

MSC-LIMS™ *Insights*

The source for news and tips of interest to users of MSC-LIMS,
an affordable laboratory information management system for small labs.

Issue No. 23

February 2015

Welcome

Welcome to **MSC-LIMS *Insights***.

This newsletter will help current MSC-LIMS users get the most out of their software, and will complement the product literature and demo that prospective users can find on our web site at www.msc-lims.com.



Join our mailing list for more information. Sign up at www.msc-lims.com/lims/maillist.html.

This newsletter is for and about MSC-LIMS users. We welcome your comments, and your suggestions for topics you would like to see addressed in upcoming issues. Please send your thoughts to newsletter@msc-lims.com. 

Moving MSC-LIMS to a New Workstation

Follow the simple procedures in this article whenever you need to move an MSC-LIMS installation from one workstation to another. First, open MSC-LIMS, select the System Configuration option on the Admin menu, then review the location of the Workgroup, LimsCode, and LimsData files on the System Info tab. The LimsCode file should be on the workstation's local hard drive. If the Workgroup and LimsData files reside on a server, make a note of their location. A default single-user MSC-LIMS installation places all files in folder C:\MSC-LIMS but your installation may have placed them on the server. The Workgroup file LimsUser4.mdw contains your LIMS login names and passwords and the LimsData file LimsData4.mdb is the main LIMS database.

```
Version: 4.0.0 for Microsoft Access
Last Updated: 3/6/2013 2:00:00 PM
Compiled: Yes
Runtime: Yes
Access Version: 14.0
Access Directory: C:\Program Files\Microsoft
Profile: MSC-LIMS
Command Line:
Workgroup: D:\LIMS\LimsUser4.mdw
LimsCode: C:\MSC-LIMS\LimsCode4.mde
LimsData: D:\LIMS\LimsData4.mdb
Workstation Licenses: 1
Subscription Expires: 31-Dec-2015
```

Exit MSC-LIMS and copy the entire C:\MSC-LIMS folder from the old workstation to the new one via a server folder or flash drive. In a single-user installation, the C:\MSC-LIMS folder should include a Setup folder with the installation software. In a multi-user installation, the Setup

folder should be found in the LimsData server folder. On the new workstation, run Setup.exe in the Setup folder to install and make sure to specify the location for the LimsData database if it resides on the server. The new installation will not overwrite an existing LimsData file. 

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From the Developer

I often find myself presenting the many benefits of MSC-LIMS' integrated Excel interface to prospective users. I reassure potential customers that they can create custom reports using Excel templates and they have complete control over the appearance of their reports. Of course, the Excel interface can also be used to log samples from Excel data, calculate and import final results, and import final results from instrument data files. The Excel interface works the same for either MSC-LIMS license type, so Annual Subscription licensees have many options to extend the system's capabilities without customizing through the purchase of a Full System license.

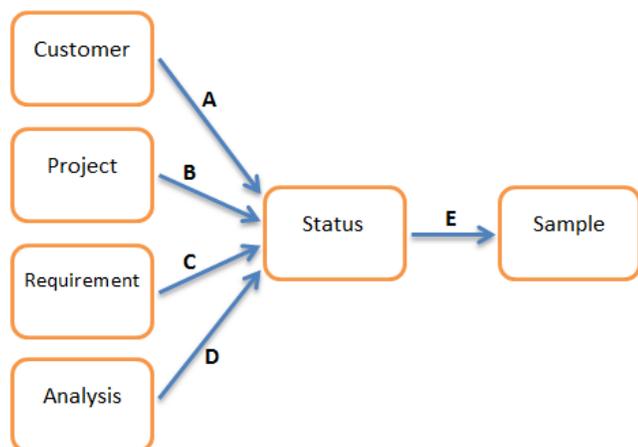
Recent user requests to summarize LIMS data have highlighted the importance of another important Excel tool. The MSC-LIMS Data Query workbook, which has existed for over a decade, is a general-purpose tool for querying LIMS data. We recently collected some of the data queries we have provided customers over the years and updated this valuable tool. See "Updated MSC LIMS Data Query Workbook Now Available" in this issue for more information. I hope you find the MSC-LIMS Data Query workbook a valuable addition to your MSC-LIMS resources.



