK*.

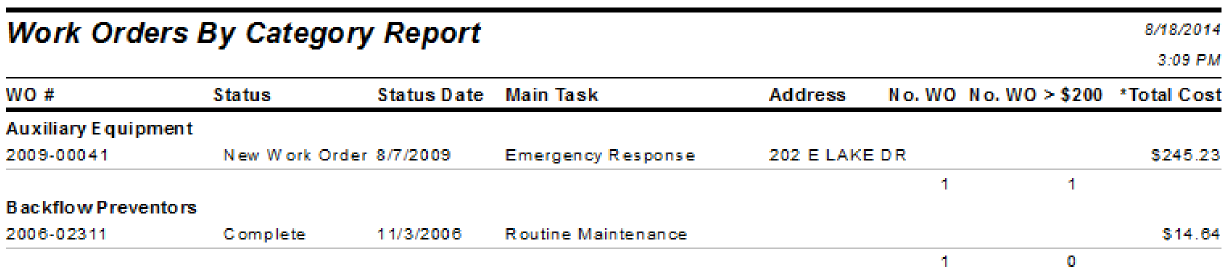


22. Create a new column title (**No. WO > $200**) and place it to the left of **Total Cost**.

23. Drag the **Running Total** formula (**WOCount>200**) into the *Group Footer 1 (GF1)* section under the “**No. WO >$200**” column header.



Preview



Example 13

Work Order Reports

The importance of using Running Totals and Grouping can’t be stressed enough for Work Order reports that have summaries.

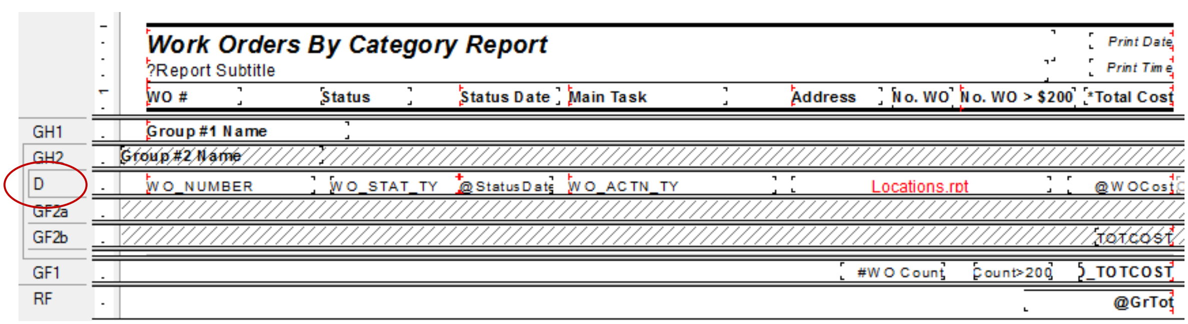
This is only an issue if the report is to be run with a filter on any field that is normally a grid (child) type field such as Location, Task or Resource. Never assume the report will not be used with a filter.

Importance of Grouping

In the previous report the Work Order information was placed in the **Work Order Number** *Group Footer* section.

If the information had been put in the *Detail* section and the report run with a filter on a field that is normaly a grid type field, then the information in the *Detail* section would show up as many times as the filter is true.

An additional Category Cost is added using the Insert Summary tool to help illustrate the point.



The “Distinct Count” for WO>$200 has been changed to “Count” to illustrate the impact of the filter.

In the previous example the WO# 2009-00041 record has the following Resources:

Resources

Group	Type	Resource	Resource Text	UOM	Units	Cost
	Employee	345	OTTO JONES		4.00	125....
	Equipment	PWU0490	PWU0490 CHEVROLET SILVERADO	Hours	4.00	11.18
	Employee	332	WILLIS HENDRIX	Hours	3.00	108....

If a Lucity filter had been created to view records that had Employees as Resources (**WR_RTYP_CD=1**) then the report run in Lucity with this filter would have looked like this:

WO #	Status	Status Date	Main Task	Address	No. WO	No. WO > $200	*Total Cost
Auxiliary Equipment							
2009-00041	New Work Order	8/7/2009	Emergency Response	202 E LAKE DR			$245.23
2009-00041	New Work Order	8/7/2009	Emergency Response	202 E LAKE DR			$245.23
					1	2	**490.46**

The WO# 2009-00041 record shows up twice because there are two Employees in the Resource section.

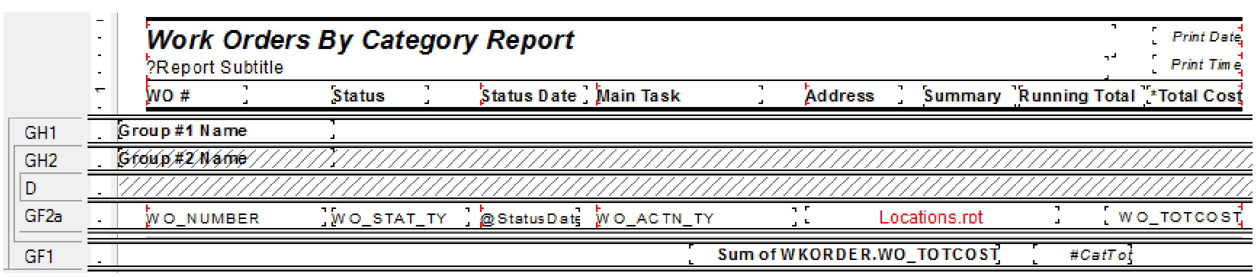
The **Total Cost** and **No. WO >$200** for the Auxiliary Equipment is also double. The **No. WO** value is correct because we said to evaluate *on change of group* (**WO_NUMBER**).

Importance of Running Totals

The way the report is currently set up, the information is placed in the **Work Order Number** *Group Footer* section and the Total Cost Field is in a formula with variables (discussed in later documents). The Cost field could have been brought in simply as a field (**WO_TOTCOST**). Running Totals could have been used to total the cost for both the **Category Group** and the **Report Total**.

The following example shows the importance of the Running Total instead of the Summary when the report is run with a filter of a field from a grid.

The information is placed in the **Work Order Number** *Group Footer* section so it only shows once.



The total cost for the Category is shown with a simple summary in **Bold** and as a Running Total formula in *Italic*.

WO #	Status	Status Date	Main Task	Address	Summary	Running Total	*Total Cost
Auxiliary Equipment							
2009-00041	New Work Order	8/7/2009	Emergency Response	202 E LAKE DR			245.23
					490.46	*245.23*	

Concatenate Fields

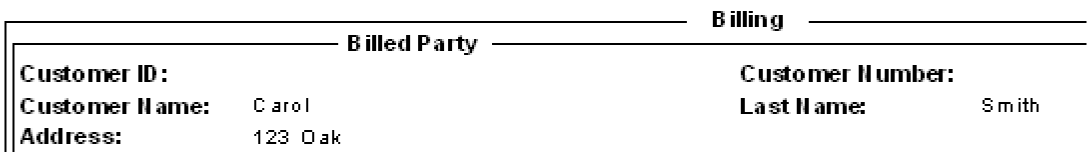
Multiple fields can be joined together in a single formula as opposed to bringing all of the fields in separately.

This might be useful for names or address. The concept is simple; however, if any of the fields in a simple “+” type formula are empty, the formula would show up as blank.

The null fields need to be addressed as follows:

In the current **Work Order Detail Report** (**WODetail.rpt)** the Billing information looks like this:

Preview



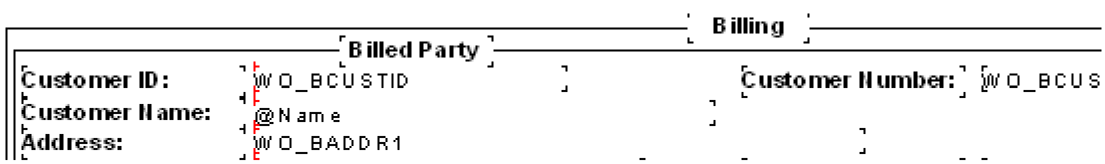
We can create a formula to join the First and Last Names. In the example we will create a formula called **Name**:

In the **Formula Workshop** the formula can be typed in manually or parts can be brought in from the various workshop sections (Field, Function or Operator). “If Then Else” can be brought from *Operators* > *Control Structure*. “Is Null” can be brought in from *Functions* > *Print State*.

(If IsNull({WKORDER.WO_BFIRST}) Then " " Else {WKORDER.WO_BFIRST})&" "&

(If IsNull({WKORDER.WO_BLAST}) Then " " Else {WKORDER.WO_BLAST})

This would change the format to:



Preview

> *Note: The ampersand (&) operator may be used instead of the plus sign for string concatenation. This will perform an implicit conversion when the formula uses mixed data types.*

"Total $" & {WKORDER.WO_TOTCOST} instead of **"Total $"+ cstr({WKORDER.WO_TOTCOST})**

Address Formula

Another common usage of concatenated fields is the Address field. Any time a record shows the address as multiple parts ADR_BDG and ADR_DIR then this is a field that uses the address set up in the General section of Lucity. It should be brought into a report as a concatenated formula.

The **Work Order Location Address** is as follows:

```
(If isNull({WKORDERLOC.WL_ADR_BDG})then "" else Trim(ToText({WKORDERLOC.WL_ADR_BDG},0,"",""))+" ")+
   (If isNull({WKORDERLOC.WL_ADR_B2})then "" else Trim({WKORDERLOC.WL_ADR_B2})+" ")+
   (If isNull({WKORDERLOC.WL_ADR_DIR})then "" else Trim({WKORDERLOC.WL_ADR_DIR})+" ")+
   (If isNull({WKORDERLOC.WL_ADR_PT})then "" else Trim({WKORDERLOC.WL_ADR_PT})+" ")+
    Trim({WKORDERLOC.WL_ADR_STR})+" "+
   (If isNull({WKORDERLOC.WL_ADR_TY}) then "" else Trim({WKORDERLOC.WL_ADR_TY})+" ")+
   (If isNull({WKORDERLOC.WL_ADR_SFX}) then "" else Trim({WKORDERLOC.WL_ADR_SFX})+" ")+
   (If isNull({WKORDERLOC.WL_ADR_APT}) then "" else Trim({WKORDERLOC.WL_ADR_APT}))
```

A null Street Name is not addressed because we do not want to see the formula if there is no Street Name.

Example 14

I. Example 1

Export the **Sewer Pipe Summary Report** (**PipeSum.rpt**) found in Sewer Pipe Inventory.

Save in the Sewer folder as **CT_PipeSum.rpt**.

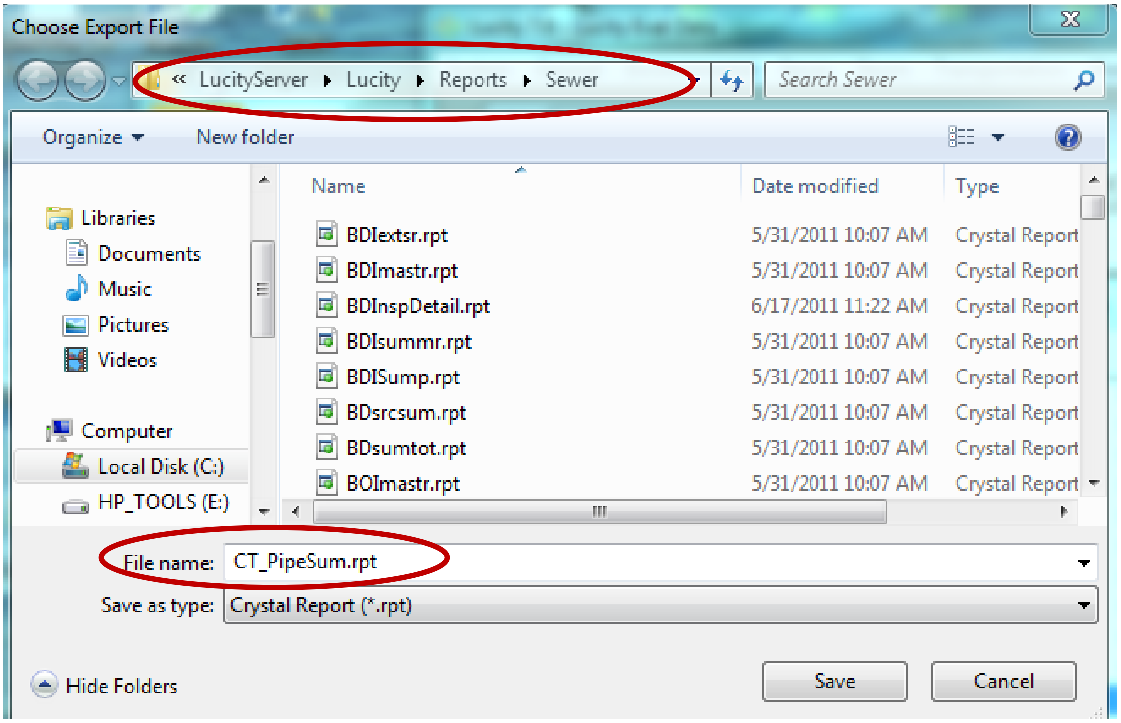
Open the report and remove the *Save Data with Report* option.

Save.

<u>Solution</u>

1. Open **Sewer** > **Inventory** > **Pipes**
2. Open Reports 
3. Click *All Records*
4. Click and highlight **Sewer Pipe Summary Report** (note where the Sewer reports are located)
5. Click *Export Report*
6. Select “Crystal Reports” from the *Format:* dropdown. Click *OK*
7. Choose the correct location for the Sewer Reports.
8. In the “File name:” type in the report name **CT_PipeSum.rpt** then click *Save.*

   (next page)



9. Go to the Sewer reports folder and open **CT_PipeSum.rpt** by double clicking.

10. In the Menu Bar click **File >>Save Data with Report**. This will uncheck the option.

11. Save

II. Example 2

Export the **Work Request/Work Order Review** (**ReqsWORev.rpt**) report found in Work Requests.

Save in the Work folder as **CT_ReqsWORev.rpt**. With initial *Save*, click *Cancel*. Export again, using *This Record Only*.

Open the report and remove the *Save Data with Report* option.

Remove the ID formula in the *Select Expert*.

Save.

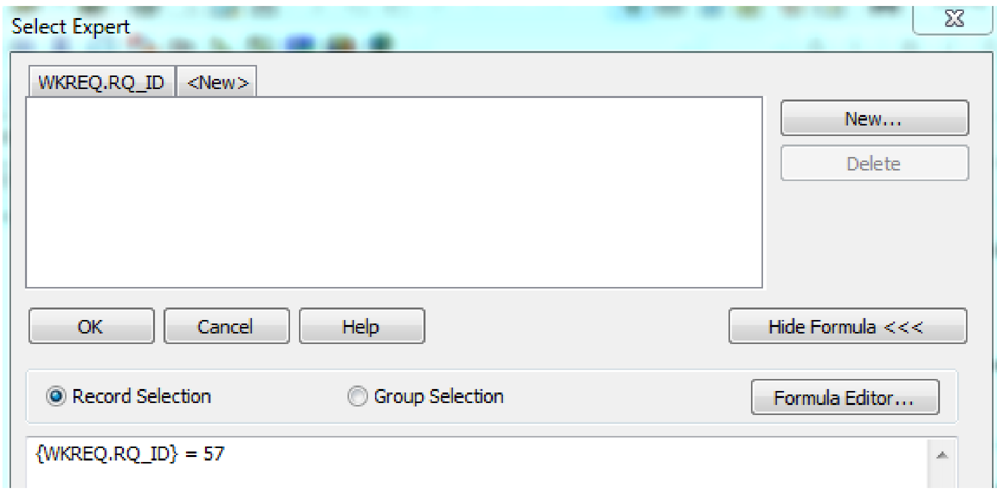
Solution

1. Open **Work > Requests**
2. Open Reports .
3. Click *All Records.*
4. Click and highlight **Work Request/Work Order Review** (note where the Request reports are located).
5. Click *Export Report.*
6. Select "Crystal Reports" from the *Format:* dropdown.
7. Click *OK*
8. Choose the correct location for the Request Reports.
9. In the "File name:" type in the report name **CT_ReqsWORev.rpt** then click *Save.*
10. You can either wait (it will eventually export) or Click *Cancel*.
11. If you selected cancel then select *This Record Only* and run the Export again from step 4.
12. Go to the Work reports folder and open **CT_ReqsWORev.rpt** by double clicking.
13. In the Menu Bar click **File > Save Data with Report**. This will uncheck the option.
14. Save

15. If The Export was done with *This Record Only* then in the Preview tab you will see one line of data. Open the Select Expert  in the Expert Tools Toolbar.

16. Click *Show Formula>>>*

17. Click and drag over the ID formula to highlight it and press the Delete Key.



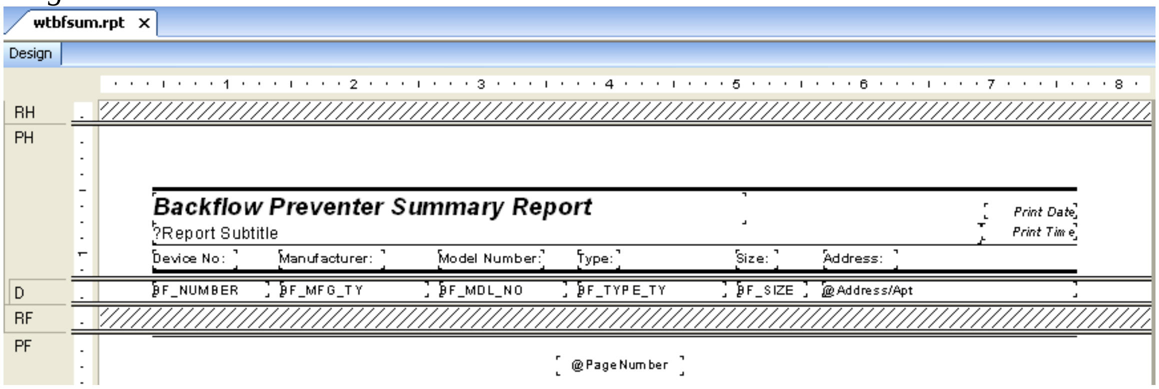
18. Click OK

19. Refresh Data. (If you get the ODBC dialog then enter the Password and *Finish*) You should now see a number of lines of data.

