



Creating a Custom Report in Quality Window 5

An example of how you can create a Certificate of Analysis using the data contained in a Quality Window application.

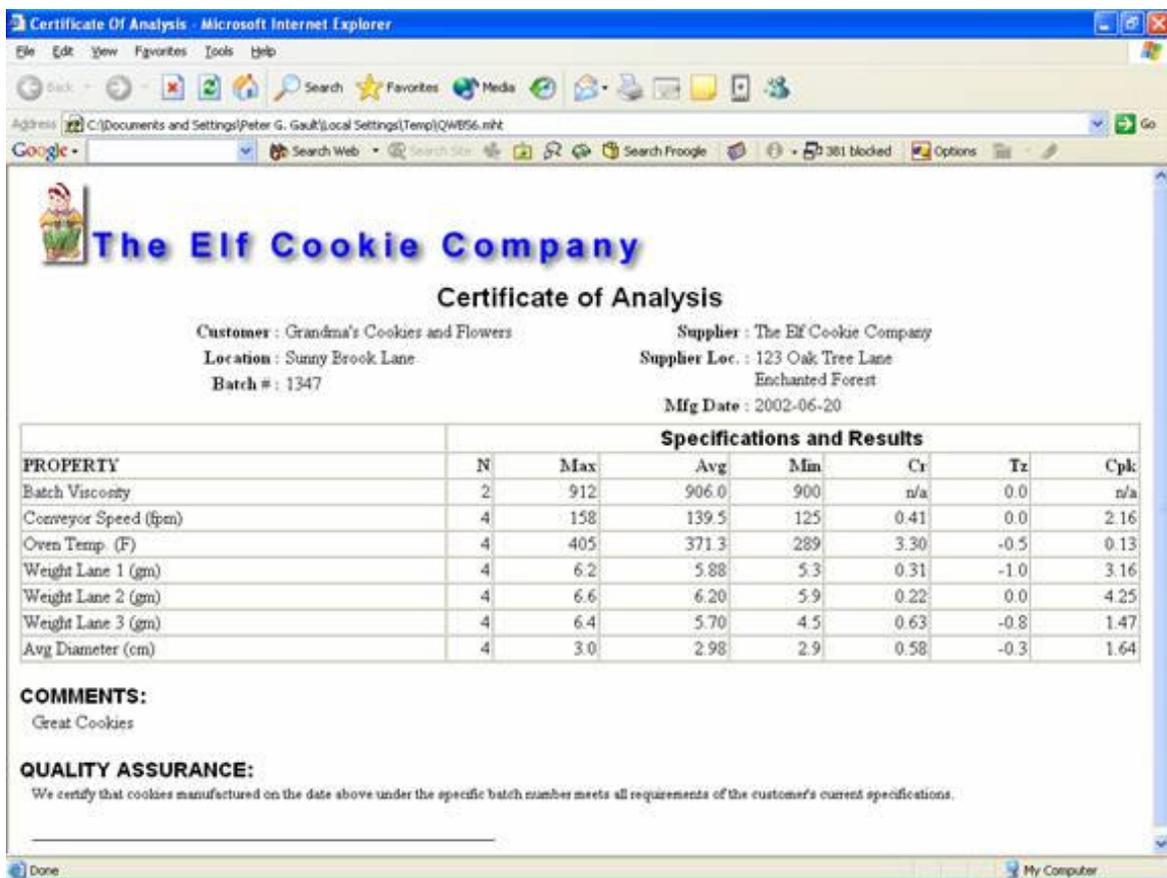
June 2005

Creating Custom Reports in Quality Window 5

The purpose of this document is to provide you with a detailed explanation of how you can produce custom outputs from the data contained in a Quality Window 5 application. This capability supports our view of collecting data once but using it many times.

Creating a Certificate of Analysis

The following is an example of a Certificate of Analysis that was generated using the capabilities found in Quality Window 5 (QW5). The Certificate is based on the example Process Monitoring application that is shipped with the program.