Rick Collard is the founder of Mountain States Consulting, LLC and the principal developer of the MSC-LIMS software. You can reach Rick by email at rcollard@msc-lims.com.

Understanding Analysis Costs

If your lab bills customers for its services, you can maintain analysis costs (i.e. prices) within MSC-LIMS and generate sample invoices using one of the example Excel invoice templates. Understanding when and how analysis costs are assigned to a sample is important to properly configure MSC-LIMS. The final cost assigned to an individual sample analysis may originate in the configuration data for the customer, project, requirement, or analysis and it may be altered by the sample's status as the following diagram illustrates.



Let's look at each of the labeled paths in the diagram above to understand how costs are assigned to a sample. Note that the diagram's paths also define the order of precedence. For example, a customer-specific analysis cost will be assigned bypassing a project, requirement, or analysis configured cost. In all screens where costs are configured, separate options exist to specify the cost when the analysis is performed in-house or when the analysis is sent out to a contract lab.

Default	Cost	When Sent Out	
		Default	Cost
\$7.16	\$9.00	\$10.00	\$13.00
\$7.16	\$9.00		

A. Customer. A customer's assigned analysis costs take precedence over any other configured costs. Use the Costs tab of the Customers setup screen to assign specific costs for any analysis for a customer. If a sample has an associated customer, MSC-LIMS will first check if any of the sample's analyses have a cost defined for the sample's customer when it assigns a sample's analysis costs.

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Use the Default Analysis Cost Multiplier field to apply discounts or premiums to all analysis costs not obtained from the customer's costs. That is, the multiplier is applied to any sample costs obtained from the project, requirement, or analysis.

B. Project. Use the Costs tab of the Projects setup screen to assign a specific cost for any of the project's analyses thereby overriding the analysis' default cost. If a sample analysis does not have either a customer or a customer-specific analysis cost, MSC-LIMS will check the sample's project for a cost. This process occurs in two phases. First, if an analysis cost exists in the sample's project for the sample's location this location-specific analysis cost is assigned. Otherwise, if a default analysis (i.e. a project analysis with no location) cost exists within the sample's project, that cost is assigned. In either case, if the sample's customer has a Default Analysis Cost Multiplier it is multiplied by the project's analysis cost and the result is assigned.

C. Requirement. Use the Costs tab of the Requirements setup screen to assign a specific cost for any of the requirement's analyses thereby overriding the analysis' default cost. If a sample analysis does not have a customer- or project-specific analysis cost and the analysis was added to the sample via a requirement, MSC-LIMS will assign the requirement's analysis cost if specified. If the sample's customer has a Default Analysis Cost Multiplier it is multiplied by the requirement's analysis cost and the result is assigned.

Consider using a requirement when you charge a different price for a group of analyses than the sum of the individual analyses' default costs. Create and add an internal-data auto-complete analyte to the requirement with a cost for the entire group then set the cost of the requirement's remaining analyses to zero. Note that this technique can also be used with projects.

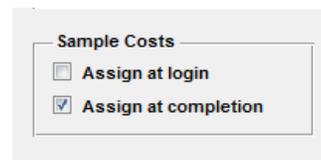
D. Analysis. Use the Analyses setup screen to define a default cost for any analysis. If a sample analysis does not have either a customer-, project-, or requirement-specific cost, MSC-LIMS assigns the analysis' default cost. If the sample's customer has a Default Analysis Cost Multiplier it is multiplied by the analysis' default cost and the result is assigned.