20. Save

III. Example 3

Original



Report title will be changed, the Address column removed and the Type field widened.

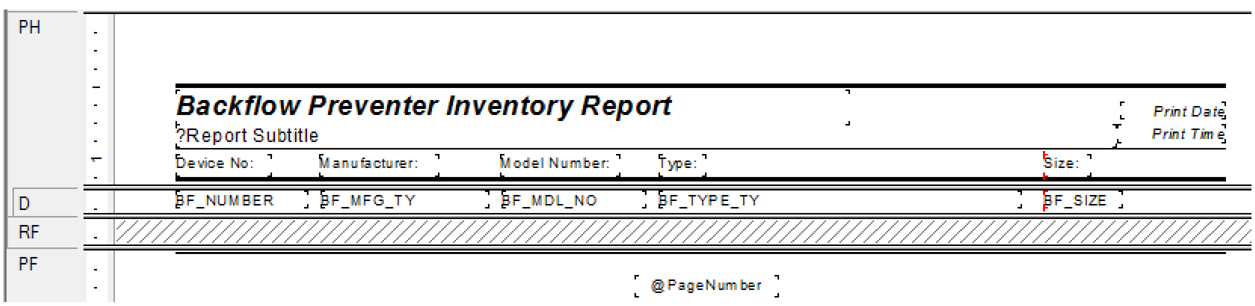
1. In the **Water** Report folder, open **CT_wtbfsum.rpt.** (Double click to open or Right click *Open*.) This is a copy of the Backflow Preventer Summary Report (**wtbfsum.rpt**).

2. Change the title to: **Backflow Preventer Inventory Report.**

3. Remove the **Address** column.

4. Increase the width of the "**Type**" data field (**BF_TYPE_TY**).

5. Save



Backflow Preventer Inventory Report

3/4/2014
2:30 PM

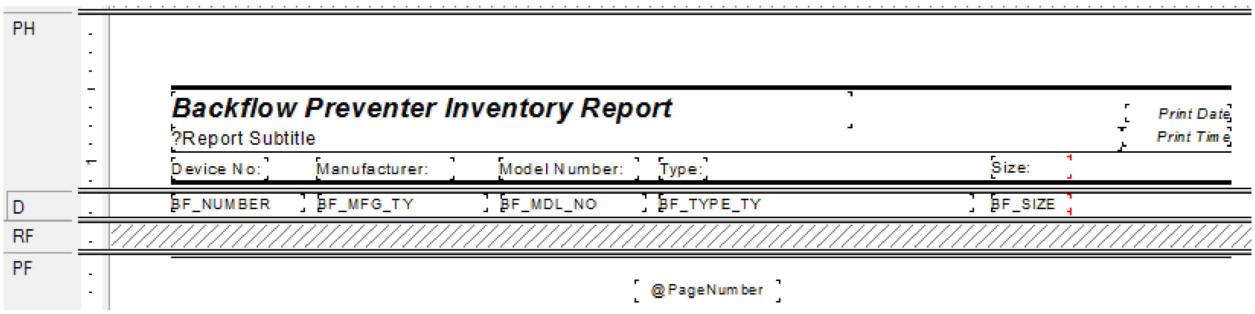
Device No:	Manufacturer:	Model Number:	Type:	Size:
1277	CONBRACO	40-505-02	Pressure Vacuum Breaker	1.00
147	WATTS	288A-M3	Atmospheric Vacuum Breake	2.00
214	FEBCO	870V	Double Check	2.00
2254	AMES	3000	Double Check Detector	10.00
32	RAIN BIRD	RP-QT-100	Reduced Pressure Zone	2.00

Solution

1. To change the title:
    a. Double click the Title text object box.
    b. Click and drag over “Summary” and change to “Inventory”.
2. To remove the Address column header and field:
    a. Click on the column header text object, **Address,** press the Delete key.
    b. Repeat for the **@Address/Apt** field.
3. To increase the Type field:
    a. First the **Size** column needs to be moved to the right to make room for the increase in **Type** field.
        i. Click in the top ruler section near the 5 1/2” mark to set a guideline on the right side of the **BF_SIZE** field**.**
        ii. Drag the **Size** column header to the right to attach to the marker.
        iii. Click and drag the Size marker to about 7”.
    b. Click on the **BF_TYPE_TY** field to highlight it.
    c. Place the cursor over the right side of the box and click on the sizing handle, drag to the right (5 7/8”).
4. Save

IV. Example 4

Original

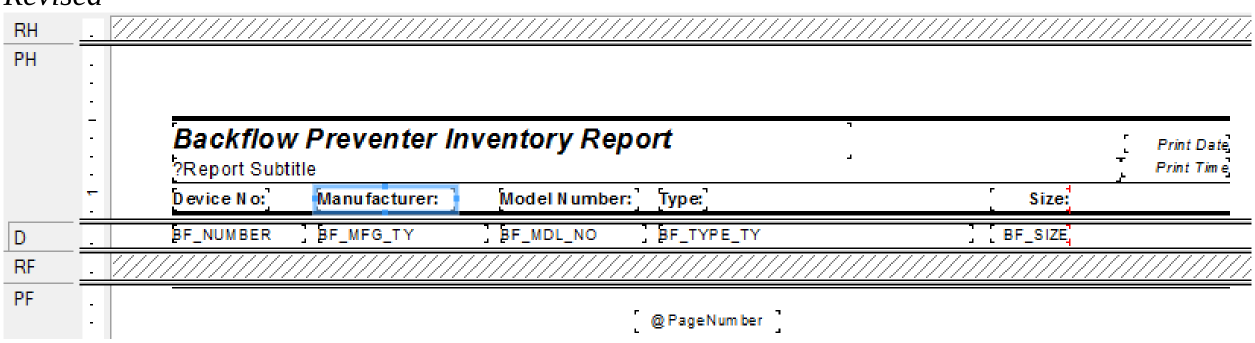


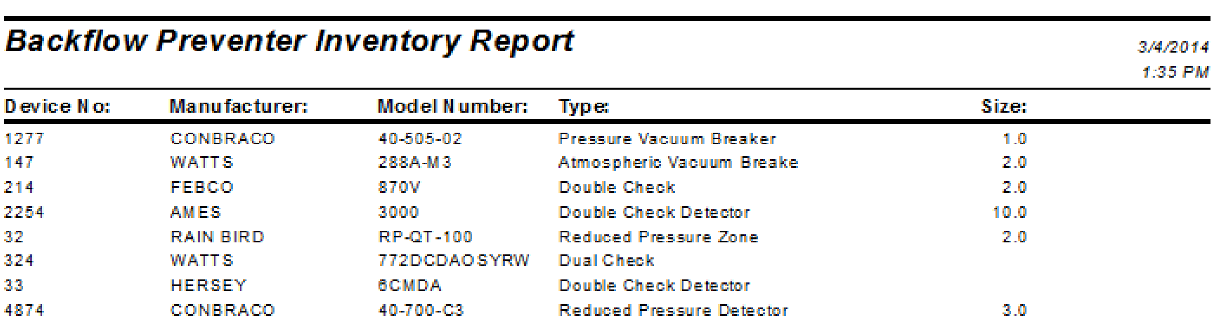
Formatting will be applied to the **Size** number field as well as the Column Header text objects.

Continue revising **CT_wtbfsum**.rpt.

1. Decrease the **Size** numeric field to one decimal place and right align column header and field.
2. Format all Column headings to font size 9 and Bold.
3. Check to see if the Column headings fit in the given box, otherwise resize.
4. Save the report.

Revised





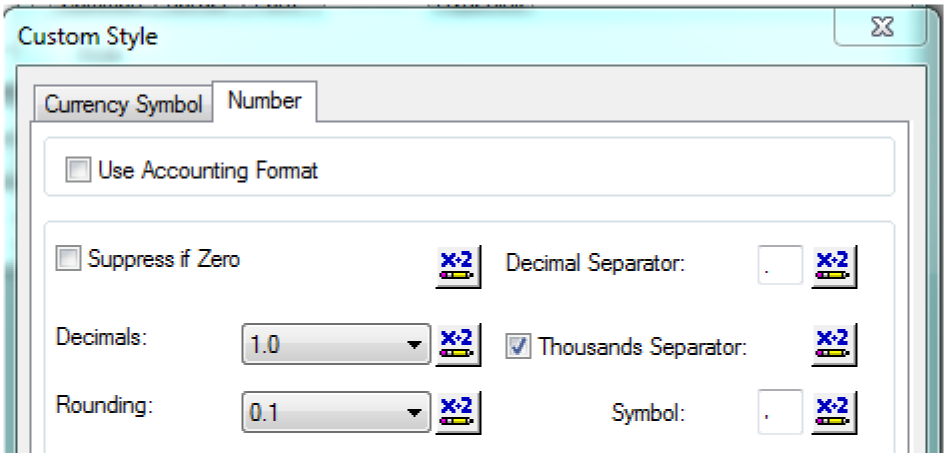
Backflow Preventer Inventory Report

3/4/2014
1:35 PM

Device No:	Manufacturer:	Model Number:	Type:	Size:
1277	CONBRACO	40-505-02	Pressure Vacuum Breaker	1.0
147	WATTS	288A-M3	Atmospheric Vacuum Breake	2.0
214	FEBCO	870V	Double Check	2.0
2254	AMES	3000	Double Check Detector	10.0
32	RAIN BIRD	RP-QT-100	Reduced Pressure Zone	2.0
324	WATTS	772DCDAOSYRW	Dual Check	
33	HERSEY	6CMDA	Double Check Detector	
4874	CONBRACO	40-700-C3	Reduced Pressure Detector	3.0

Solution

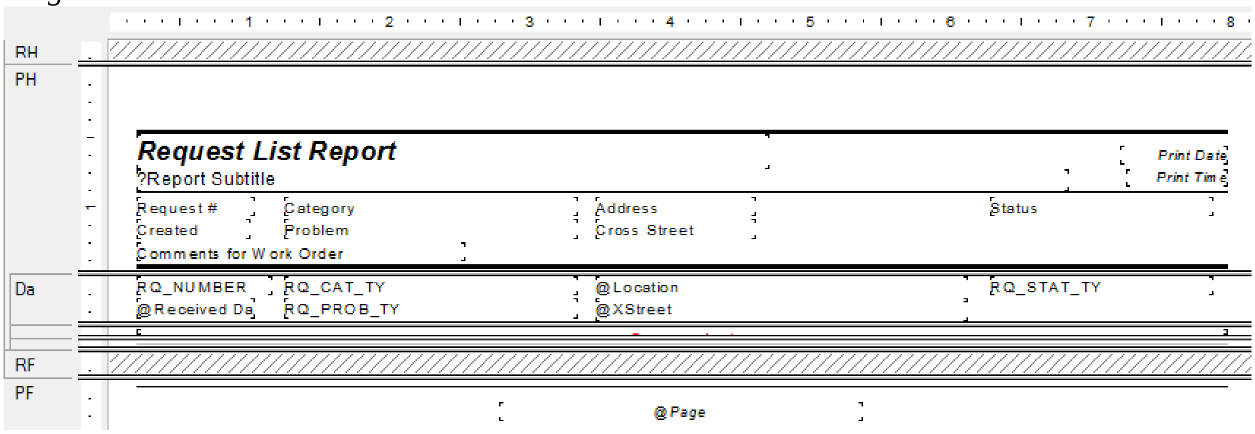
1. To change the **Size** number formatting:
   a. Right Click on the **BF_SIZE** field to highlight and open the options. Select *Format Field….*
   b. Click *Customize…*
   c. Use the drop down boxes to choose the Decimals and Rounding options.



   d. Click *OK*
   e. Click *OK*
2. To right align the column header and field:
   a. Click on the **Size** column header then push shift and click on the **BF_SIZE** field.
   b. In the Formatting Toolbar click *Align Right*.
3. To change the Column Headers:
   a. Click **Device No** then hold the shift key down clicking on each of the column headers.
   b. In the Formatting Toolbar click the **B** and use the drop down arrow to pick the font size of 9.
4. Save

V. Example 5

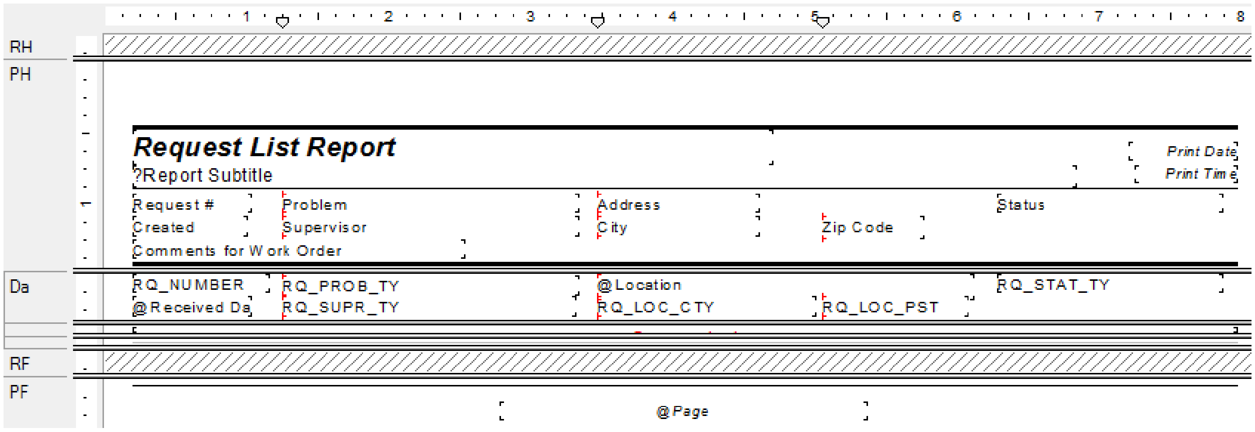
Original

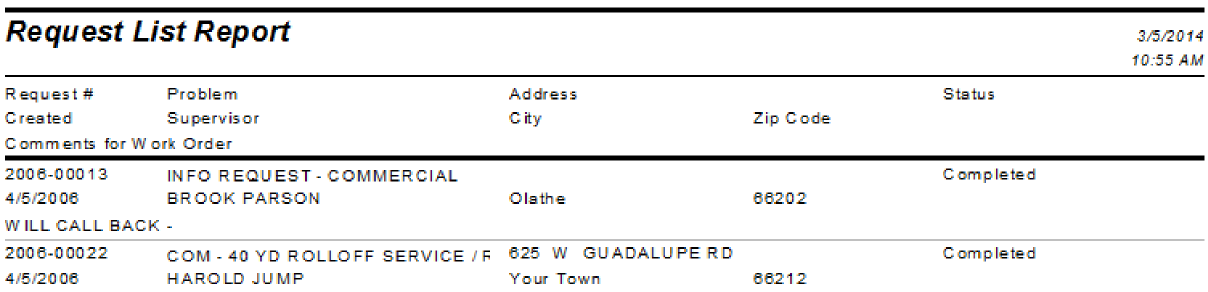


Report fields will be moved, removed and added. Text objects will be added and revised. Align fields. See the Revised screen shot for field placement.

1. In the **Work** Report folder, open **CT_ReqList.rpt.** (Double click to open or Right click *Open*.) This is a copy of the Request List Report (**ReqList.rpt**).
2. Add vertical guidelines to the left edges of the **Category/Problem** fields and the **Address/Cross Street** fields.
3. Remove the Cross Street field (**@XStreet**).
4. Add Column Headers for **City** and **Zip Code**.
5. Bring into the *Detail a* section the **Loc City** and **Loc Zip Code** fields (second tab in Request).
6. Remove the **Category** field (**RQ_CAT_TY**).
7. Move the **Problem** field (**RQ_PROB_TY**) into the space where the Category field had been.
8. Bring in the **Supervisor** text field (second tab in Request) and place under the **Problem** field. Size to match the Problem field.
9. Change the column headers to reflect the field changes.
10. Align fields and Save.

Revised





<u>Solution</u>

1. In the Work Report folder, open **CT_ReqList.rpt**. (Double click to open or Right click Open.)

2. Add vertical guidelines for the left edges of the **Problem/Category** fields and **Address/Cross Street** fields:
    - Click in the top ruler bar close to where the guideline markers should be placed. (If the ruler is not there, then go into *File* > *Options*… > *Layout* and make sure *Rulers* is checked for the Design View.) The Category/Problem marker should be about 1 ¼" and the Address/Cross Street about 3 ½".

3. Remove the **@XStreet** field:
    - Click on **@XStreet** and press the *Delete* key.

4. Modify Column Header:
    a. Double click the **Cross Street** text object.
    b. Click and drag over **Cross Street**, type **City**.
    c. Click out of the box.

5. Add Column Header:
    a. Click on *Insert Text Object* in the Insert Tools Toolbar.
    b. Place (click) the plus sign indicator to the right of **City**.
    c. Type **Zip Code**.
    d. Click out of the box. (If bold, depending on your Options set up, make unbold by clicking the **B** in the Formatting Toolbar.)

6. Add **City** and **Zip Code** fields:
    a. In the Request module, *Request* tab.
    b. Ctrl right click in the **Loc City** box.
    c. Click *Field Definition*.
    d. Note *Field Name* – **RQ_LOC_CTY**.
    e. Repeat for **Loc Zip Code**. **RQ_LOC_PST**
    f. In Field Explorer, open *Database Fields* > ***WKREQ***.
    g. Click and drag the **RQ_LOC_CTY** field into the *Detail a* section under **@Location**.
    h. Click and drag the **RQ_LOC_PST** field into the *Detail a* section to the right of the City field.

7. Remove the **Category** field:
    - Click on the **RQ_CAT_TY** field and press the *Delete* key.

8. Move the **Problem** field:
    - Click and Drag the **RQ_PROB_TY** field up to where **RQ_CAT_TY** field had been. The marker helps keep the column alignment.