The Elf Cookie Company
Certificate of Analysis

Customer : Grandma's Cookies and Flowers
 Location : Sunny Brook Lane
 Batch # : 1347

Supplier : The Elf Cookie Company
 Supplier Loc. : 123 Oak Tree Lane
 Enchanted Forest
 Mfg Date : 2002-06-20

PROPERTY	Specifications and Results						
	N	Max	Avg	Min	C _r	T _r	C _{pk}
Batch Viscosity	2	912	906.0	900	n/a	0.0	n/a
Conveyor Speed (fpm)	4	158	139.5	125	0.41	0.0	2.16
Oven Temp. (F)	4	405	371.3	289	3.30	-0.5	0.13
Weight Lane 1 (gm)	4	6.2	5.88	5.3	0.31	-1.0	3.16
Weight Lane 2 (gm)	4	6.6	6.20	5.9	0.22	0.0	-4.25
Weight Lane 3 (gm)	4	6.4	5.70	4.5	0.63	-0.8	1.47
Avg Diameter (cm)	4	3.0	2.98	2.9	0.58	-0.3	1.64

COMMENTS:
 Great Cookies

QUALITY ASSURANCE:
 We certify that cookies manufactured on the date above under the specific batch number meets all requirements of the customer's current specifications.

To produce the Certificate of Analysis we employed many of the standard features available in QW5 as well as making use of very powerful customization tool that is built into QW 5 called "Scripting". You create your own "scripts" (mini-little programs) to automate certain tasks. What makes scripting so powerful is that fact that we have granted access to the internal features and formats of QW5 for you to take advantage of.

Even if you are not a professional programmer, you can modify the examples provided to create your own custom output. If you do not want to tackle the job yourself, Busitech can provide you with consulting services to meet your exact needs, on budget and in a very timely fashion.

In this specific example we used Visual Basic Scripting, which is a programming like language that Microsoft has made available to anybody to make use of. This scripting language is what many people use to write a custom MS Excel macro.

A Quick Run Through

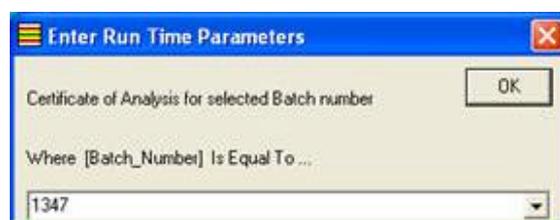
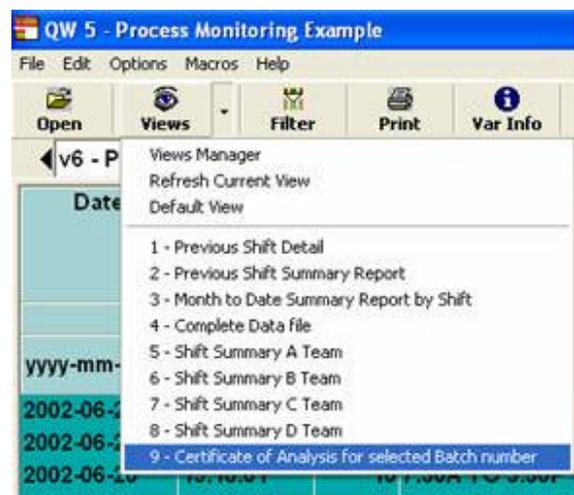
Let's take a quick run through of the steps we would follow to generate the example Certificate of Analysis report as shown above.

First, open Quality Window and select the QW5 Application you wish to use. In this case it is the Process Monitoring Example.

Once the application is open, create a View to collect the information to be contained in the form using the Views Manager. (Information on creating Views can be found in the online help system).

In this case, the View we need already exists, so we simply select the appropriate one.

You will now be prompted for a Batch number. This will filter the data to include just information for the specific Batch Number.



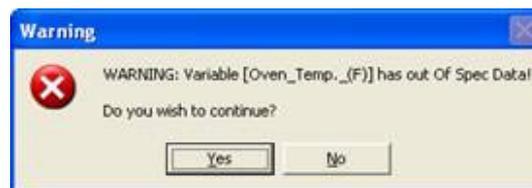
QW5 then displays a report of the data that will be displayed on the custom form for your review. This report form is displayed because it was selected in the definition of the view, typically you might see the Log Sheet displayed.

