

The purpose of this document is to provide you with a detailed explanation of how you can produce custom outputs based on QW6 Views and VB Scripts from the data collected by a QW6 application.

This capability demonstrates our view of collecting data once but using it many times.

In addition to the method outlined in this document there are two additional options.

- COA's Example based on MS Word
- COA's example based on MS Excel

You can find details of these two methods at this Link:

[Creating Certificates of Analysis with MS Word and MS Excel](#)

# Creating a Certificate of Analysis (COA)

The following is an example of a Certificate of Analysis that was generated using the capabilities found in QW6. The Certificate is based on the example Process Monitoring application that is included in the Example QW6 Applications.

**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	N	Max	Avg	Min	Cr	Tz	Cpk
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 QW6 as well as making use of very powerful customization tool that is built into QW6 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 QW6 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.

# Creating a Certificate of Analysis (COA)

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.

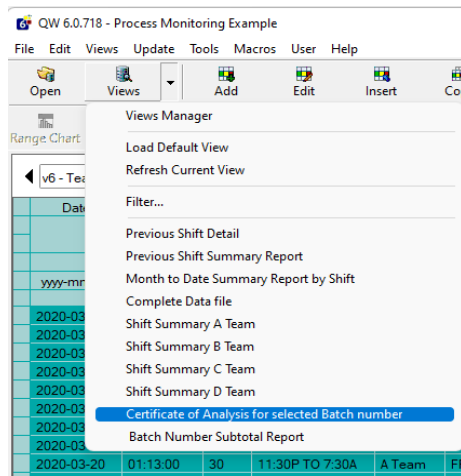
## A Quick Run Through

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

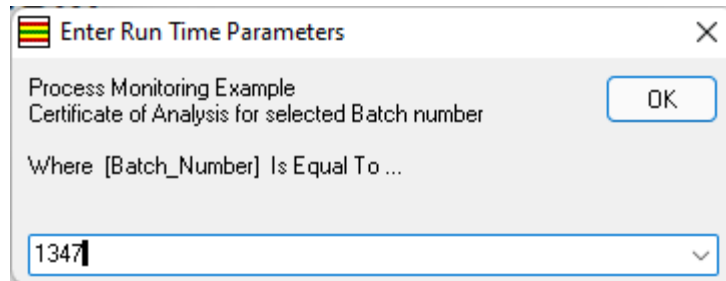
First, open Quality Window and select the QW6 Application you wish to use. In this case it is the Process Monitoring Example.

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.



QW6 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.

# Creating a Certificate of Analysis (COA)

QW 6.0.718 - Process Monitoring Example [Certificate of Analysis for selected Batch number]

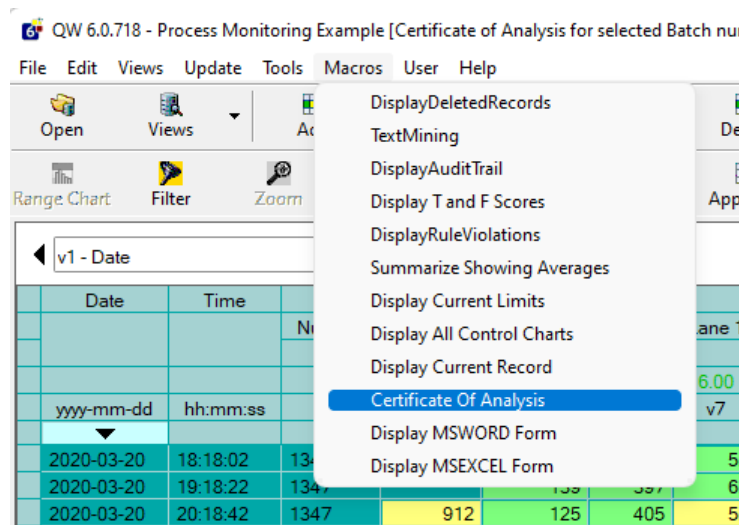
File Edit Views Update Tools Macros User Help

Open Views Add Edit Insert Copy Delete Range Chart Filter Zoom Refresh Var Info Var Help App Help

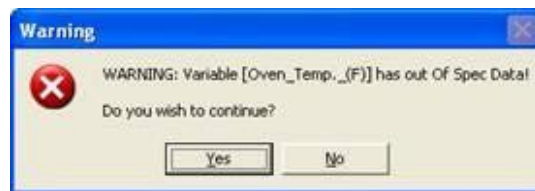
Cookies  
CCC123  
WHERE [Date] BETWEEN '2020-03-10 08:14:28' AND '2020-03-21 09:25:38'  
AND [Batch\_Number] = '1347'