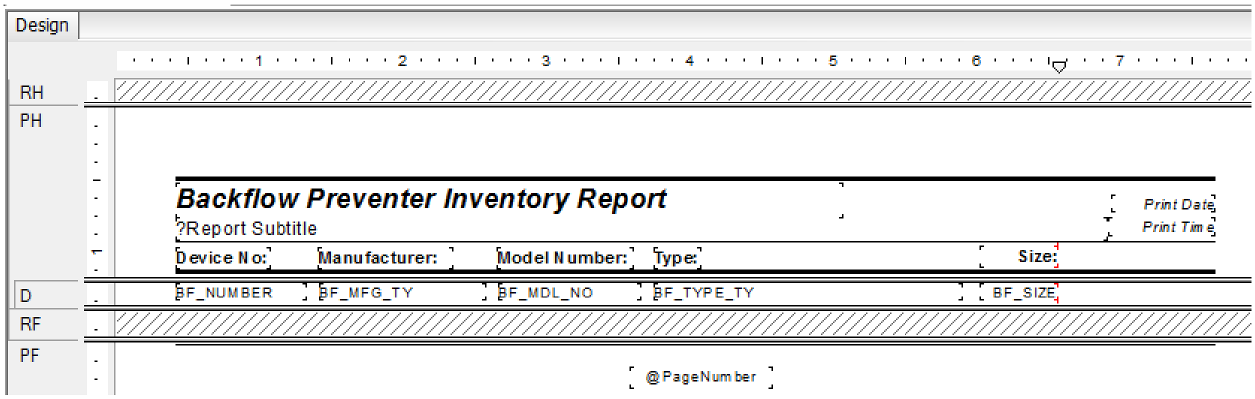
9. Bring in the **Supervisor** field.
    a. In the Request module, *Request* tab.
    b. Ctrl right click in the **Supervisor** text box.
    c. Click *Field Definition*.
    d. Note *Field Name* – **RQ_SUPR_TY**.
    e. In Field Explorer, open *Database Fields* > ***WKREQ***.
    f. Click and drag the **RQ_SUPR_TY** field into the *Detail a* section under **RQ_PROB_TY**.
    g. Click and drag the right sizing handle so the right edge matches the **Problem** field edge.

10. Change the Column Headers.
    a. Double click the **Problem** text object.
    b. Click and drag over **Problem**, type **Supervisor**.
    c. Double click the **Category** text object.
    d. Click and drag over **Category**, type **Problem.**

11. Align Fields:
    a. For the Column Headers, shift and click on **Zip Code** and **City**.
    b. Right click in **City**.
    c. Align > Tops
    d. Repeat the steps for **RQ_PROB_TY** aligned to **RQ_NUMBER.**
    e. Repeat the steps for all of the fields in the bottom row, align to the **@Received Date** field.

12. Save

VI. Example 6



A Date field and line will be added.

1. From the **Water** Report folder, open **CT_wtbfsum.rpt.**

2. Add an **Installation Date** Column heading to the right of Size.

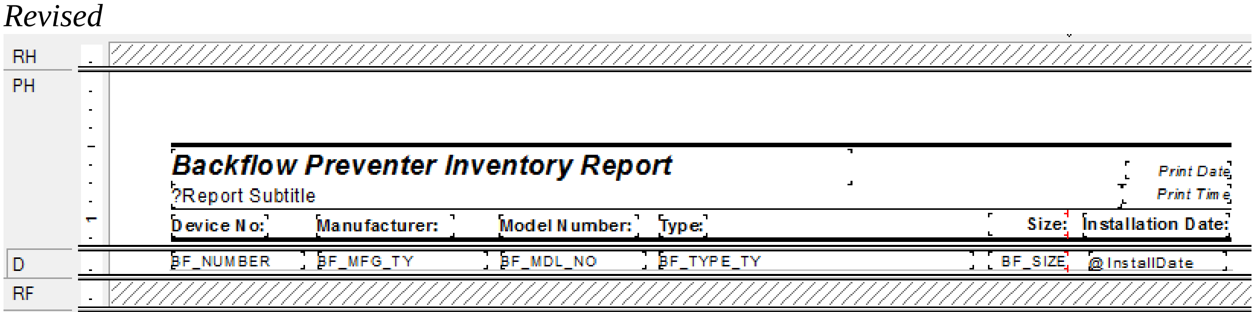
3. Create a formula for the Installation Date and place it beneath the new Column heading.

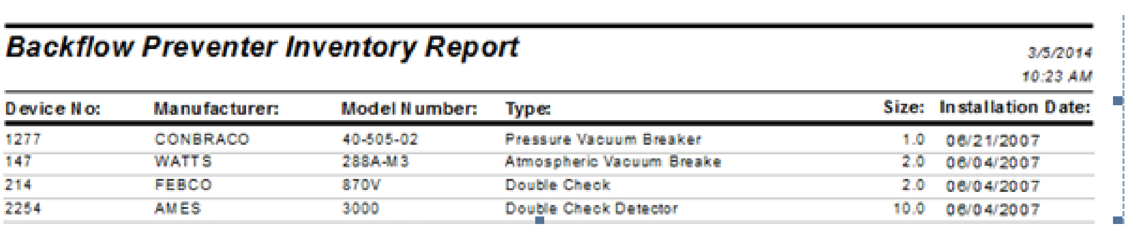
4. Format the date field like this: 

5. Add a line beneath the data in the Detail section and select the "Move to Bottom of Section when Printing" option.

6. Save

Revised





Backflow Preventer Inventory Report 3/5/2014 10:23 AM

Device No:	Manufacturer:	Model Number:	Type:	Size:	Installation Date:
1277	CONBRACO	40-505-02	Pressure Vacuum Breaker	1.0	06/21/2007
147	WATTS	288A-M3	Atmospheric Vacuum Breake	2.0	06/04/2007
214	FEBCO	870V	Double Check	2.0	06/04/2007
2254	AMES	3000	Double Check Detector	10.0	06/04/2007

Solution

1. Add Column header for **Installation Date**:
    a. Add a text object to the right of **Size**.
    b. Type in **Installation Date:**
2. Find the field definition of the **Installation Date**.
    - In the **Backflow Inventory** module > Attributes (first) tab, Ctrl right click the **Installation Date** field. Select *Field Definition*. Note: Field Name- **BF_INST_DT**
3. Create a *Date* formula
    a. In *Field Explorer* right click on *Formula Fields* and select *New…*
    b. Give the formula a name (**InstallDate**).
    c. Open *Functions* in the Functions Tree box.
    d. Open *Date and Time.*
    e. Open *Date.*
    f. Double click *Date (dateTime).*
    g. In the Field Tree box open GBAWater001
    h. Open **WTBKFLOW**
    i. Double click the **BF_INST_DT** field (This will drop the date field within the parenthesis)
    j. Save and close
4. Drag the **InstallDate** formula field into the *Detail* section under the appropriate Column header.

5. Format the Date formula field.

    a. Right click on **@InstallDate** , select *Format Field…*

    b. Click on the *Date* tab and select **03/01/1999.**

    c. *OK*

6. Add a line

    a. In the Insert Tool Toolbar click and release on *Insert Line*.

    b. Click just below the **BF_NUMBER** field on the left edge of the field then drag across to the right side of the row and release.

    c. Right click on the line and select *Format Line…*

    d. Change *Color* to **Silver.**

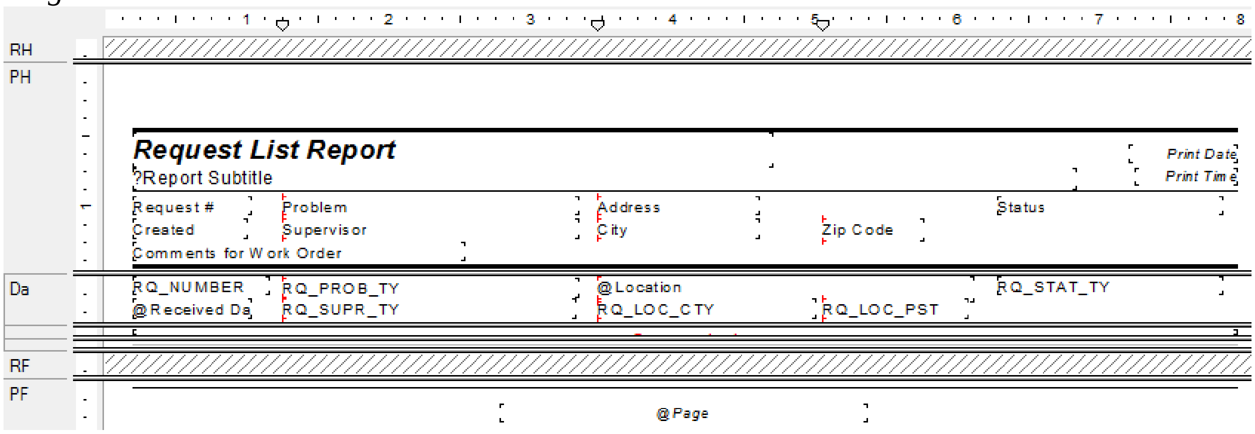
    e. Click to check the box next to *Move to Bottom of Section when Printing*. (This will allow for growing fields).

    f. *OK*

7. Save

VII. Example 7

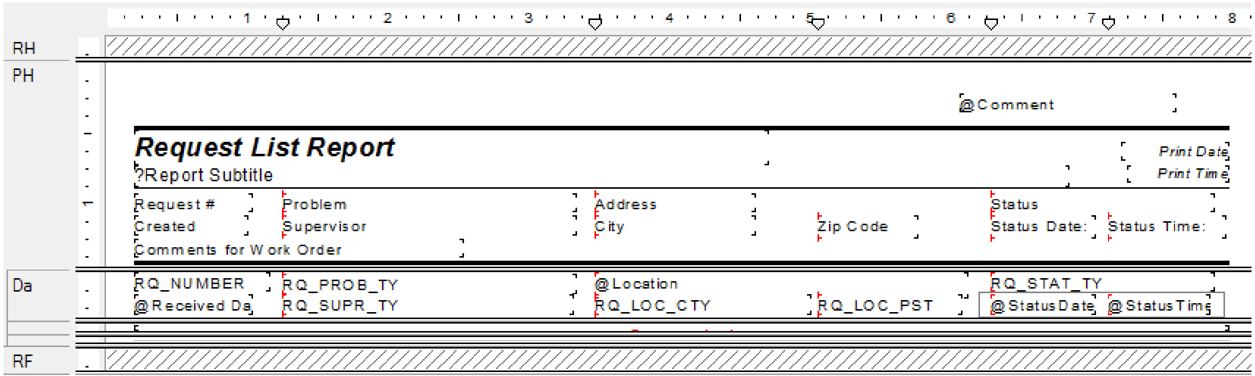
Original

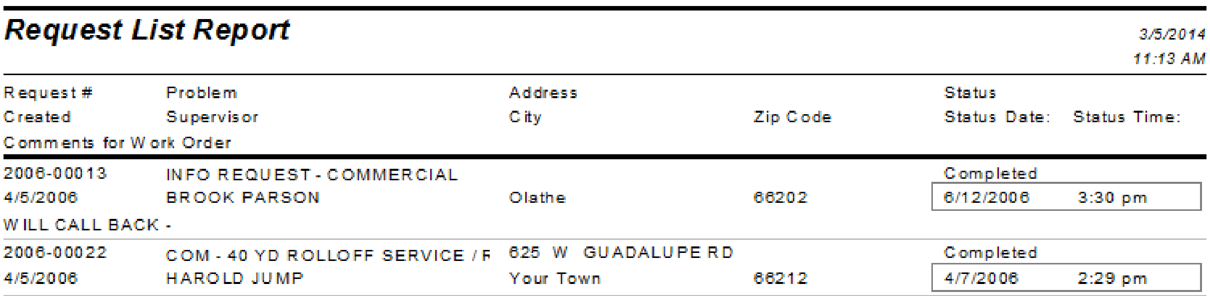


We will add a date field, time field, a box and use the formatting for comments. (See next page for placement of fields.)

1. In the **Work** Report folder, open **CT_ReqList.rpt**.
2. Add new Column Headers under **Status** for **Status Date** and **Status Time**. Add guidelines and align.
3. Create a Date formula for Status Date. (**Status Date**)
4. Create a Time formula for Status Time. (**Status Time**)
5. Bring the new formula fields into the *Detail a* section to line up with the appropriate Column Headers. Align.
6. Place a box around the Status Date and Time fields.
7. Format the box border to *Gray*.
8. Create a formula that is strictly a comment describing the changes in the report. (ie. Added Supervisor, City, Zip, Status Date and Time.) Bring into the *Page Header* section.
9. Save

Revised





Request List Report

3/5/2014
11:13 AM

Request # / Created	Problem / Supervisor	Address / City	Zip Code	Status / Status Date:	Status Time:
Comments for Work Order					
2006-00013	INFO REQUEST - COMMERCIAL			Completed	
4/5/2006	BROOK PARSON	Olathe	66202	6/12/2006	3:30 pm
WILL CALL BACK -					
2006-00022	COM - 40 YD ROLLOFF SERVICE / F	625 W GUADALUPE RD		Completed	
4/5/2006	HAROLD JUMP	Your Town	66212	4/7/2006	2:29 pm

Help with new items…

1. To create a Time formula:
    a. In Field Explorer, right click on *Formula Fields*.
    b. Select *New* and give it a name (**Status Time**)
    c. *OK*
    d. Open the Function Tree.
    e. Open *Date and Time*.
    f. Open *Time*.
    g. Double click *Time(dateTime).*
    h. In the Field Tree open **GBAWork001**.
    i. Open **WKREQ**.
    j. Double click **RQ_STAT_TM**.
    k. *Save and close*
    l. Drag the field under the **Status Time** column header.

2. To create a box:
    a. Click and release on *Insert Box* in the Insert Tools Toolbar.
    b. Click (and hold) where the top left corner of the box is to be placed – just above and to the left of **@StatusDate**. Drag diagonally to the bottom right corner to form a box.
    c. Right click on the box outline and select *Format Box…*
    d. From *Border Color* select **Gray**.
    e. *OK*

3. A comment formula is created within the formula workshop by using double forward slash // before each line.

VIII. Example 8

A Detail report will be revised by removing sections and moving fields.

1. From the **Work** reports folder, open **CT_ReqWOComment**.

2. Add a section below *Detail a* and then switch places so the *Detail a* section is blank.

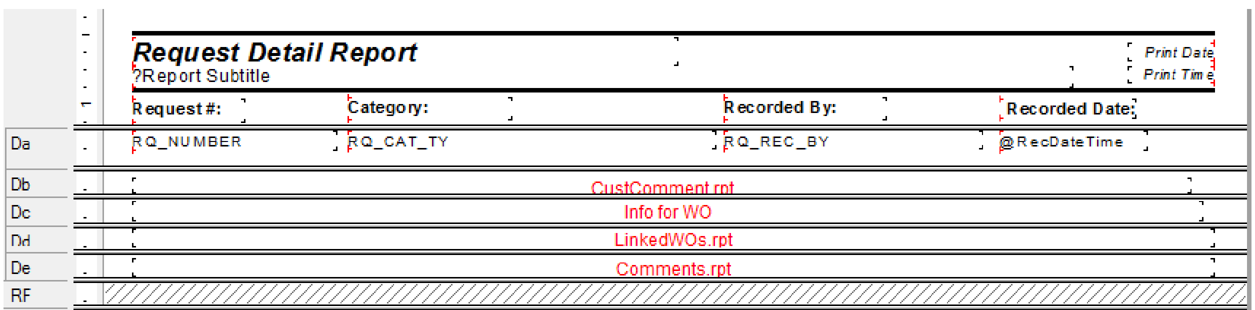
3. Increase the *Page Header* section to add column headers.

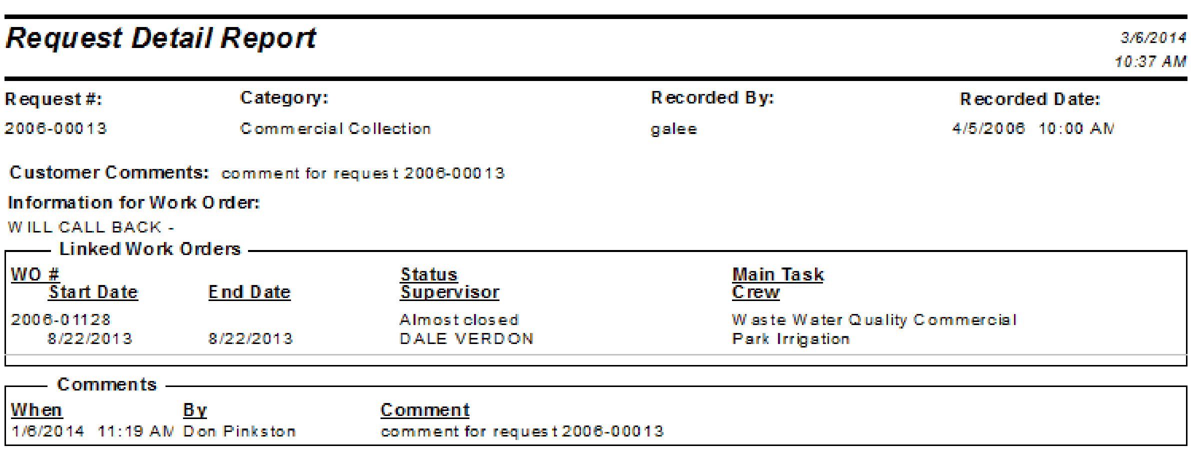
4. Drag in the text objects to the *Page Header* and the fields to the *Detail a* section.