E. Status. Finally, MSC-LIMS will multiply the cost obtained from any of the steps above by a multiplier defined for the sample's status and assign the result. Use the Sample Statuses setup screen to adjust costs for your own service types or turnaround times. For example, if you charge a 50% premium for a 48-hour turnaround, create a "48-Hour" status with an analysis cost multiplier of 1.5.

Sample Statuses		Sample Login Default:	
Sort Order	Name	Multiplier	
		Cost	Warning Days
▶ 10	Normal		
20	Rush		2
30	Immediate		999
40	24-Hour	2	999
50	48-Hour	1.5	999
*			

The steps above describe how costs are assigned to each analysis in a sample. This process can occur either when the sample is logged, completed, or both. Use the options on the Miscellaneous tab of the System Configuration screen to specify when costs are assigned. Assign costs at login, for example, if you need to generate invoices before samples are completed.

Costs assigned to a sample remain permanently with the sample so you can change configured costs at any time for future



Sample Costs

- Assign at login
- Assign at completion

samples. Use the Edit Sample Costs screen on the Admin menu to modify any costs that may have been incorrect when they were applied to the sample. Use caution with the Edit Sample Costs screen if you have enabled assigning costs both at login and completion. In this case, if you edit an incomplete sample's costs after login any changes will be lost when costs are reassigned after the sample is completed.

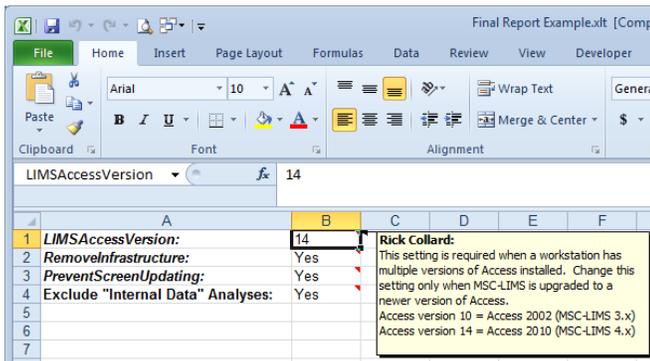
Finally, use the Edit Analysis Costs screen on the Admin menu as an alternate way to view and edit the analysis default costs (from the Analyses setup screen) and the customer-, project-, or requirement-specific costs from the Costs tab on their setup screens.

MSC-LIMS offers considerable flexibility to configure sample analysis costs. Understand when and how costs are assigned and you can put this valuable feature to work when billing your clients. 

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Check your Excel Template's LIMSAccessVersion

If you began using MSC-LIMS prior to version 4.0 and you use Excel templates in your implementation, it is likely that one or more of your templates include a LIMSAccessVersion setting. An improper value for the LIMSAccessVersion option in the template's Settings worksheet may cause unexpected errors or incomplete exports to the template. Occasionally a template with an incorrect LIMSAccessVersion setting will work properly on one workstation but will fail on another.

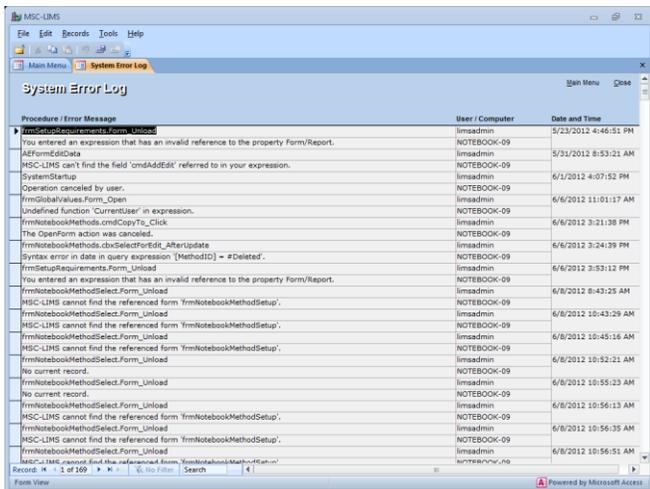


When you export an MSC-LIMS report to an Excel template, in some cases only part of the report's data is actually exported to Excel. Some Excel templates, such as those designed for the Sample Summary report, query the LIMS for additional data. To perform the query, Excel must establish communication with the LIMS. The LIMSAccessVersion setting identifies the internal version number of the Microsoft Access version used by MSC-LIMS. The Excel template's macro uses the Access version number to locate the running instance of MSC-LIMS, which is particularly important on workstations that may also be running other versions of Microsoft Access.