Variable Name	V_Units	USL	TGT	LSL	N	Max Value	Avg	Min Value	Cr	Tz	Cpk	OppmUCI	CppmUCI
V4 - Batch Viscosity	Pa s		900		2	912	906.0	900	n/a	0.0	n/a	n/a	n/a
V5 - Conveyor Speed (fpm)	fpm	250.5	140	50.5	4	158	139.5	125	0.41	0.0	2.01	527129	50631
V6 - Oven Temp. (F)	Deg F	450.1	400	349.9	4	405	371.3	289	3.30	-0.5	0.19	751396	114041
V7 - Weight Lane 1 (gm)	gm		6	2.05	4	6.2	5.88	5.3	0.31	0.0	2.16	527129	25316
V8 - Weight Lane 2 (gm)	gm		6	2.05	4	6.6	6.20	5.9	0.22	0.0	4.26	527129	25316
V9 - Weight Lane 3 (gm)	gm		6	2.05	4	6.4	5.70	4.5	0.63	-0.4	1.96	527129	85237
V10 - Avg Diameter (cm)	cm	3.45	3	2.55	4	3.0	2.98	2.9	0.58	-0.3	2.40	527129	98511

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..



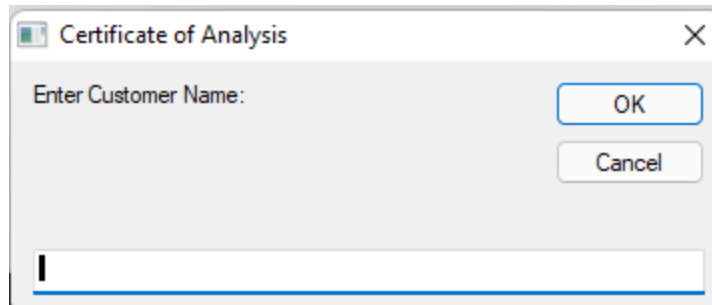
In this example we are using a custom VB script that Busitech has created (Certificate\_of\_Analysis). This custom script also includes a check that tests data to be included in the form. It checks that data is within the Specification Limits set for each variable in the Process Monitoring QW6 application. If a limit is exceeded then a message such as this will be displayed.



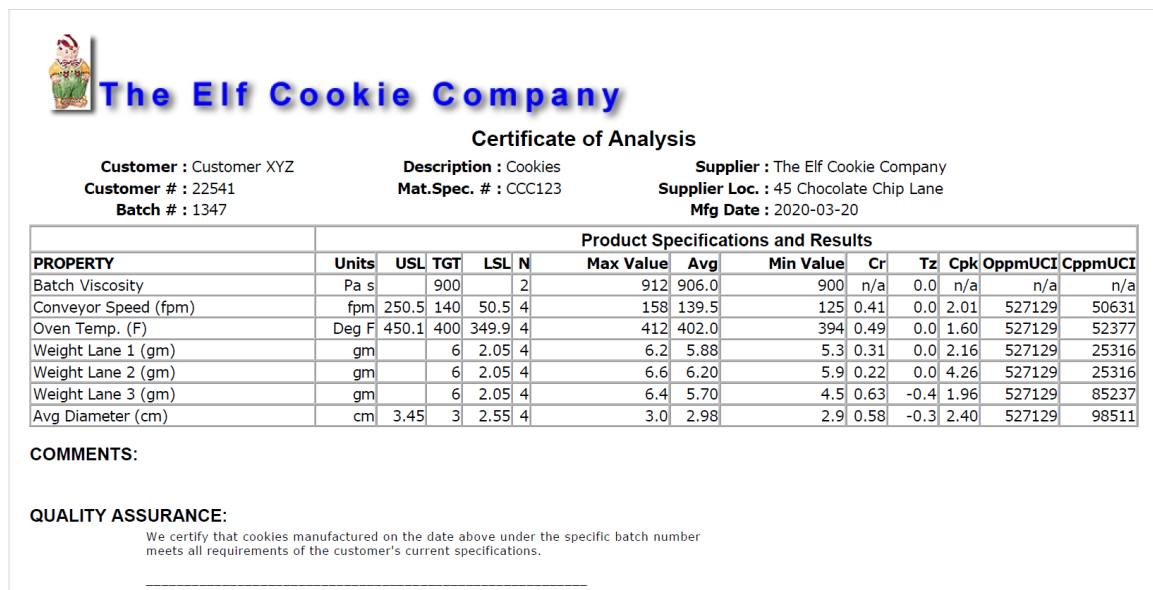
# Creating a Certificate of Analysis (COA)

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 QW6 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 PDF Document. Your default viewer for the PDF document will be launched to display the file. At this point you can Save, Print or E-mail the form.