    - Request # (change Font and Boldness to match other fields.)
    - Category
    - Recorded By
    - Recorded Date

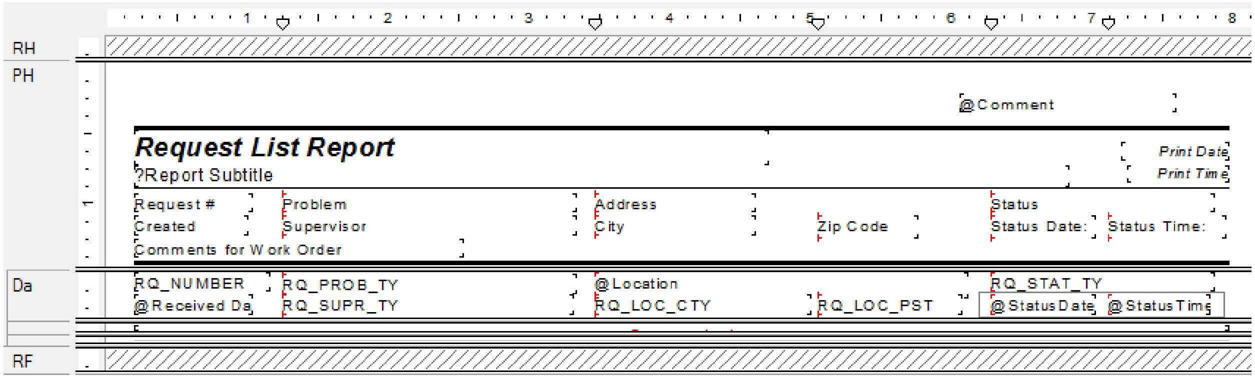
5. Remove all sections except the ones containing **CustComment.rpt** (in red), **Info for WO** (in red), **LinkedWOs.rpt** (in red) and **Comments.rpt** (in red).

6. Save





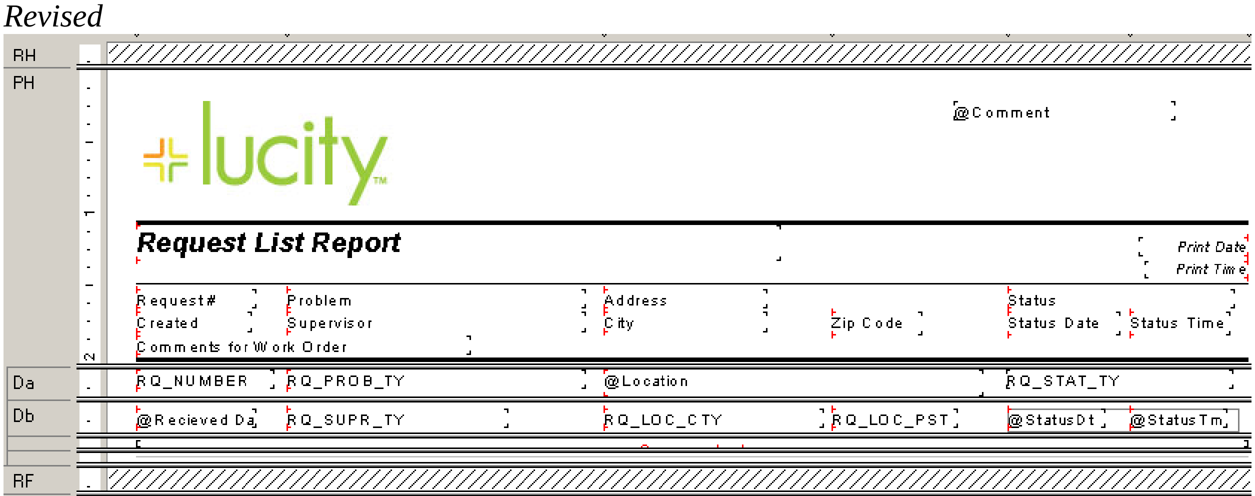
IX. Example 9



We will use the Can Grow option, remove a parameter type field, insert a logo and add the report to the module.

1. From the **Work** reports folder, open **CT_ReqList.rpt**.
2. The Problem field is cutting off so format to *Can Grow*.
3. To accommodate the *Can Grow* feature, split the *Detail a* section just below the Request Number field.
4. Remove the **Report Subtitle** parameter field.
5. Insert the Lucity Logo (**Lucity.png**) into the Page Header. (Located at C:\temp\)
6. Add the report to the Request module list of reports.

Revised



Solution

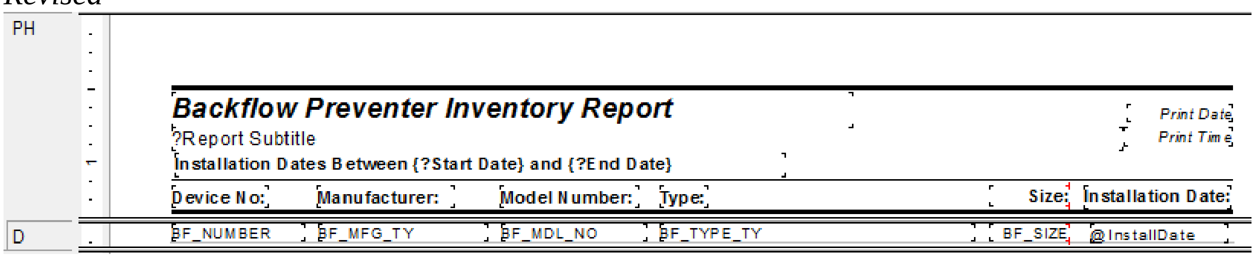
1. Format the Problem field to grow vertically.
    a. Right click in the **RQ_PROB_TY** field and select *Format Field…*
    b. Click on the *Common* tab.
    c. Click to check the box next to *Can Grow*.
    d. *Ok*
2. Split the *Detail a* section.
    a. Place the curser on the right edge of the vertical ruler just below the **RQ_Number** field. Click, hold – it should turn into a line with two arrows
    b. Pull to the right off of the ruler. The *Detail a* section should now be split into *Detail a* and *b* sections.
3. Remove the **Report Subtitle** parameter field.
    a. Click on **?Report Subtitle**.
    b. Press the *Delete* key.
4. Add logo.
    a. Just above the **Request List Report** title, in the left ruler, click and pull to the right to create two *Page Header* sections.
    b. Increase the *Page Header a* section to allow the logo.
    c. Click on *Insert Picture* from the Insert Tools Toolbar.
    d. Go out to the picture location (C:\temp\) double click **Lucity.png**.
    e. Click in the *Page Header a* section where the left top corner of the logo should be placed. Click and drag to correct location if necessary.
    f. Right click in the *Page header a* section and select *Merge Section Below*.
5. Save
6. Add report to the Work Request module.
    a. In the **Work Requests** module, open the Report Dialog.
    b. Click *Add.*
    c. In *Report File Path* browse out to the report file location.
    d. Double click on the correct report (**CT_ReqList.rpt**).
    e. Type in the **Report Name**, **Description** and *Save*.

X. Example 10

We will add Date parameters, select records with the parameters and add a title that uses the parameters.

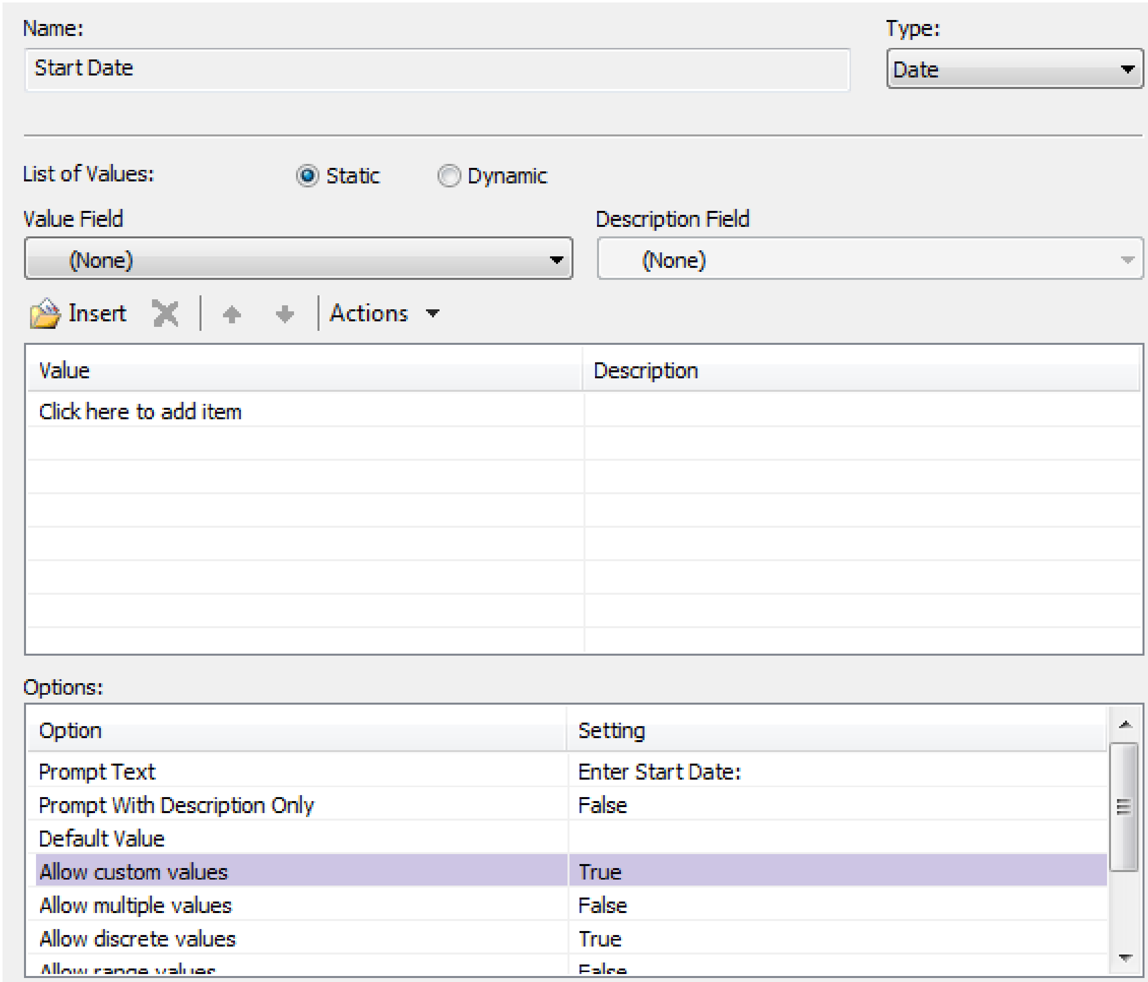
1. In the **Water** Report folder, open **CT_wtbfsum.rpt.**
2. Add date range parameters (Start and End) for the **Installation Date**.
3. Use the date parameters in the selection criteria.
4. Bring the date parameters into the *Page Header* in a text object.
5. Save

Revised



Solution

1. In *Field Explorer* right click on *Parameter Fields*, select *New…*
2. Type in a Name for the Start Date parameter. (**Start Date**)
3. Select the parameter *Type:* **Date**.
4. *List of Values* should be **Static**.
5. In Options don't allow multiple values.
6. *OK*.



7. Repeat for the End Date.

8. Click on the **@InstallDate** field and then click *Select Expert*.

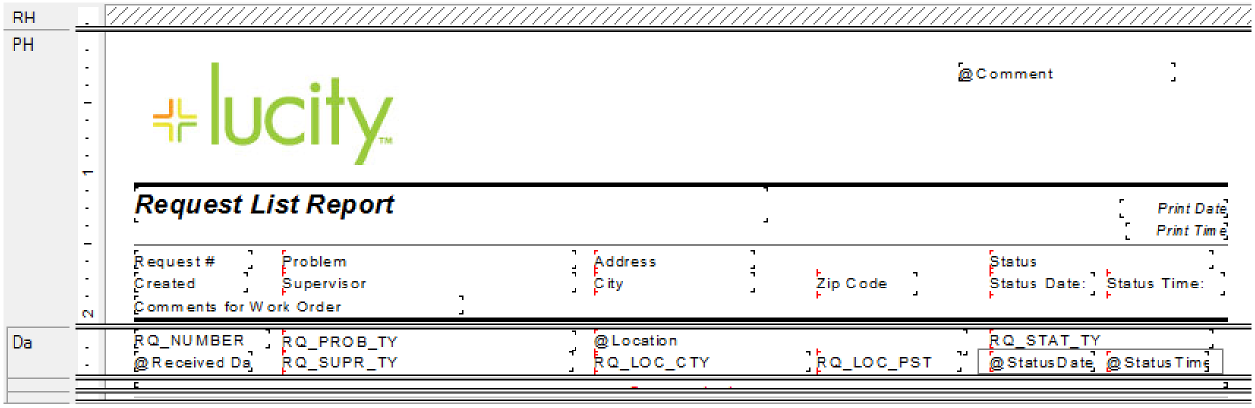
9. Use the drop down boxes to select the correct fields to create the following formula:

   {@InstallDate} in {?Start Date} to {?End Date}

10. Add a text object below the **@Report Subtitle** field. Type in "**Installation Dates Between and** ".

11. Drag the **?Start Date** and **?End Date** parameter fields into the text object.

XI. Example 11

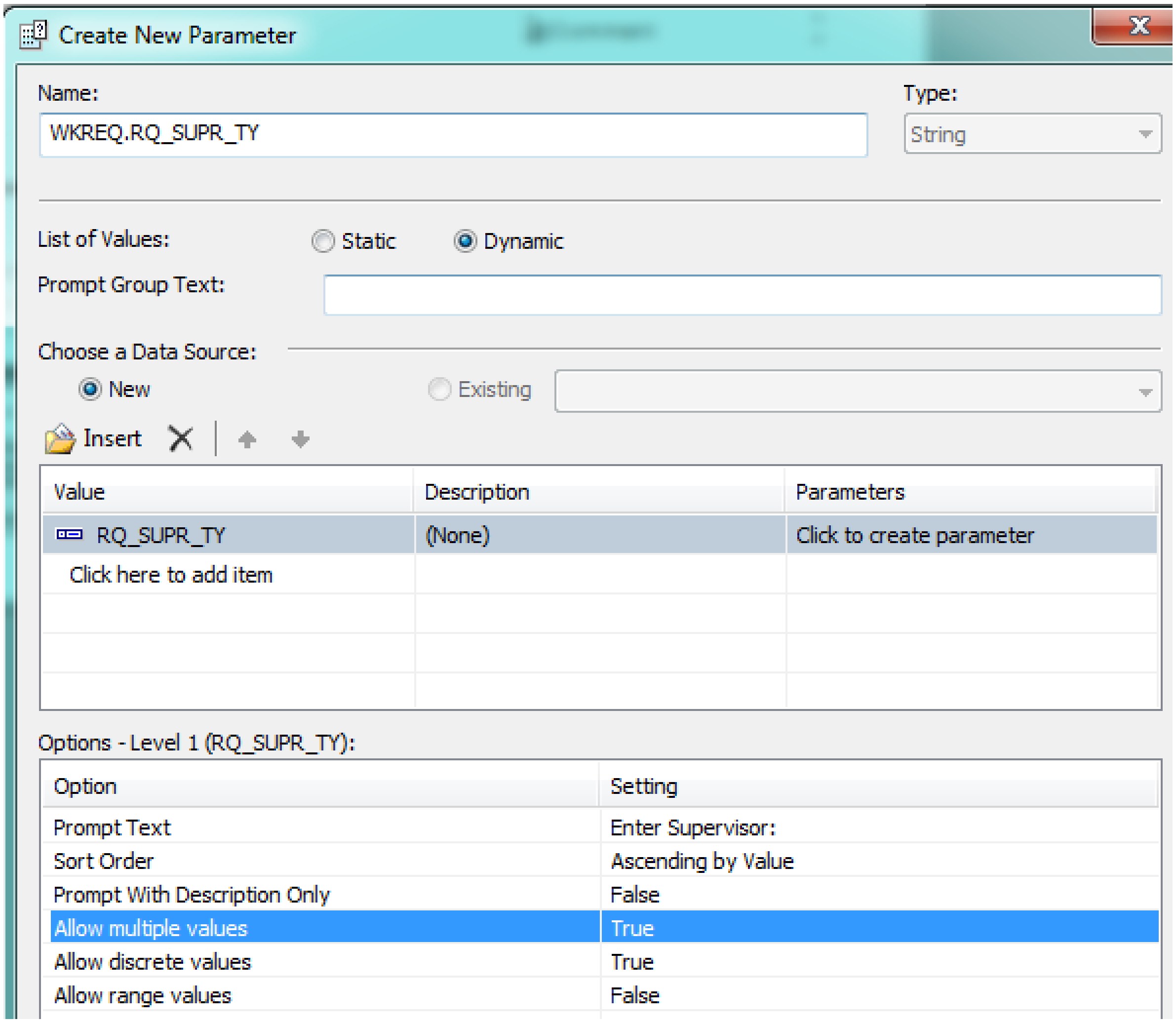


We will add a dynamic parameter to choose records.

1. From the **Work** Report folder, open **CT_ReqList.rpt**.
2. Add a dynamic parameter to choose the Supervisor (**RQ_SUPR_TY**).
3. Use the Parameter to select records.

