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.

Welcome

Welcome to *MSC-LIMS Insights*. If you are already an MSC-LIMS user we hope this newsletter will help you get the most out of your software. Our goal is to keep you informed about the system's ongoing development and to show you where we are headed.

If you are considering MSC-LIMS for your lab, we hope you find that the newsletter complements the product literature and downloadable demo you can find on our web site at www.msc-lims.com.

If you received this newsletter from a colleague, visit our web site and sign up to receive your own copy of future issues as they are released. Our mailing list signup form is located at www.msc-lims.com/lims/maillist.html.

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

New User's Guide Includes *Quick Start* for Beginners

The User's Guide bundled with MSC-LIMS 3.0 includes a new Chapter Two, called *Quick Start*. *Quick Start* accompanies the new user on a painless tour of the LIMS, taking the mystery out of the system and introducing the highlights of day-to-day data entry and reporting.

Written by an MSC-LIMS novice, for novices, *Quick Start* eschews programmer's jargon in favor of a relaxed pace and friendly tone. Using a "here's what you do next and here's why" approach, *Quick Start* walks the user through a series of examples, taking each example to its logical conclusion. Topics include configuring the system, logging a series of typical samples, using query controls and printing a Work Order, entering test results, printing Reports, and preparing a Customer Invoice.

Loaded with Notes, Tips and techniques, and including numerous hyper-linked cross-references to the User's Guide text, *Quick Start* is a valuable tool to all users of MSC-LIMS. Whether you are the first in your lab to log on to a spanking new MSC-LIMS installation, or the new guy in a lab with an established MSC-LIMS, *Quick Start* could be the beginning of a beautiful and productive relationship.

In This Issue

MSC-LIMS™ *Insights*

From the Developer

MSC-LIMS 3.0 is off to a great start. Released in June, it has been well received in new installations and by the many version 2.x sites who have already upgraded (see "Users Welcome Version 3.0"). We love hearing from you so let us know what you think as you settle in with the new version.

This summer's *MSC-LIMS Insights* presents news and tips we have been accumulating since January. Our feature article ("Simplify Queries with SQL Expressions") offers users a chance to save common queries using the SQL language. New problem-solving techniques ("Copy Only Subtotals in Excel"), insider information ("What are the L-nnn Identifiers in the Release Notes?" and "Customers Only") and recent industry-wide exposure ("In the News: MSC-LIMS Developer Shares a *Laboratory Solution*") are guaranteed to inspire.

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

In the News: MSC-LIMS Developer Shares a *Laboratory Solution*

The front page of *Water Environment Laboratory Solutions*' June/July 2004 issue is dedicated to an article entitled Do-It-Yourself Automated Mass Readings. Penned by Rick Collard, the article describes how lab personnel can interface standard lab instruments with an Excel spreadsheet.

The article uses A&D Weighing and Mettler Toledo balances as example instruments, and provides step-by-step instructions for importing the balance data directly into the designated spreadsheet cell. Written in the user-friendly style of Rick's **Notes from Technical Support – Interface Instrument with Excel** in the January 2004 issue of *MSC-LIMS Insights*, the article is concise and the procedure is easy to follow. With screen captures at each step, the article encourages even the skittish to streamline their data entry processes.

If you want to experiment with the techniques offered, use this link to the article on our website:

http://www.msc-lims.com/download/Do-It-Yourself%20Automated%20Mass%20Readings.pdf

Users Welcome Version 3.0

Version 3.0 became available to MSC-LIMS licensees in mid-June, 2004, and the response has been universally positive. The new version's features include a number of revisions that are designed to lower the total cost of ownership: new Microsoft Office-independent installation software, new customization features, streamlined distribution of software updates, and new XML configuration files.

One of the more significant changes in MSC-LIMS 3.0 is the system's installation software, which we developed to overcome conflicts with various Microsoft Office installations. Common problems with Microsoft Office and its components include making multiple versions coexist and breaking existing installations with newer installations.

The new version's installation software completely isolates MSC-LIMS 3.0, preventing any conflicts with Microsoft Office installations. It installs cleanly on any workstation regardless of the version of Office already installed. Future installs, reinstalls, uninstalls, or upgrades of Office will have no affect on MSC-LIMS 3.x, greatly simplifying system installation and administration. As with previous versions, neither Microsoft Office nor Microsoft Access is required to run MSC-LIMS 3.0.
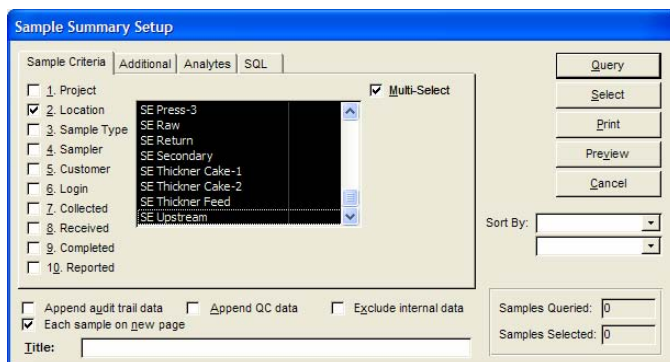
Simplify Queries with SQL Expressions