We recommend checking all of the Excel templates you use regularly. If the template includes the LIMSAccessVersion setting, make sure it is set to the correct Microsoft Access version number, which is 10 for MSC-LIMS 3.x and 14 for MSC-LIMS 4.x. ▲

Clean Up your Error Log

MSC-LIMS' error log maintains a record of all system error messages along with the current user and workstation at the time of the message, and the date and time the error occurred. The error log helps the LIMS administrator and technical support personnel troubleshoot recurring problems.



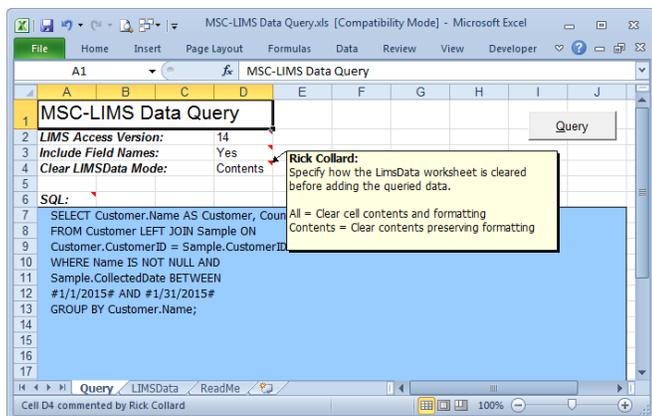
While even thousands of error log records will occupy only a fraction of the overall size of an MSC-LIMS database, consider deleting older records when they are no longer of any use. Before deleting records, preview then save to PDF a copy of the Error Log report on the Admin menu to preserve a history.

Use the Error Log screen option on the Admin menu to open the system error log. Click and drag along the record selectors at the left of the screen to select multiple records then use the Delete key to delete. Consider saving the Error Log report to PDF then deleting all system error log records after upgrading to a new MSC-LIMS version. Remember to compact your LimsData database after deleting a large number of records. ▲

Updated MSC LIMS Data Query Workbook Now Available

With MSC-LIMS' integrated Excel interface you can quickly export the data from any MSC-LIMS report to Excel. When the data you need cannot be easily gathered using an existing report, the MSC-LIMS Data Query workbook is the solution. With this general-purpose Excel tool, you can add LIMS data from any Structured Query Language (SQL) Select statement directly into Excel.

To retrieve LIMS data simply start MSC-LIMS on your workstation, open the workbook, enter a valid SQL Select statement on the Query worksheet then click the Query button to add the data to the LIMSData worksheet. In practice, you will find it simpler to save each SQL Select statement you commonly use to its own renamed copy of the workbook. Save your copy of the workbook as an Excel template file and you can just double-click the template in Windows Explorer to create a new workbook for your queried data without altering the original template.



We recently updated the MSC-LIMS Data Query workbook with new settings on the Query worksheet. Use the "Include Field Names" option to enable or disable adding field names for the queried data to the first row of the LIMSData worksheet. With "Clear LIMSData Mode" set to "Contents" you can preserve your own column formatting when queried data is added to the LIMSData worksheet.