<u>**Solution**</u>

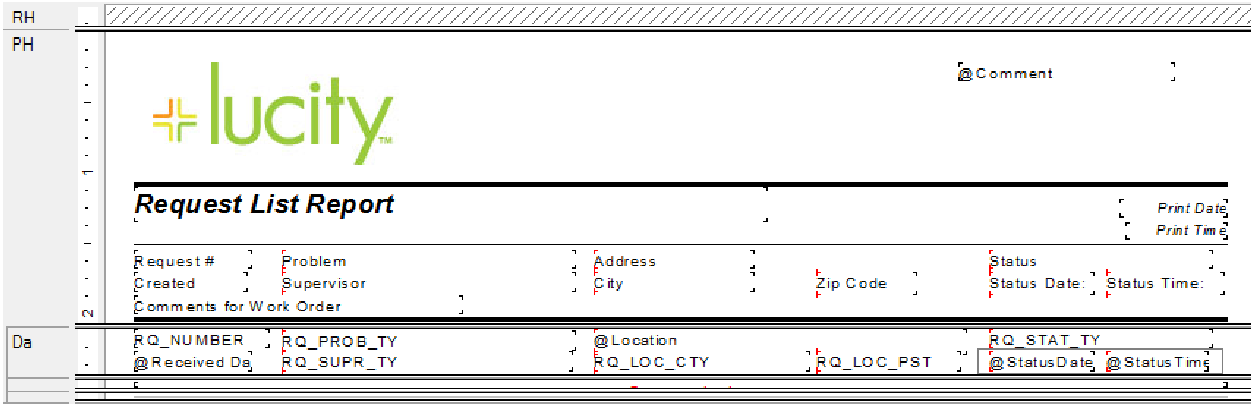
1. In *Field Explorer* right click on *Parameter Fields* and select *New…*
2. In *Name* type in **WKREQ.RQ_SUPR_TY**.
3. Select **String** for *Type*.
4. For *List of Values:* select **Dynamic**.
5. Click *Insert* and click on the **RQ_SUPR_TY** field.
6. In Options change the *Prompt Text* to **Enter Supervisor**.
7. In Options allow multiples.
8. *OK*



9. In Select Expert add a formula using the Supervisor field and the parameter field.

{WKREQ.RQ_SUPR_TY} = {?WKREQ.RQ_SUPR_TY}

XII. Example 12

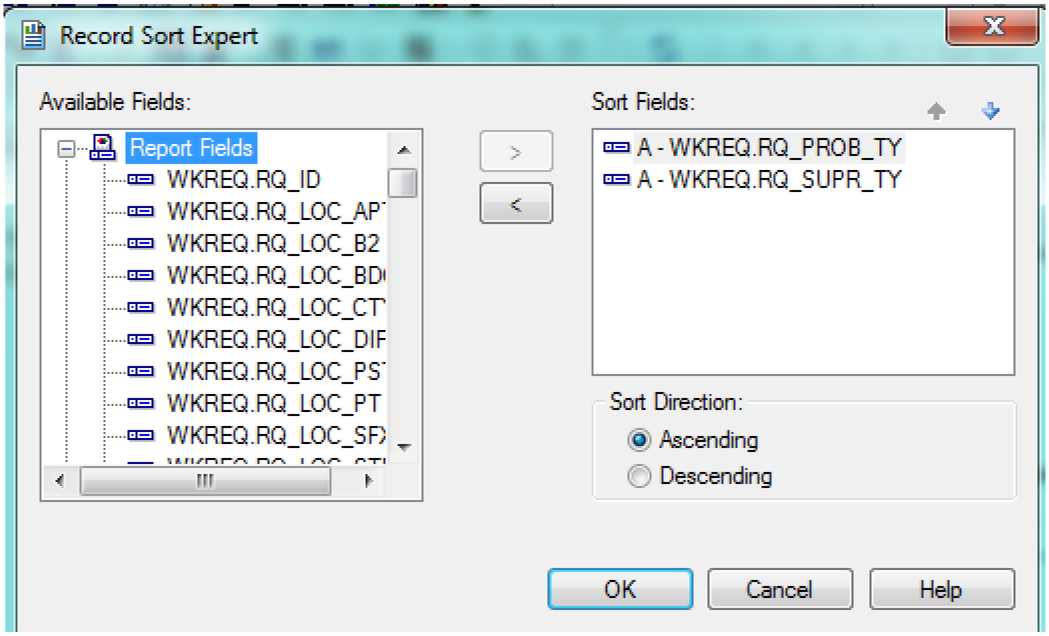


We will add a sort.

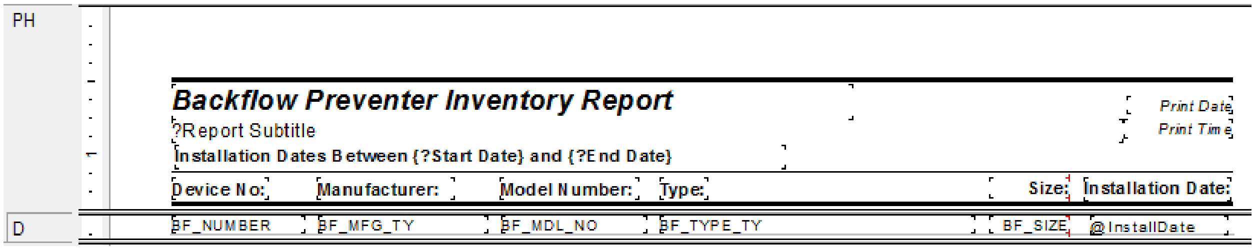
1. From the **Work** Report folder, open **CT_ReqListSort.rpt**.
2. Remove the current sort on the Request Number (**RQ_NUMBER**).
3. Add a sort on the **Problem** – Ascending.
4. Add a sort on the **Supervisor** – Ascending.
5. Save.

<u>Solution</u>

1. In the *Expert Tools Toolbar* click on *Record Sort Expert*.
2. In the *Available Fields:* box click on the **RQ_PROB_TY** field and use the arrow to move to the *Sort Fields:* box.
3. Click **Ascending**.
4. Repeat for the **RQ_SUPR_TY** field. (See next page)


Record Sort Expert
Available Fields:
Report Fields
WKREQ.RQ_ID
WKREQ.RQ_LOC_AP
WKREQ.RQ_LOC_B2
WKREQ.RQ_LOC_BD
WKREQ.RQ_LOC_CT
WKREQ.RQ_LOC_DIF
WKREQ.RQ_LOC_PS
WKREQ.RQ_LOC_PT
WKREQ.RQ_LOC_SF
Sort Fields:
A - WKREQ.RQ_PROB_TY
A - WKREQ.RQ_SUPR_TY
Sort Direction:
Ascending
Descending
OK
Cancel
Help

XIII. Example 13



We will add two groups, a summary and a running total.

1. From the **Water** Report folder, open **CT_wtbfsum.rpt**.

2. Create a group for **Type**.

3. Create a group for **Size**.

4. Move the Column headers for **Type** and **Size** to the left to align with the Group Headers.

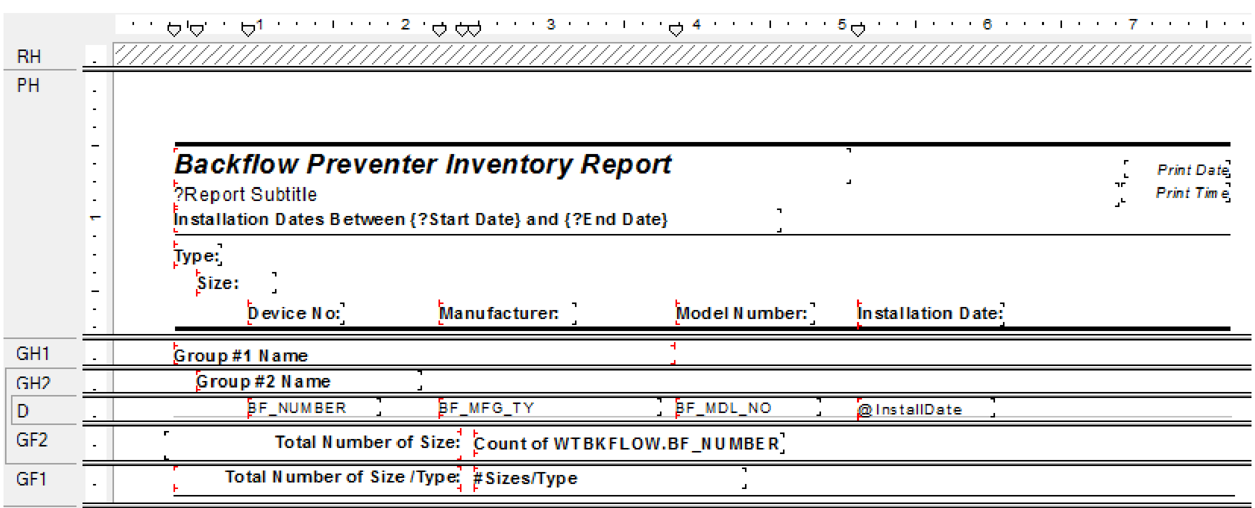
5. Remove the **Type** and **Size** fields from the Detail section.

6. Add guidelines and rearrange the columns to close up the space.

7. Summarize the number of each **Size**. Place in Size *Group Footer*.

8. Create a Running Total to total the number of sizes per **Type**. Place in Type *Group Footer*.

9. Save



Backflow Preventer Inventory Report

3/5/2014
1:00 PM

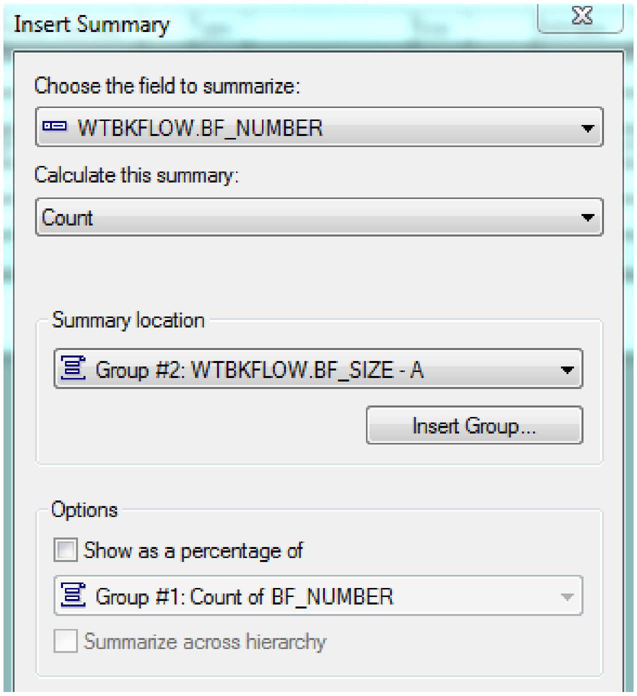
Installation Dates Between 1/1/1999 and 1/1/2008

Type:
Size:

Device No:	Manufacturer:	Model Number:	Installation Date:
Atmospheric Vacuum Breake			
2.0			
147	WATTS	288A-M3	06/04/2007
Total Number of Size: 1			
Total Number of Size /Type: 1			
Double Check			
2.0			
214	FEBCO	870V	06/04/2007
Total Number of Size: 1			
Total Number of Size /Type: 1			
Double Check Detector			
6.0			
33	HERSEY	6CMDA	06/01/1999
Total Number of Size: 1			
10.0			
2254	AMES	3000	06/04/2007
Total Number of Size: 1			
Total Number of Size /Type: 2			

Solution

1. To create the group on Type, click on the **BF_TYPE_TY** field.
2. Click on *Insert Group* in the Insert Tools Toolbar.
3. *OK*
4. Repeat for the **BF_SIZE** field.
5. To summarize the number of devices of the grouped size, click on the **BF_Number** field.
6. Click on *Insert Summary* from the Insert Tools Toolbar.
7. Use the drop down arrow for *Calculate this summary* and select *Count*.
8. Use the drop down arrow for *Summary location* and select **Group #2 BF_SIZE.**
9. *OK*
10. The summary field is automatically placed in the *Group Footer 2* section. It can be moved to a different location within the section.



11. To create the Running Total of sizes per Type, right click on *Running Total Fields* in Field Explorer. (See next page)

12. Select *New…*

13. Type in a name for the *Running Total* formula. (**Sizes/Type**)

14. Move **BF_SIZE** to the *Field to summarize* box.

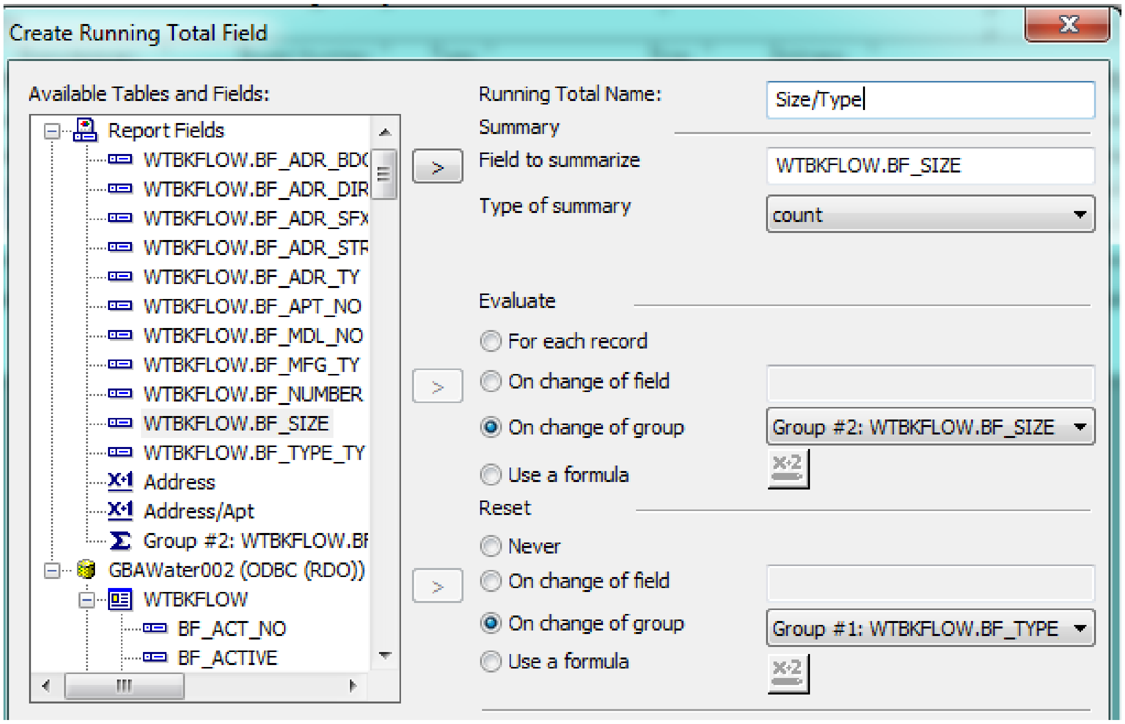
15. In *Type of summary* use the drop down arrow and select *count*.

16. *Evaluate On change of group*, **BF_SIZE**

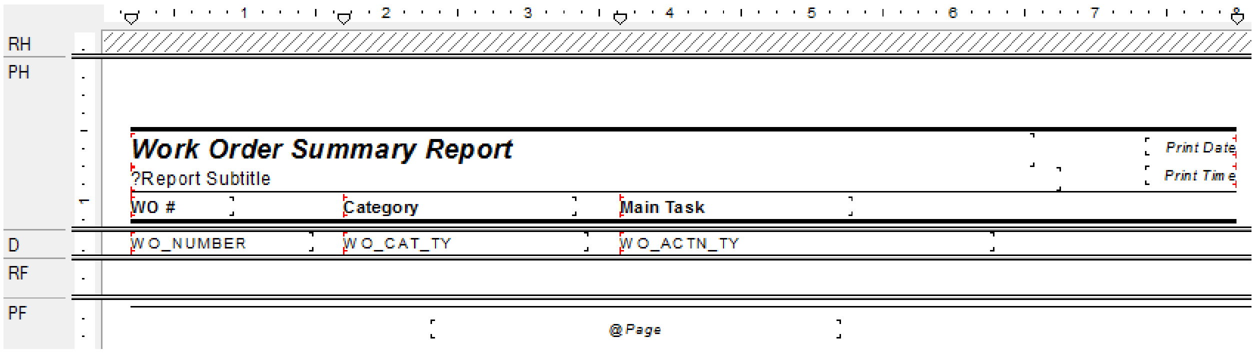
17. *Reset On change of group*, **BF_TYPE**

18. *OK*

19. Drag the running total field into the *Group Footer 1* Section.


Create Running Total Field
Available Tables and Fields:
Report Fields
WTBKFLOW.BF_ADR_BDC
WTBKFLOW.BF_ADR_DIR
WTBKFLOW.BF_ADR_SFX
WTBKFLOW.BF_ADR_STR
WTBKFLOW.BF_ADR_TY
WTBKFLOW.BF_APT_NO
WTBKFLOW.BF_MDL_NO
WTBKFLOW.BF_MFG_TY
WTBKFLOW.BF_NUMBER
WTBKFLOW.BF_SIZE
WTBKFLOW.BF_TYPE_TY
Address
Address/Apt
Group #2: WTBKFLOW.BF
GBAWater002 (ODBC (RDO))
WTBKFLOW
BF_ACT_NO
BF_ACTIVE
Running Total Name:
Size/Type
Summary
Field to summarize
WTBKFLOW.BF_SIZE
Type of summary
count
Evaluate
For each record
On change of field
On change of group
Group #2: WTBKFLOW.BF_SIZE
Use a formula
Reset
Never
On change of field
On change of group
Group #1: WTBKFLOW.BF_TYPE
Use a formula

XIV. Example 14



Add subtasks and their costs.

1. From the **Work** Report folder, open **CT_WOSumTsk.rpt**.

2. Group on **Work Order # (WKORDER.WO_NUMBER)** field.

3. Suppress or delete the actual Group name field (Group #1 Name).

4. Move the fields from the *Detail* section to the *Group Header 1* section.

5. Create a formula (**Subtask**) combining Subtask Code (**WT_TASK_CD**) and Text (**WT_TASK_TY**) fields.

```
if isnull({WKWOTSK.WT_TASK_CD}) then"" else {WKWOTSK.WT_TASK_CD}&"  "&
if isnull({WKWOTSK.WT_TASK_TY}) then"" else {WKWOTSK.WT_TASK_TY}
```

6. Group on **Subtask Code (WKWOTSK.WT_TASK_CD)** field. Suppress both *Header* (*GH2*) and *Footer* (*GF2*) sections for this group.