Date	Time	Batch Viscosity	Conveyor Speed (fpm)	Oven Temp. (F)	Weight Lane 1 (gm)	Weight Lane 2 (gm)	Weight Lane 3 (gm)	Avg Diameter (cm)
2002-06-20	18:18:02	900	136	289	5.9	6.6	6.4	3.0
2002-06-20	19:18:22		139	397	6.2	5.9	5.9	3.0
2002-06-20	20:18:42	912	125	405	5.3	6.2	6.0	2.9
2002-06-20	21:19:00		158	394	6.1	6.1	4.5	3.0
N		2	4	4	4	4	4	4
Max		912	158	405	6.2	6.6	6.4	3.0
Avg		906.0	139.5	371.3	5.88	6.20	5.70	2.98
Min		900	125	289	5.3	5.9	4.5	2.9
Cr		n/a	0.41	3.30	0.31	0.22	0.63	0.58
Tz		0.0	0.0	-0.5	0.0	0.0	-0.4	-0.3
Cpk		n/a	2.16	0.13	3.16	4.25	1.47	1.64

If you wish to proceed and create a Custom Certificate of Analysis form, go to the Macros option at the top of the screen and select the Certificate of Analysis item. All of the items that appear in this list are macros that have been provided as examples of VB Scripts. If you build your own script, and keep it in the main applications folder, then Quality Window will automatically add your macros to this list dynamically each time the program is started..

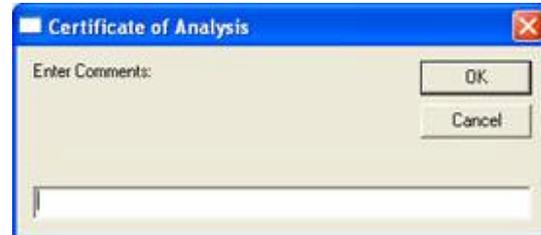


In this example we are using a custom VB script that Busitech has created (Certificate_of_Analysis). This custom script also includes a check that tests data to be included in the form. It checks that data is within the Specification Limits set for each variable in the Process Monitoring QW5 application. If a limit is exceeded then a message such as this will be displayed.

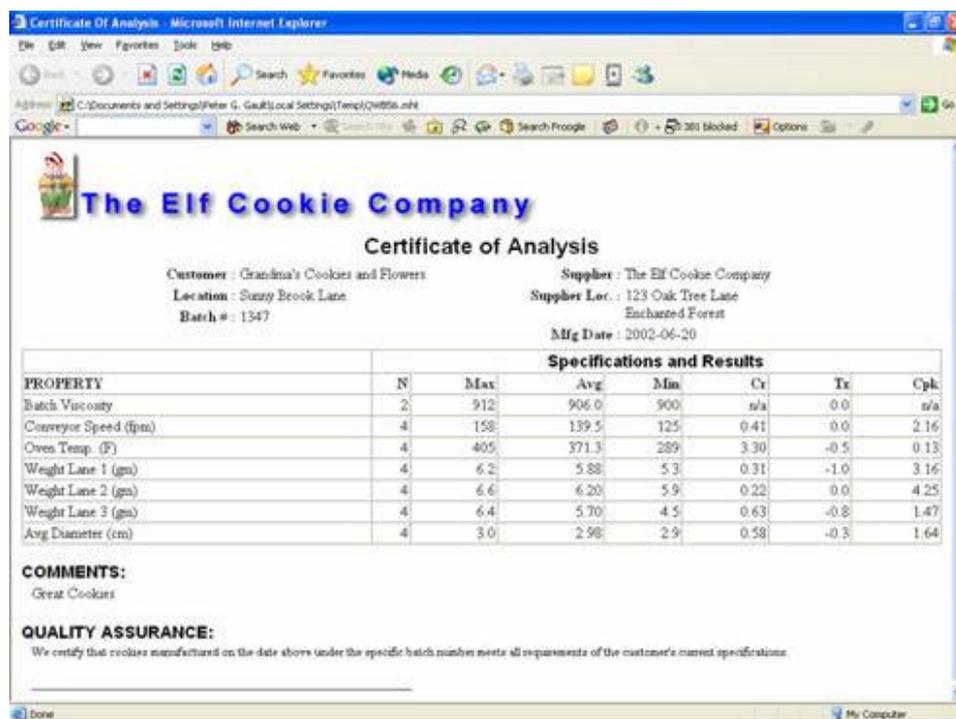


You can select Yes to continue or No to stop the process. This is a very useful verification tool that will help you to identify any problems before a Certificate is created, thereby helping to ensure that the shipment will meet the customer's requirements.

You are then be prompted for additional information that was not available in the QW5 application, but which is required for the Certificate of Analysis. You can add this additional information as comments on the form.



Once you have provided all the additional information the final document will be created as an MHT file (similar to a web page). Your Internet browser (e.g. Internet Explorer) will be launched to display the file. At this point you can Save, Print or E-mail the form using the standard functions available under the File option of Internet Explorer.