**The Elf Cookie Company**

**Certificate of Analysis**

**Customer :** Customer XYZ  
**Customer # :** 22541  
**Batch # :** 1347

**Description :** Cookies  
**Mat.Spec. # :** CCC123

**Supplier :** The Elf Cookie Company  
**Supplier Loc. :** 45 Chocolate Chip Lane  
**Mfg Date :** 2020-03-20

PROPERTY	Units	Product Specifications and Results											
		USL	TGT	LSL	N	Max Value	Avg	Min Value	Cr	Tz	Cpk	OppmUCI	CppmUCI
Batch Viscosity	Pa s		900		2	912	906.0	900	n/a	0.0	n/a	n/a	n/a
Conveyor Speed (fpm)	fpm	250.5	140	50.5	4	158	139.5	125	0.41	0.0	2.01	527129	50631
Oven Temp. (F)	Deg F	450.1	400	349.9	4	412	402.0	394	0.49	0.0	1.60	527129	52377
Weight Lane 1 (gm)	gm		6	2.05	4	6.2	5.88	5.3	0.31	0.0	2.16	527129	25316
Weight Lane 2 (gm)	gm		6	2.05	4	6.6	6.20	5.9	0.22	0.0	4.26	527129	25316
Weight Lane 3 (gm)	gm		6	2.05	4	6.4	5.70	4.5	0.63	-0.4	1.96	527129	85237
Avg Diameter (cm)	cm	3.45	3	2.55	4	3.0	2.98	2.9	0.58	-0.3	2.40	527129	98511

**COMMENTS:**

**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.

## 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 QW6 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 QW6 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 PDF 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.

## QW6 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.

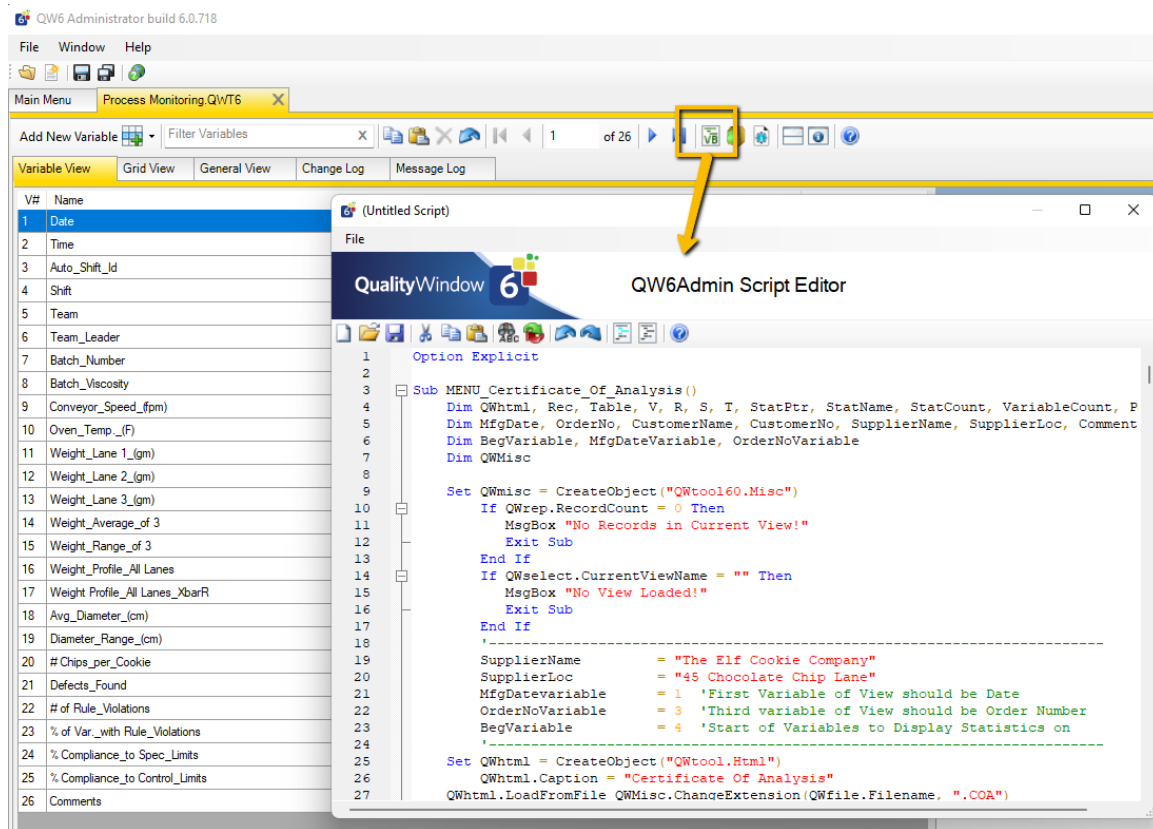
## Custom Script

A custom script is needed to capture information from the View, as well as collect additional information not available in the QW6 application. The script will then take this information and merge it with a specified PDF 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.QWX6. The particular file in question is called Process Monitoring.QWX6, can be found in the QWAdmin module under Applications and then selecting the Script tab at the top of the screen. There is a section of this file that contains the Certificate of Analysis code that is partially displayed below.

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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 QW6 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 QW6 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/QW60/Samples directory. The file is called MONITOR.COA. If you were to open it in Internet Explorer, it would like this:



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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\QW60\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>
```

## PDF File

The resulting custom output will be a document in what is called an PDF format that you can print, e-mailed or save for future reference. 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](http://www.Busitech.com) You can also download a full working 30 day trial version of Quality Window 6.

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