7. Group on **Subtask ID (WKWOTSK.WT_ID)** suppress or delete the actual Group name field (Group #3 Name)**.**

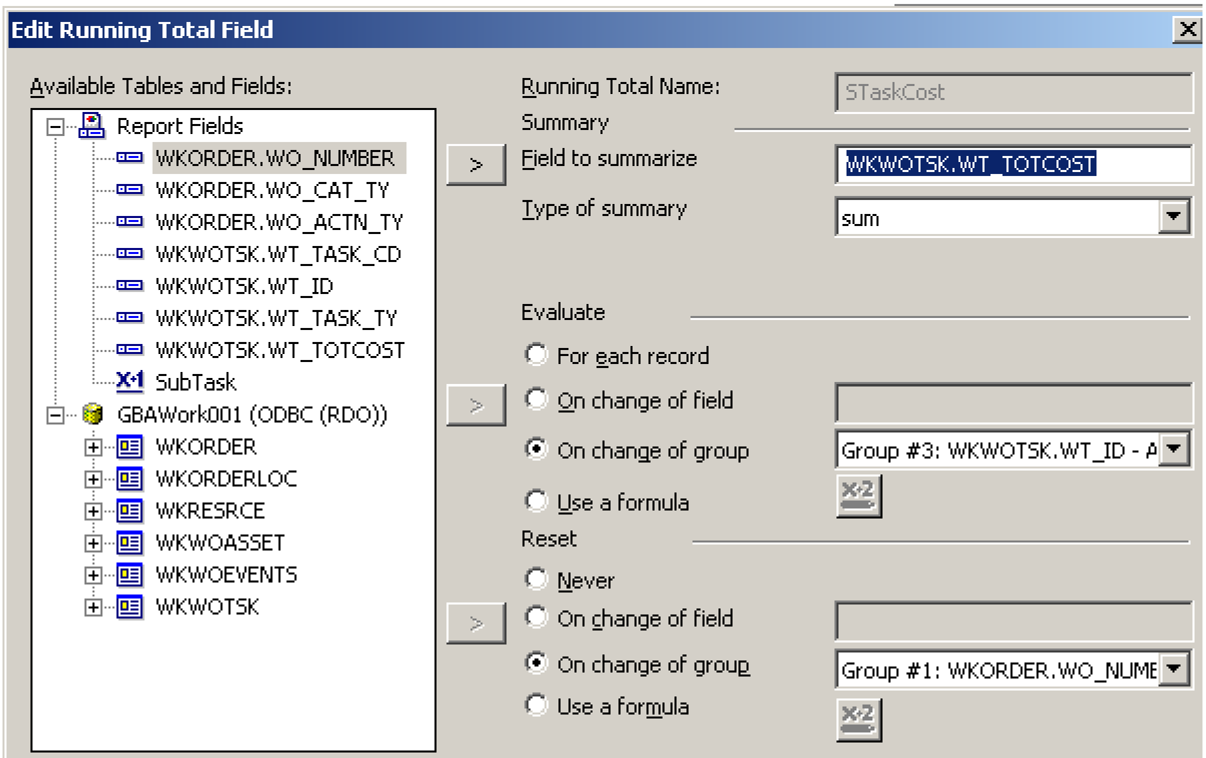
8. Add a section to the *Group Header 1* section – new section ***GH1b***.

9. Add column headers for the **Subtask** and Subtask **Cost** (<u>Underline</u>, Not Bold and *Italic*) in the *Group Header 1b* section (***GH1b***).

10. Add the **Subtask** formula into the *Group Header 3* section (***GH3***) under the **Subtask** column header.

11. Add the **Subtask Total Cost (WKWOTSK.WT_TOTCOST)** field into the *Group Header 3* section (***GH3***) under the **Cost** column header.

12. Create a Running Total on the **Task Cost** and place in the Work Order group footer (***GF1***).



a. ***Evaluate*** *on change of group* **WT_ID**
b. ***Reset*** *on change of group* **WO_NUMBER**.

13. Add a Text field to describe the Total Cost field. (**WO Subtask Total Cost**) (***GF1***)

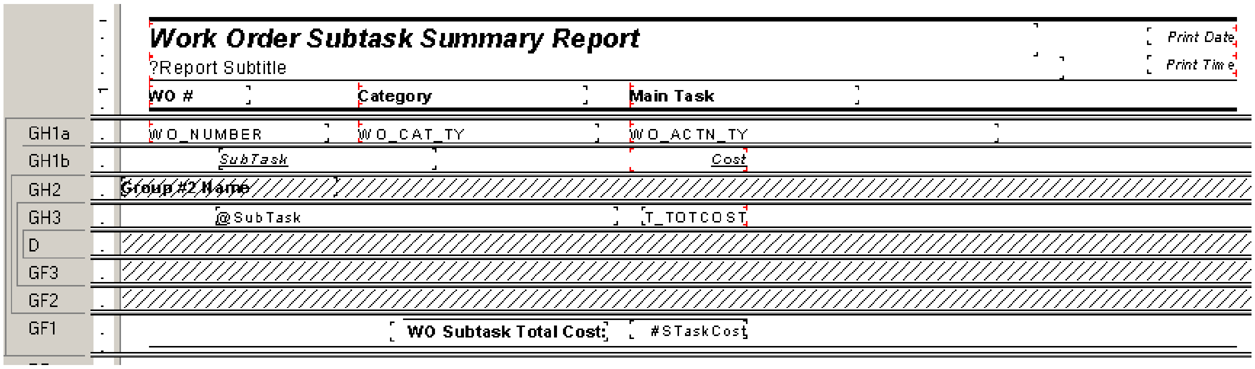
14. Change the title. (**Work Order Subtask Summary Report**)

15. Add a line at the bottom of the ***GF1*** section to separate Work Orders.

16. Add a line above the **WO Subtask Total Cost** text box and field (***GF1***).

17. Format the cost fields with **$**.

18. Save.



Work Order Subtask Summary Report

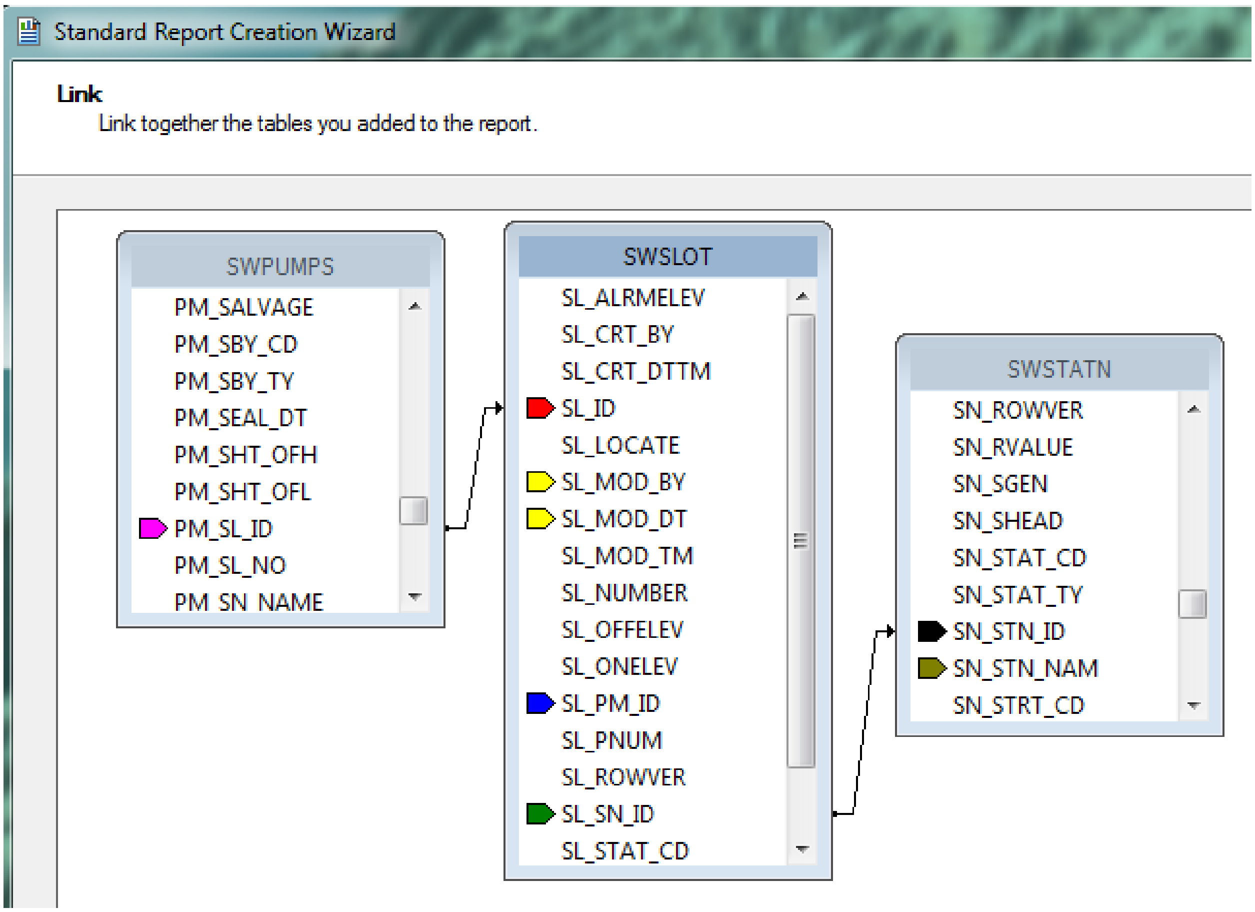
4/15/2015
12:13 PM

WO #	Category	Main Task
2006-01128	Sewer Service	Waste Water Quality Commercial

SubTask		Cost
ENGTR05	Work Zone	$85.57
WWQC00	Waste Water Quality Commercial	$121.12
	WO Subtask Total Cost:	$206.69

XV. Example 15

1. Create a new Sewer report from Crystal's **Standard Report Wizard** option called **Sewer Pump List**, to be saved in the Sewer report folder as **CT_SWPumpList.rpt**.
   Use the following tables:
   - SWPUMPS
   - SWSTATN
   - SWSLOT

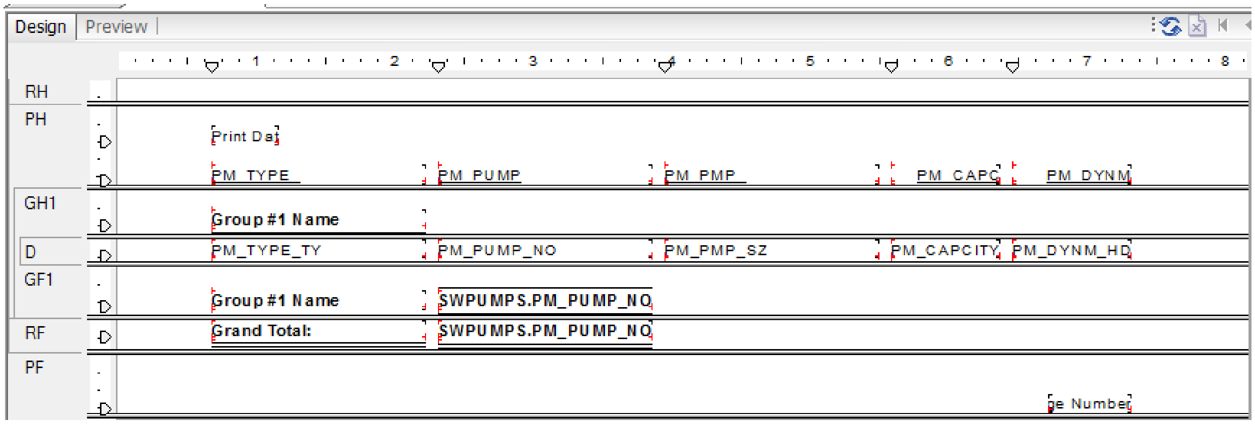


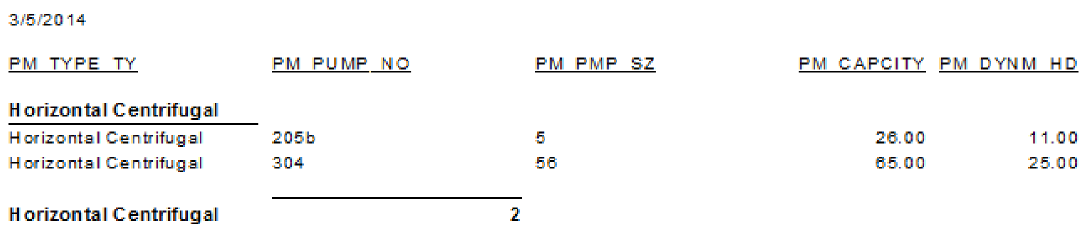
2. Bring in the following fields.
   - Pump Number (**PM_PUMP_NO**)
   - Pump Type text (**PM_TYPE**)
   - Pump Size (**PM_PMP_SZ**)
   - Pump Capacity (**PM_CAPCITY**)
   - Total Dynamic Head (**PM_DYNM_HD**)

3. Group on **Pump Type** (**PM_TYPE**).

4. Put in a count summary for **Pump Type**. (Count on Pump Number)

5. Put in a Grand Total for number of Pumps.





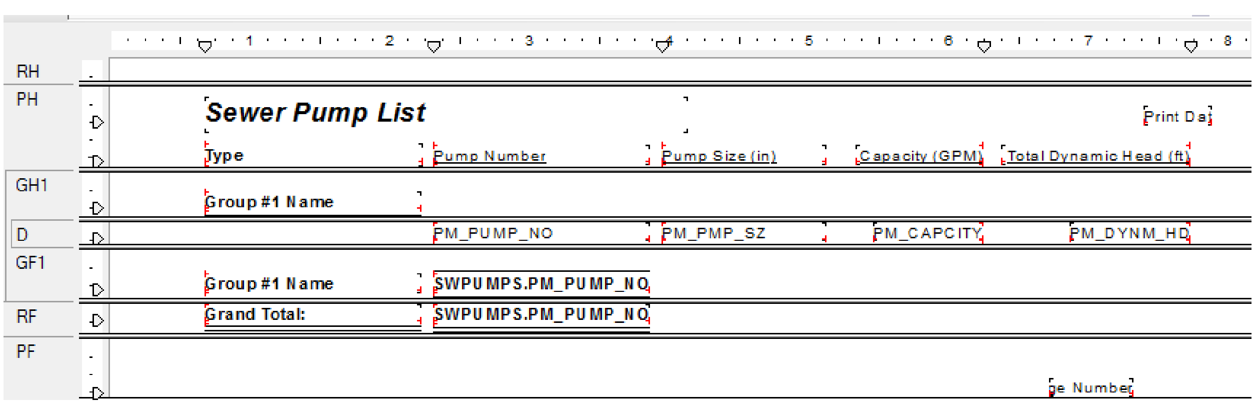
6. Move the **Print Date** field to the right.

7. Add the Title – **Sewer Pump List**.

8. Remove the **PM_TYPE_TY** field from the *Detail* section since this field is being grouped on.

9. Change the Column headers to be more descriptive (see example).

10. Add a text object for **Type**. Place in the *Page Header* section, under the title.



Sewer Pump List

3/5/2014

Type	Pump Number	Pump Size (in)	Capacity (GPM)	Total Dynamic Head (ft)
Horizontal Centrifugal				
	205b	5	26.00	11.00
	304	56	65.00	25.00
Horizontal Centrifugal	**2**			

XVI. Example 16

1. Create a new Work report from Crystal's **Blank Report** option called **Work Order Summary**, to be saved in the Work report folder as **CT_WOSumCat.rpt**.
   Use the following tables:

   - WKORDER
   - WKWOTSK
   - WKRESRCE
   - WKORDERLOC
   - WKWOASSET

2. Select on New Work Orders, **WO_STAT_CD** = 2.

3. Bring in the following fields.

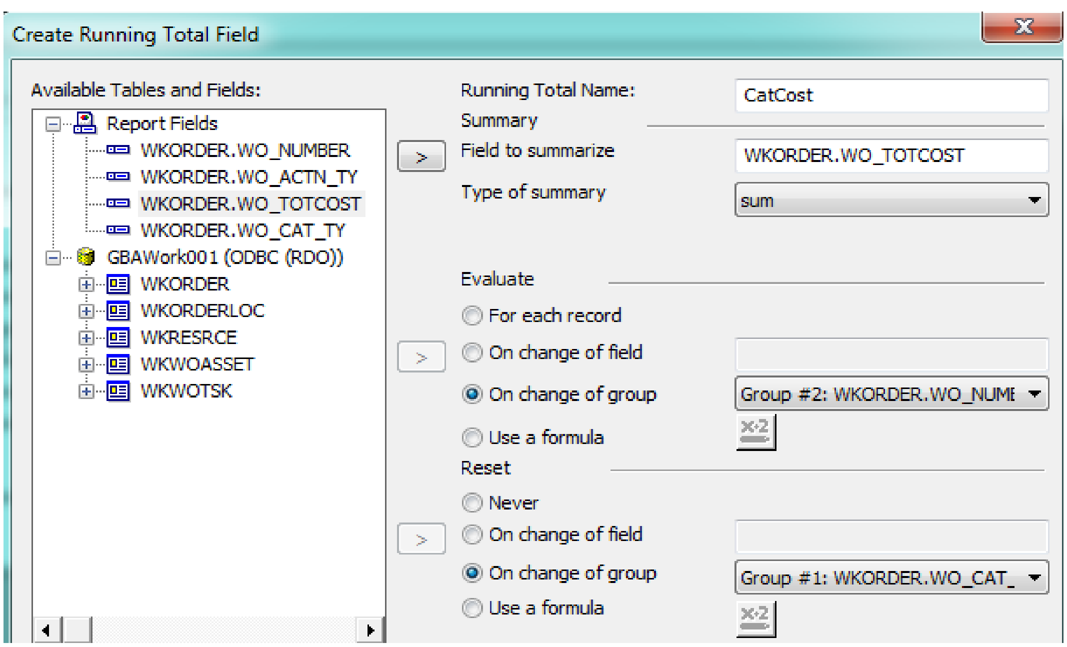
   - WO Number (**WO_NUMBER**)
   - Category text (**WO_CAT_TY**)
   - Main Task text (**WO_ACTN_TY**)
   - Total Cost (**WO_TOTCOST**)