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Certificate of Analysis

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 Batch # : 1347

Supplier : The Elf Cookie Company
 Supplier Loc. : 123 Oak Tree Lane
 Enchanted Forest
 Mfg Date : 2002-06-20

Specifications and Results							
PROPERTY	N	Max	Avg	Min	Cr	Tx	Cpk
Batch Viscosity	2	312	906.0	900	n/a	0.0	n/a
Conveyor Speed (fpm)	4	158	139.5	125	0.41	0.0	2.16
Oven Temp. (F)	4	405	371.3	289	3.30	-0.5	0.13
Weight Lane 1 (gm)	4	6.2	5.88	5.3	0.31	-1.0	3.16
Weight Lane 2 (gm)	4	6.6	6.20	5.9	0.22	0.0	4.25
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COMMENTS:
 Great Cookies

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A Closer Look at the Files

The following is an examination of each of the components necessary to create custom forms (such as the Certificate of Analysis example). Using this description as a guide you can modify our example or create your own new custom output.

The main components are the following:

1. A QW5 Application with a View to specify filtering, variable and statistic selection and order.
2. A custom script to capture information from this view, as well as additional information not available in the QW5 application. The script will then take this information and merge it with a specified HTML form.
3. A Company specific HTML form that lays out the document you wish to create. This would include Company specific data like name, address and contact information as well as any company logo(s) you wish to include.
4. An MHT file that is the final result of the exercise.

Let's take a look at each of the 4 components that made up this example. We will start with the HTML form we used to create the output.

QW5 Application with a View

The first step is to create a Quality Window application that will gather the data you need. As most process monitoring applications gather more information than is typically needed in report such as Certificate of Analysis, creating a View will allow you select only the data you need.

Custom Script

A custom script is needed to capture information from the View, as well as collect additional information not available in the QW5 application. The script will then take this information and merge it with a specified HTML form. You can modify an existing script to suit your needs or build one from scratch. You can do so yourself or ask Busitech to create one for you.

You can create or modify scripts using a simple text editor, such as Notepad, or a more sophisticated program specifically designed for the task (such as Visual Basic).

To illustrate the coding involved, we will look at the script used in the example above. Quality Window script files have the extension .QWX. The particular file in question is called Monitor.QWX, can be found in the QWSETUP program under Applications and then selecting the Script tab at the bottom of the screen. There is a section of this file that contains the Certificate of Analysis code that is partially displayed below.

```

MONITOR.qwx - Notepad
File Edit Format View Help
Option Explicit

Sub MENU_Certificate_of_Analysis()
    Dim Qwhtml, Rec, Table, V, S, StatPtr, StatName, StatCount, Parms
    Dim Mfgdate, orderNo, CustomerName, Destination, SupplierName
    Dim SupplierLoc, Comments, BatchNo
    Dim Begvariable, Mfgdatevariable, orderNovariable
    If Qwrep.RecordCount = 0 Then
        MsgBox "No Records in Current view!"
        Exit Sub
    End If
    If Qwselect.CurrentViewName = "" Then
        MsgBox "No View Loaded!"
        Exit Sub
    End If

    -----
    SupplierName      = "The Elf Cookie Company"
    SupplierLoc       = "123 Oak Tree Lane<br>Enchanted Forest"
    Mfgdatevariable   = 1 'First variable of view should be Date
    OrderNovariable   = 3 'Third variable of view should be Order Number
    Begvariable       = 4 'Start of variables to display statistics on
    -----

    'Check for any Out of Spec values before showing CofA
    Dim ObsPPM
    For V = Begvariable To Qwrep.Fields.Count

```

Change these two lines to replace the company name and address displayed in the form

```

SupplierName      = "The Elf Cookie Company"
SupplierLoc       = "123 Oak Tree Lane<br>Enchanted Forest"

```

These below indicate where the script is looking for specific information in the View that you create in QW5 and we will take that into consideration as we create a View for this form.

```

MfgDatevariable   = 1 'First Variable of View should be Date
OrderNoVariable   = 3 'Third variable of View should be Order Number
BegVariable       = 4 'Start of Variables to Display Statistics on

```

These instructions will prompt the user for additional information that is not available from the QW5 application.

```

CustomerName      = InputBox("Enter Customer Name:", "Certificate of Analysis")
Destination        = InputBox("Enter Destination:", "Certificate of Analysis")
BatchNo           = InputBox("Enter Batch Number:", "Certificate of Analysis")
Comments          = InputBox("Enter Comments:", "Certificate of Analysis")