The workbook's ReadMe worksheet now includes examples of SQL Select statements requested by MSC-LIMS users. Data returned by these example SQL Select statements include:

- Customer sample count for a collected date range
- Customer sample count by week for a collected date range
- Active customers with no samples for a login date range
- Total amount billed by customer for a completion date range
- Total number of samples and total amount billed by customer for a completed date range
- Total number of samples, total amount billed, and average amount billed per sample by customer for a completed date range
- Project sample count for a login date range
- Analysis count for a sample login date range
- Analyses by month for a sample login date range
- Number of analyses in each project
- Project analysis specifications that differ from default analysis specifications

See [Query Data with the MSC-LIMS Data Query Workbook](#) in the Knowledge Base for more information and download file [MSC-LIMS Data Query.xls](#) from the File Library to get started with this valuable tool. 

Notes from Technical Support

PDFCreator 1.7.3 or Older for MSC-LIMS Messaging

A user sending client reports automatically with MSC-LIMS Messaging recently wrote:

PDFCreator installed a new update and now my results will not send.

PDFCreator has changed its interface for external applications in its most recent versions, which have not been tested with MSC-LIMS Messaging. For this reason, we recommend remaining with a working version of PDFCreator and turning off its automatic updates on your MSC-LIMS Messaging workstation. If PDFCreator installed a version newer than 1.7.3, uninstall PDFCreator then use the link on this page (<http://www.pdfforge.org/pdfcreator/download>) to download and install PDFCreator 1.7.3. Next, turn off automatic updates in PDFCreator using Printer | Options then select General Settings 2 and set the check updates option to "Never". ▲

AnalysisResultFormatted and AnalysisResult Fields in Excel

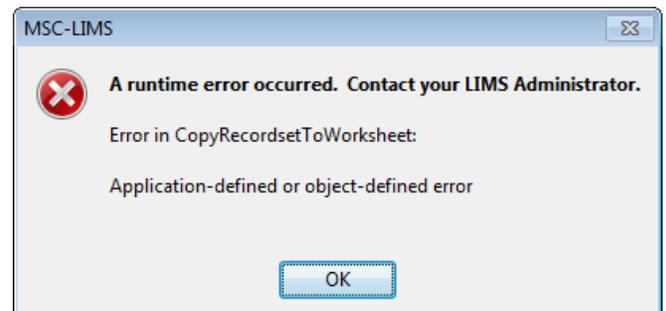
The AnalysisResultFormatted and AnalysisResult fields found in Excel templates that display analytical results can be a source of confusion. When do you use one vs. the other?

The AnalysisResultFormatted field contains text strings representing the data seen in the Report column on MSC-LIMS' results entry screens. While the data may appear to be numeric, it is always text since a formatted result may be a text-based result type, combination of result value and result type, or a result value formatted by rounding to decimal places or significant figures.

The AnalysisResult field is numeric and only contains the result value. Always use the AnalysisResult field in your templates when you need to perform calculations or your own rounding with the LIMS' analysis result value. ▲

Strange Date Confounds Excel

A user exporting a Sample Summary report to her Excel final report template encountered this error message:



The template had been working fine and rebooting the workstation had no effect. Exporting the same Sample Summary report to other templates including the generic MSC-LIMS Export Template also produced the same error message, which suggested the problem was with Excel.

After carefully reviewing the samples on the Sample Summary report, an oddity was found. One sample had a collected date with its year erroneously set to 114. After changing the sample's collected date, the export to the template worked normally. Excel's standard date handling does not accommodate years prior to 1900, which is the likely cause of the error. ▲

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For Customers Only

This section of *MSC-LIMS Insights* is devoted to current users of MSC-LIMS. Here we briefly introduce only the most recent additions to MSC-LIMS.com Customers Only pages. Use your login name and password to log on to the Customers Only section of our website.

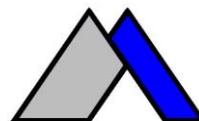
File Library

[MSC-LIMS Data Query.xls](#)

This Excel workbook is a general-purpose tool used to retrieve any MSC-LIMS data using an SQL Select statement. Use this workbook when the data you need cannot easily be obtained by exporting an MSC-LIMS report's data to Excel. See "Updated MSC LIMS Data Query Workbook Now Available" for more information. 

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