4. Group on **Category.**

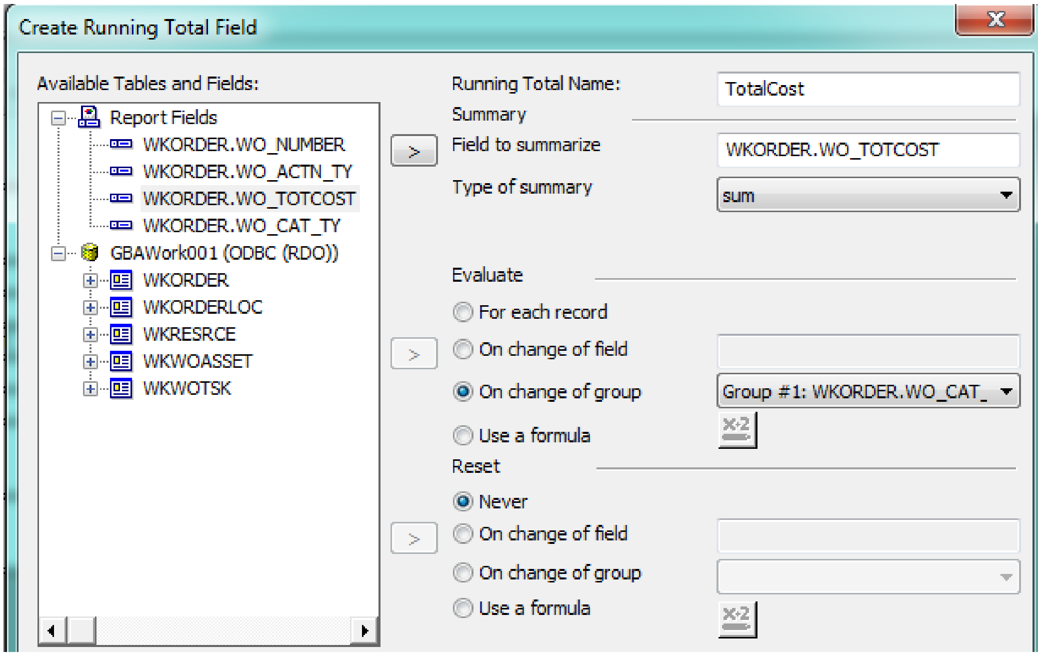
5. Group on **WO Number.**

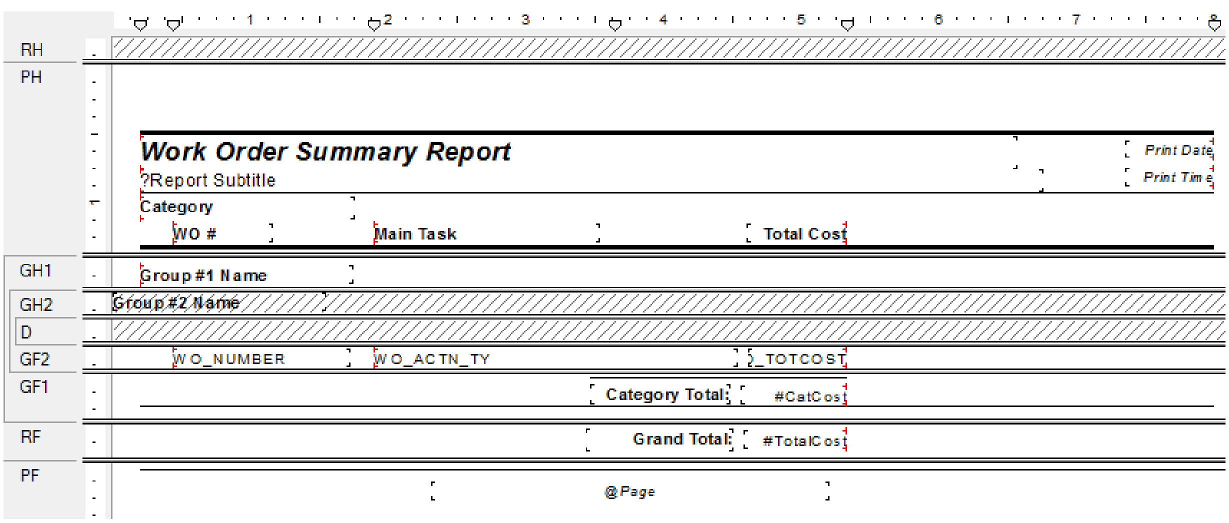
6. Move fields to *GF2* section.

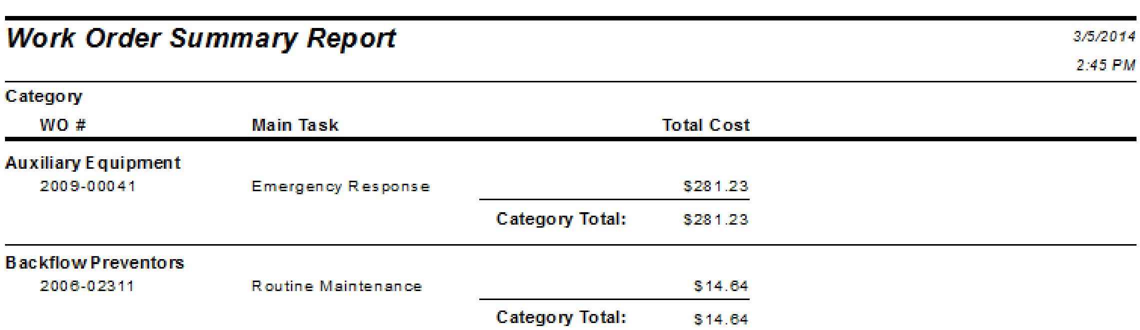
7. Put in a cost subtotal for Category using a Running Total.



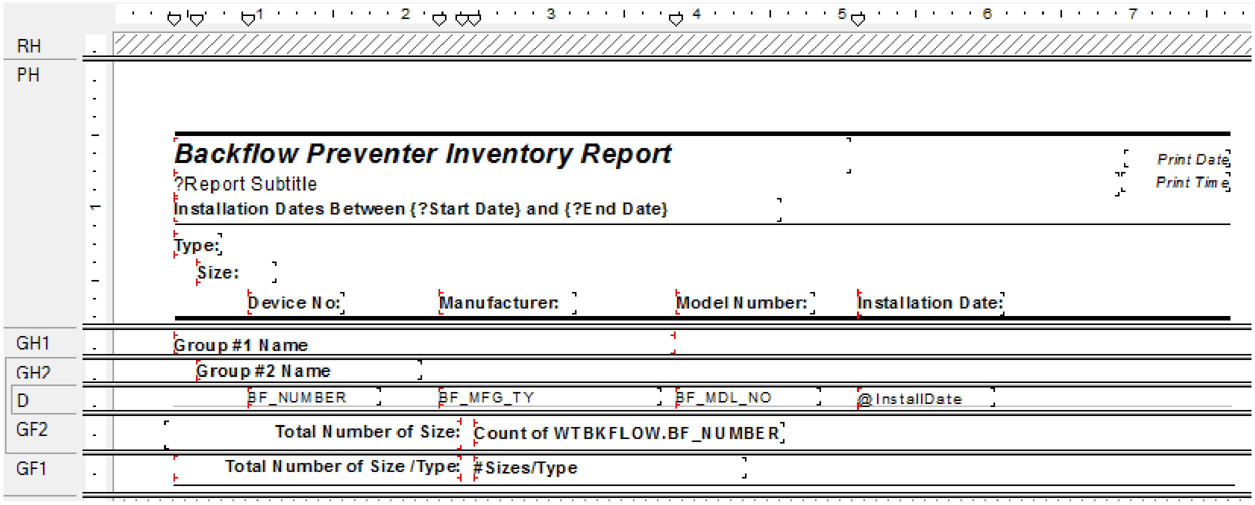
8. Put in a cost Grand Total using a Running Total.







XVII. Example 17



From the Backflow Preventer module we would like to add the Testing information. This could be done with additional grouping on the Device and then the Testing ID but usually this child type information is brought in as a subreport.
The subreport will be placed in its own section so blank subreport spacing can be suppressed.

1. From the **Water** Report folder, open **CT_wtbfsumSubReport**.

2. Add an additional *Detail* section.

3. Add a subreport (call it **Testing**) Use table **WTBFTEST.**

4. Link the subreport.

5. Format the subreport – Especially the *Suppress Blank Subreport* option.

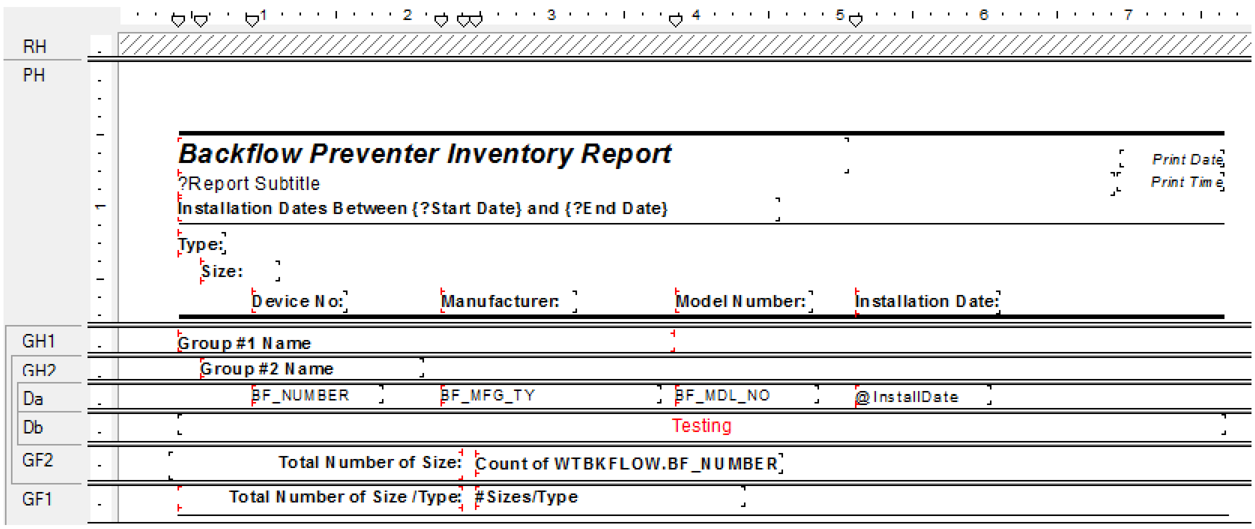
6. Open the subreport and Add a subreport Title – **Testing**.
   a. Add Testing fields.
      - Initial Test Date **BT_DATE_A**
      - Pass Initial? **BT_PASS_I**
      - Final Test Date **BT_DATE_B**
      - Pass Final? **BT_PASS_F**
   b. Add a box around the data, top in the *report header* section and the bottom in the *report footer* section.

   c. Delete or suppress unused sections.

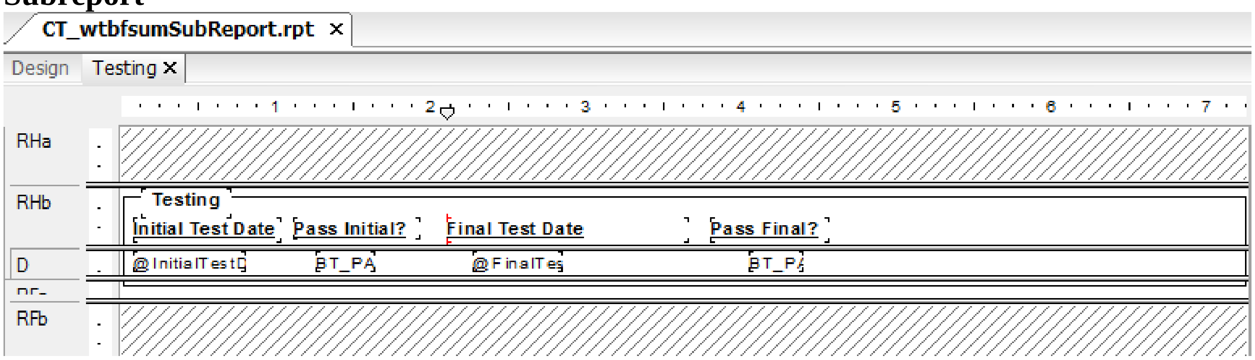
7. Preview the report – notice the empty space for a record with no testing.

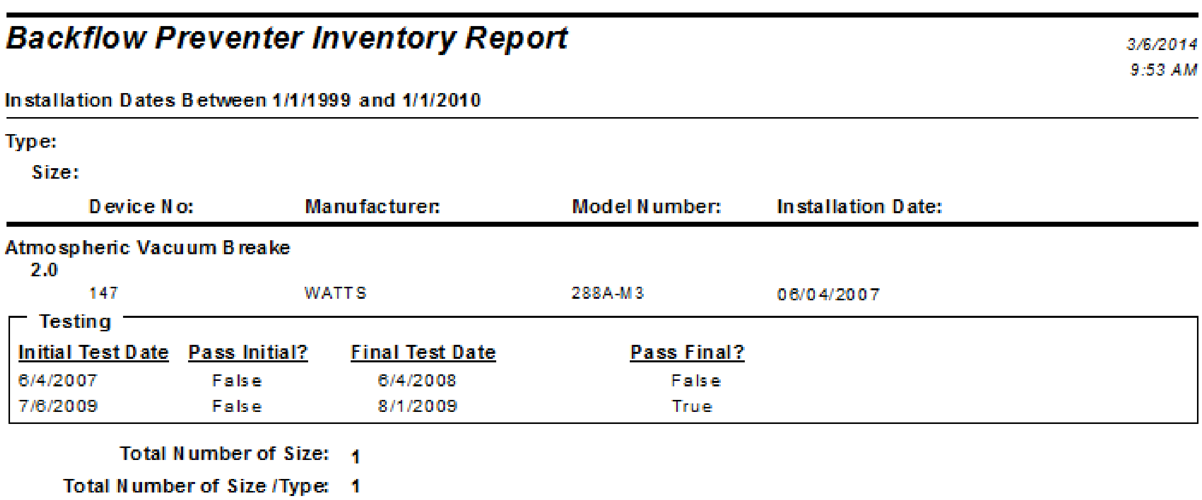
8. In the Detail *Section Expert* make sure the section with the subreport has the *Suppress Blank Section* option checked.

9. Save

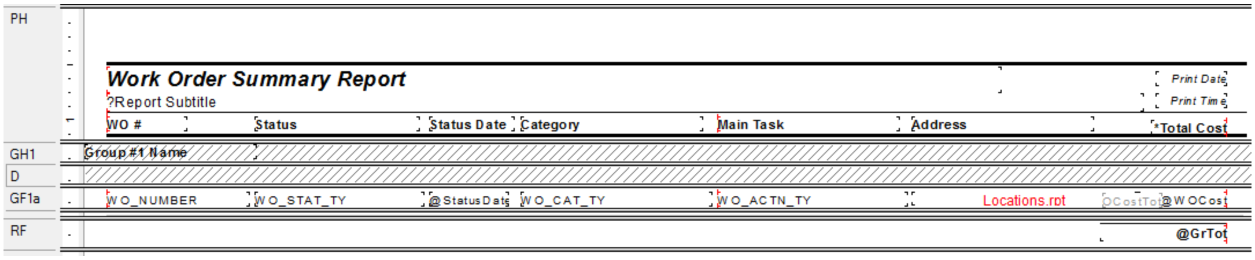


Subreport

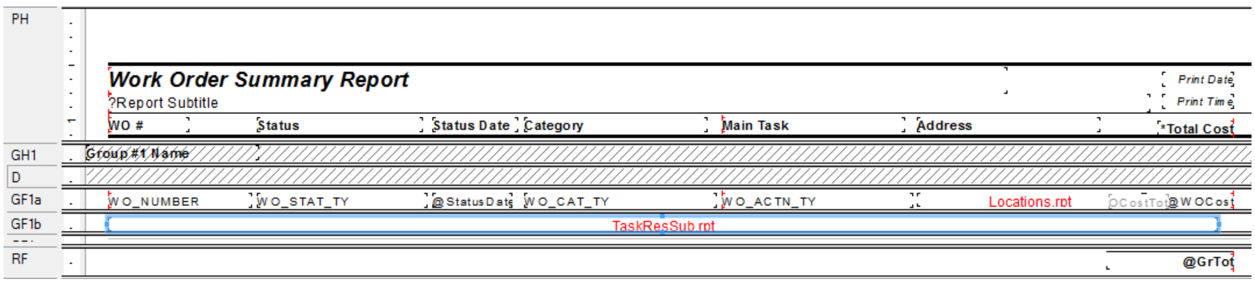




XVIII. Example 18



Add the Task/Resource subreport from the Work Order Detail report (**WODetail.rpt)** to the Work Order Summary Report (**WOSum.rpt)**.



<u>Solution</u>

1. From the **Work** Report folder, open **WODetail.rpt.**

2. Right click on the **TaskRes.rpt** subreport and select *Save Subreport As…*
   a. Select the correct location to put the subreport in (Work).
   b. Give it a File name. (**TaskResSub.rpt**)
   c. Save
3. Close the **WODetail.rpt** report.

4. From the **Work** Report folder, open **CT_WOSumTaskResource.rpt**.

5. Add a new Group footer section beneath *GF1a*.

6. Insert a subreport selecting *Choose an existing report* option.

7. Browse out to the **TaskResSub.rpt** report that was saved in the Work folder.

8. Double click on the file. *OK*

9. Format the subreport.

   - In the ***Common*** tab, Uncheck “Keep Object Together”. It depends on the amount of data that will show in the subreport as to whether this is checked or not.