```

These instructions will replace the values captured above in the placeholders created using the percent signs (%) in the HTML file we looked at in Step 1.

```

QWhtml.ReplaceText "%Destination%" , Destination
QWhtml.ReplaceText "%MfgDate%"     , MfgDate
QWhtml.ReplaceText "%OrderNo%"     , OrderNo
Whtml.ReplaceText  "%CustomerName%" , CustomerName

```

```

QWhtml.ReplaceText "%SupplierName%", SupplierName
QWhtml.ReplaceText "%SupplierLoc%", SupplierLoc
QWhtml.ReplaceText "%Comments%" , Comments
QWhtml.ReplaceText "%BatchNo%" , BatchNo

```

The next section of the file builds the table of the Variables, limits and statistics selected in the View for this form.

The last notable area of the script is where names or values from the View are replaced with a more appropriate term before the form is displayed.

```

-----
'Replace any Statistic names with new ones
QWhtml.ReplaceText "V_Units", "Units"
QWhtml.ReplaceText "LV", "Result"
-----

```

HTML Form

The next step is to create a HTML form that is specific to your company and has the look and feel you want for your report.

Again, you can create your own file or modify an existing one. Similar to the scripts above, you can create an HTML file using a simple text editor.

When you installed Quality Window 5, a sample HTML form was saved to Busitech/QW50/Samples directory. The file is called MONITOR.COA. If you were to open it in Internet Explorer, it would like this:



If you open the file in Notepad it will look like this:

```

monitor.htm - Notepad
File Edit Format View Help
<HTML>
<HEAD><TITLE>Certificate of Analysis</TITLE></HEAD>
<BODY BGCOLOR=ffffff>

<IMG SRC="c:\busitech\qw50\samples\monitor.jpg">
<CENTER>
<FONT SIZE=5 FACE="Arial"><B>Certificate of Analysis</B></FONT>
</CENTER>

<CENTER>
<TABLE WIDTH=75%>
<TR>
<TD VALIGN=TOP>
<TABLE WIDTH=100%>
<TR>

```

The text and codes you see in Notepad are written in HTML – (Hypertext Markup Language) and let me point out a couple of lines that you might want to change to customize it for your use.

```
<HEAD><TITLE>Certificate Of Analysis</TITLE></HEAD>
```

This is the heading that appears at the top of the browser window (blue banner).

```
<IMG SRC="c:\busitech\qw50\samples\monitor.jpg">
```

This is a reference to the graphical image of an Elf that you see at the top of the document. You may want to replace this with your company Logo.

```
<FONT SIZE=5 FACE="ARIAL" ><B>Certificate Of Analysis</B></FONT>
```

This is the heading that appears under the logo.

```
<TD ALIGN=RIGHT><B>Customer :</B></TD>
<TD ALIGN=LEFT>%CustomerName%</TD>
```

These entries are used to layout the entries under the heading. You will probably want to change these to meet your exact needs. When you see percent signs around a field like in the case of %CustomerName% this means a value will be placed at that location for Customer Name. This is identified in the Custom Script we have already set up.

The following entries will display the information at the bottom of the form along with the signature line.

```

<FONT SIZE=4 FACE="Arial"><B>QUALITY ASSURANCE:</B></FONT>
<TABLE>
<TR>
<TD VALIGN=TOP>&nbsp;</TD>
<TD><FONT SIZE=2>We certify that cookies manufactured on the date above
under the specific batch number meets all requirements of the customer's current
specifications.
<P>
_____</TD>
</TR>
</TABLE>
```

MHT File

The resulting custom output will be a document in what is called an MHT format that you can print, e-mail or save for future reference. MHT documents are self-contained, meaning all information (text and graphics) are embedded into the one file. MHT files can be read by any Internet Browser (such as Internet Explorer) and are therefore very versatile. For additional security you can also convert the MHT file to a PDF file, provided you have the full version of Adobe Acrobat. PDF files have additional security features that you can implement to prevent people from altering the document once it is produced.

More Information

More information on Quality Window and its associated features can be found on the Busitech website at www.Busitech.com. You can also download a full working version of Quality Window, which includes the stand-alone utility QWSchedule. You can also download QWXL, a charting utility for Microsoft Excel, the world's most popular spreadsheet program.

Alternatively, you can contact the Busitech support team at (613) 938-0900 or by e-mail to support@busitech.com.