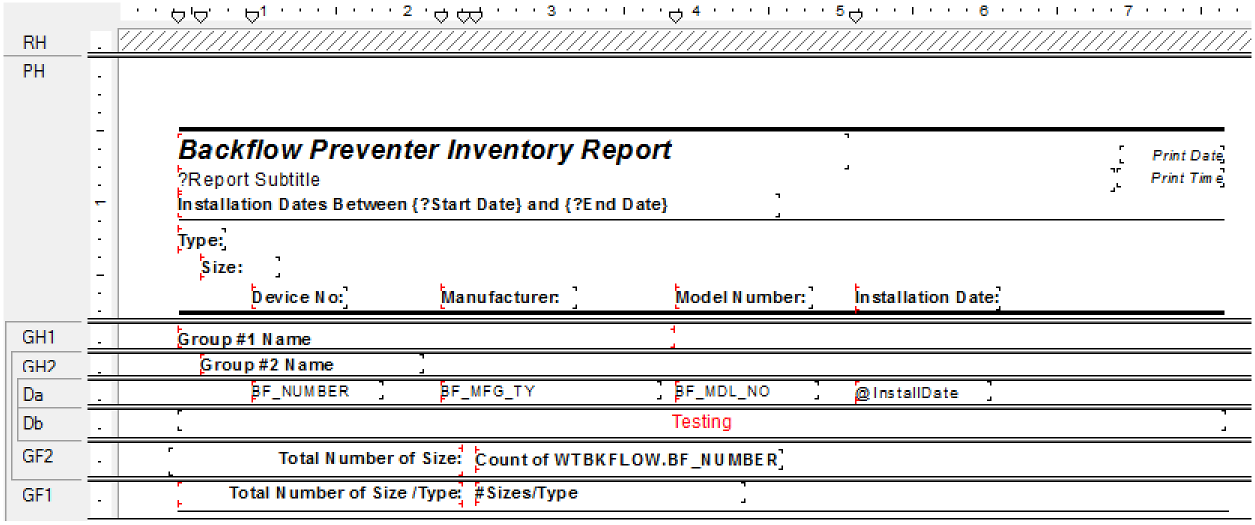
10. Link the subreport.

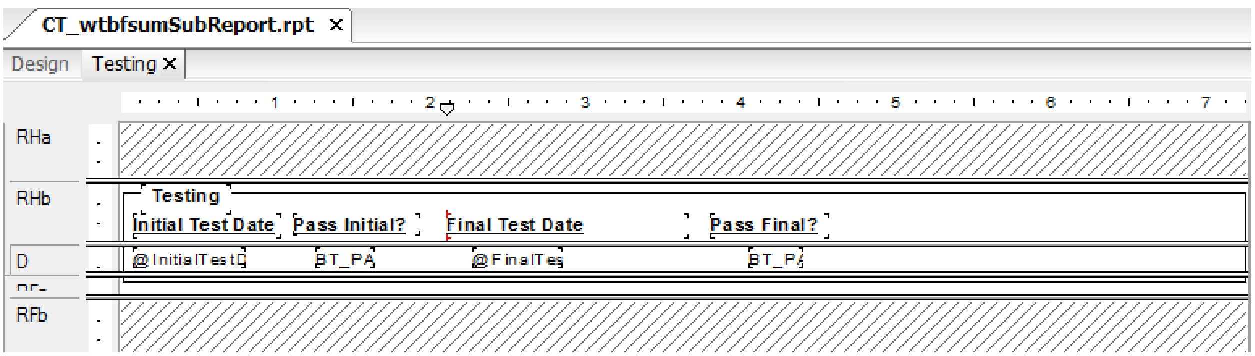
11. Open the subreport and remove the blank sections (*Header and Footer*).

12. Open the subreport's *Select Expert* and remove the additional linking formula.

13. In *Section Expert* check the **Suppress Blank Section** option for the *Group Footer 1b* section.

XIX. Example 19





Set the report up to query for a date range that will be used with the Initial Test Date in the subreport. Use the existing Date parameters.

Solution

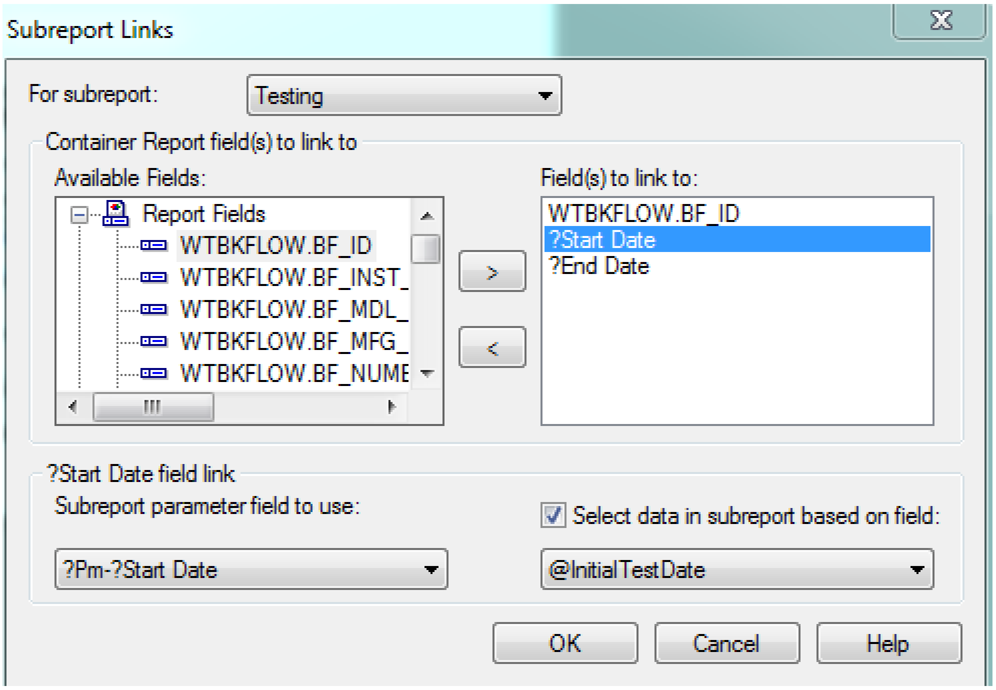
1. From the **Water** Report folder, open **CT_wtbfsumSubTestDt.rpt.**

2. The **Start Date** and **End Date** parameters already exist for the Installation Date selection. Remove this formula from the Select Expert.

3. Right click on the **Testing** subreport and select *Change Subreport Links…*

4. Move both the **[?] Start Date** and **[?] End Date** parameter fields from the *Available Fields:* into the *Field(s) to link to:* box.

5. In the right lower box use the drop down arrow and select **@InitialTestDate** for both the **?Start Date** and **?End Date**. (see next page)



6. OK

7. Open the Testing subreport.

8. Click *Select Expert* > *Show Formula* > *Formula Editor…*

9. Change the formula from:

   {@InitialTestDate} = {?Pm-?Start Date} and
   {@InitialTestDate} = {?Pm-?End Date} and
   {WTBFTEST.BT_BF_ID} = {?Pm-WTBKFLOW.BF_ID}

   To this:

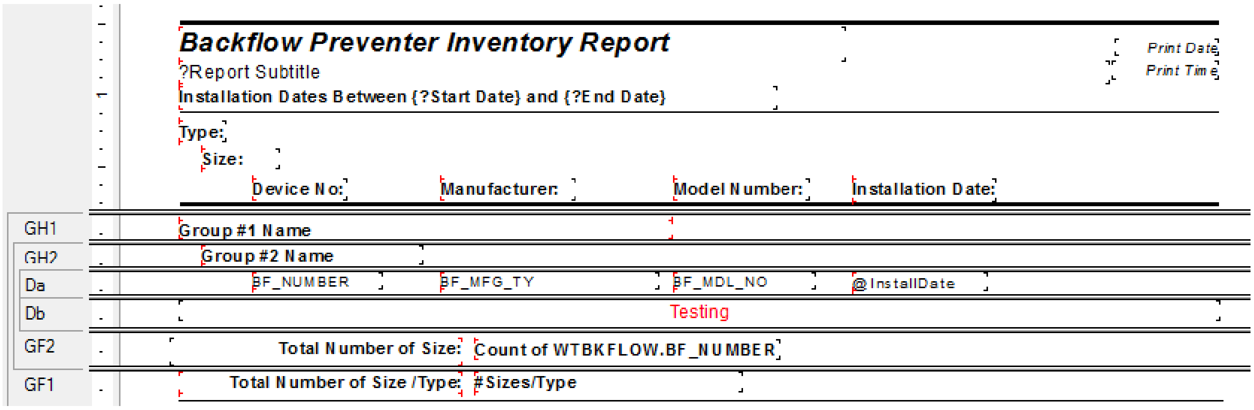
   {@InitialTestDate}>= {?Pm-?Start Date} and
   {@InitialTestDate} <= {?Pm-?End Date} and
   {WTBFTEST.BT_BF_ID} = {?Pm-WTBKFLOW.BF_ID}

10. *Save and close*

11. *OK*

12. Change the Date Title to read **Initial Test Dates Between ?Start Date and ?End Date**

XX. Example 20



Add a General Comment subreport below the Testing subreport in its own section.

Solution

1. From the **Water** Report folder, open **CT_wtbfsumSubComment.rpt.**
2. Add a new *Detail* section under *Detail b*. (*Dc*)
3. Click *Insert Subreport.*
4. Give it a *New report name*. (**Comment**)
5. Click *Report Wizard…*
6. In *Data Source Selection* choose **GBAWater001.** *Finish*
7. Select **WTMEMO** in the *Available Data Sources:* and use the arrow (>) to move it to *the Selected Tables:*
8. *Finish* and *OK*
9. Drop the subreport box into the *Detail c* section.
10. Format the subreport.
11. Link the subreport by right clicking on it and selecting *Change Subreport Links…*
12. Move the **BF_ID** field to *Field(s) to link to:*
13. In the lower right box select **CO_REC_ID**.

14. Open the **Comment** subreport.
    a. Add a text field to the *Detail* section. (**Comment:**)

    b. Bring in the **CO_TEXT** field and place it next to **Comment:**.

    c. In the subreport's *Select Expert* click *New*.

    d. Click on **CO_FIELD**

    e. *OK*

    f. Use the drop down box to select *is equal to*.

    g. In the right box select **BF_MEMO1**.

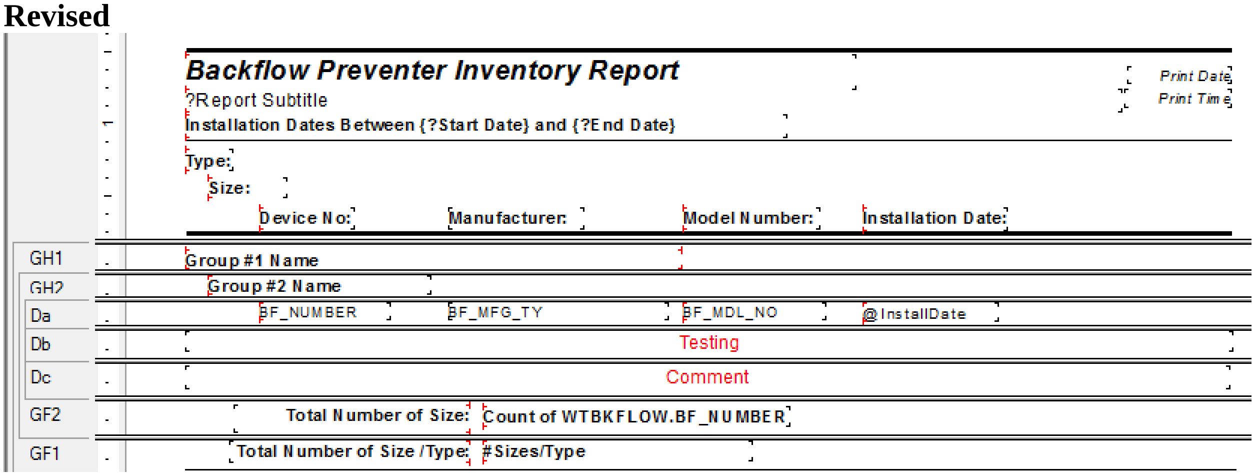
    h. *OK*

    i. Suppress empty sections.

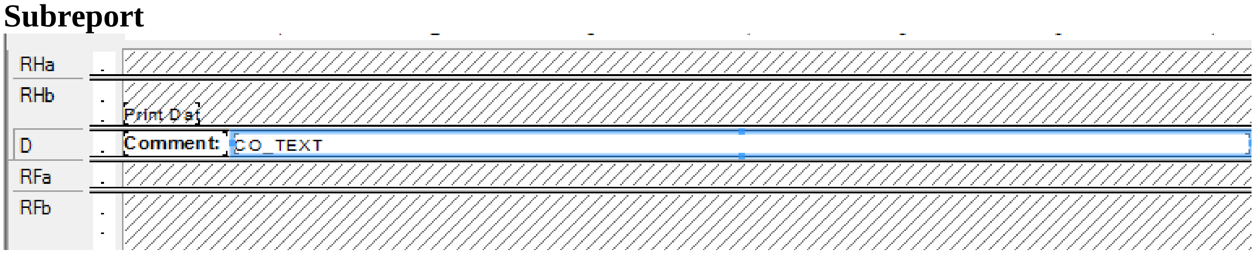
15. In the main report's *Section Expert* click on *Details c* and then click to check the *Suppress Blank Section* option.

16. *OK*

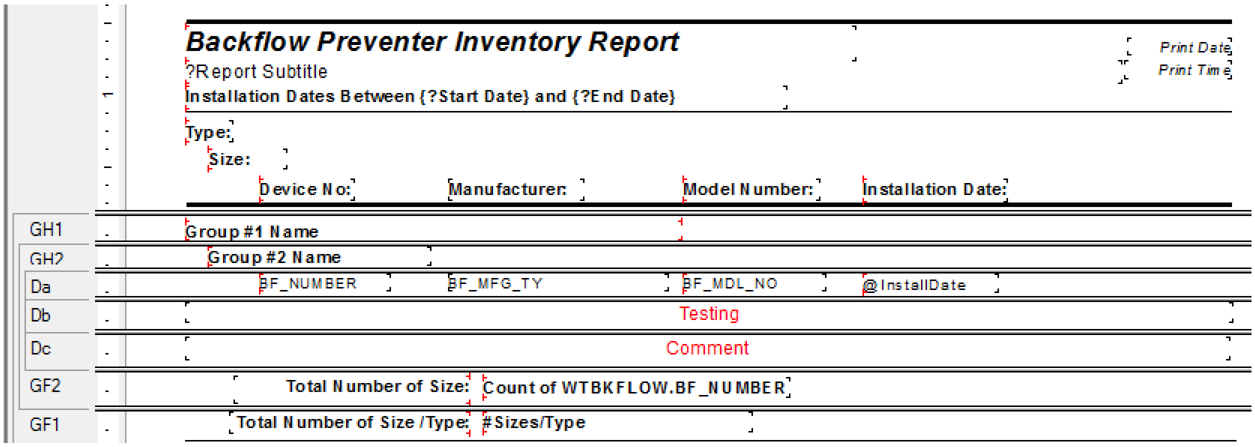
Revised



Subreport



XXI. Example 21



Add a Dated Comment subreport below the Comment subreport in its own section.

<u>Solution</u>

1. From the **Water** Report folder, open **CT_wtbfsumSubComment.rpt.**
2. Add a new *Detail* section under *Detail c*. (***Dd***)
3. Click *Insert Subreport.*
4. Give it a *New report name*. (**Dated Comment**)
5. Click *Report Wizard…*
6. In *Data Source Selection* choose **GBAWater001.** *Finish*
7. Select **WTGDMEMO** in the *Available Data Sources:* and use the arrow (>) to move it to *the Selected Tables:*
8. *Finish* and *OK*
9. Drop the subreport box into the ***Detail d*** section.
10. Format the subreport.
11. Link the subreport by right clicking on it and selecting *Change Subreport Links…*
12. Move the **BF_ID** field to *Field(s) to link to:*
13. In the lower right box select **GM_PAR_ID**. *OK*

14. Open the **Dated Comment** subreport.

   a. In the subreport's Select Expert click *New*.

   b. Click on **GM_PARENT**

   c. *OK*

   d. Use the drop down box to select *is equal to*.

   e. In the right box select the table name, **WTBKFLOW**.

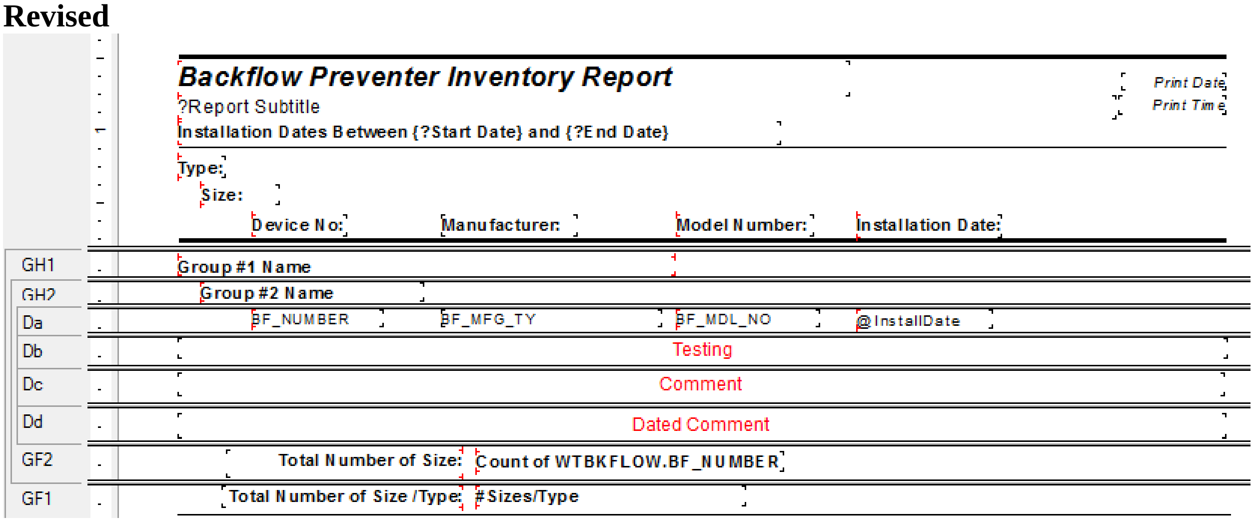
   f. *OK*

   g. Bring in the Column Headers and Fields.

15. In the main report's *Section Expert* click on *Details d* and then click to check the *Suppress Blank Section* option.

16. *OK*

Revised



Subreport