Structured Query Language (SQL) is an industry standard language used to query and manipulate data in relational databases. Behind the scenes, MSC-LIMS uses SQL extensively. When you query data using the query-by-example (QBE) controls, MSC-LIMS constructs an SQL SELECT statement to locate the data in the LimsData back end database.
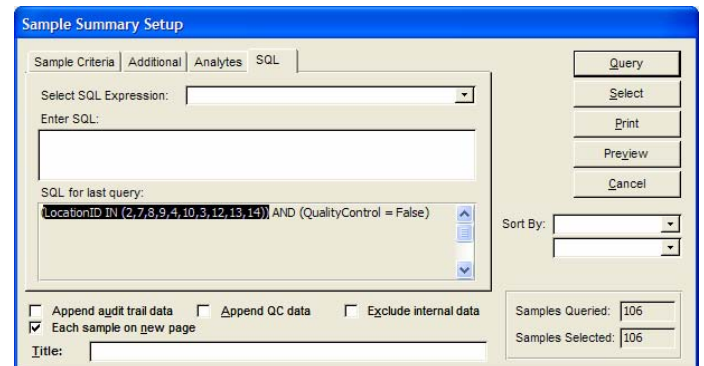
Even if you are unfamiliar with SQL you can still use MSC-LIMS' SQL expressions to simplify your queries. If you frequently enter the same criteria in the QBE controls, you can save time and simplify future queries by saving your criteria as an SQL expression. You can repeat your query by selecting the saved SQL expression.

An example is a good way to demonstrate the power of **customized** SQL expressions. The Sample Summary Setup dialog below shows how users at a county with multiple wastewater treatment plants frequently query data for their southeast plant by selecting all locations for the plant. For simplicity, they have used a location naming convention which results in contiguous selections in the sorted list.
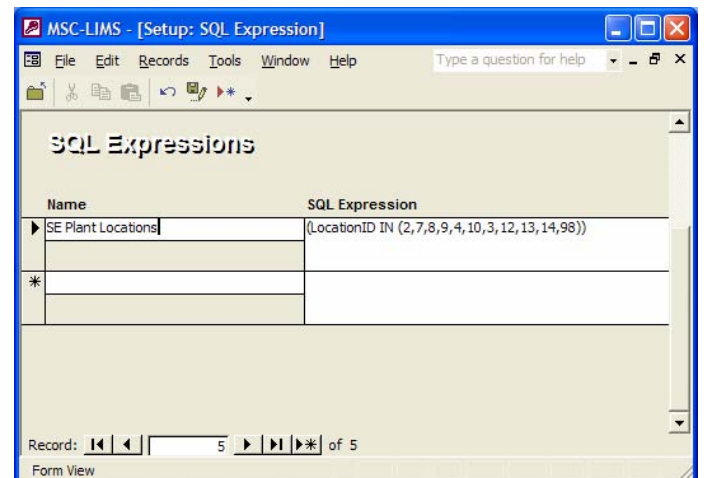

Repeatedly selecting the southeast plant locations is somewhat cumbersome and it is very easy to inadvertently omit one or more locations. You can use an SQL expression to avoid these problems and simplify the query.
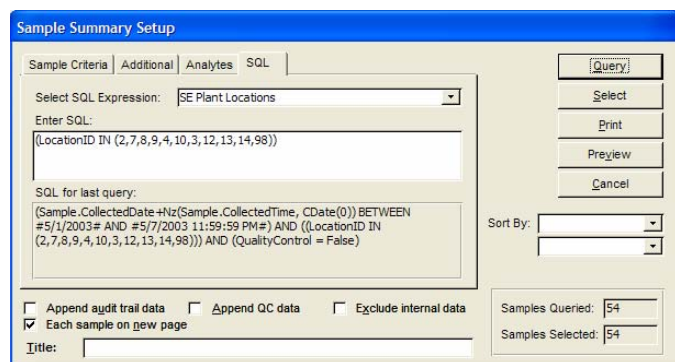
To create the SQL expression, first use the QBE controls to construct the query. For now, omit any criteria that will vary with each query such as date ranges. Click the [Query] button and MSC-LIMS will build the SQL SELECT statement from your criteria and execute your query. Click the SQL tab of the query controls and the SQL expression for your query will be listed in the "SQL for last query" field. Now select the entire SQL expression or the portion of the expression you wish to save. In our example shown below, we have selected the part of the expression representing our location criterion. Use Ctrl+C to copy the selected text to the Windows clipboard then click the [Cancel] button to close the dialog.

To save your SQL expression, open the SQL Expressions screen on the MSC-LIMS Setup menu. In the blank new record enter an appropriate name for your expression then use Ctrl+V in the SQL Expression field to paste your expression.

Now that we have saved an SQL expression for the southeast plant locations we can use the expression whenever we need that criterion in a query. To use a saved SQL expression, simply select the expression on the SQL tab of the query controls. In addition to your SQL expression, you can enter any other query criteria using the QBE controls. The screen below shows the results of a query using our southeast plant locations SQL expression along with a collected date range that was entered using the QBE controls on the Sample Criteria tab.

In our example above, the SQL expression "(LocationID IN (L1, L2, … Ln))" requires that the sample's location, represented by the internal LocationID value, must be one of the locations in the list of values. By using the internal ID values instead of the location names, MSC-LIMS is able to construct the fastest query possible. This is a good solution in this case since the list of southeast plant locations will rarely change. However, it is important to note that our expression must be updated whenever the southeast plant location list changes.

Alternatively, we could use a slower but more flexible SQL expression to find samples with a location name beginning with "SE": (LocationID IN (SELECT LocationID FROM Location WHERE Name LIKE 'SE*')).

Give SQL expressions a try and we are sure you will find useful ways to put them to work in your frequently used or complex queries.

Notes from Technical Support
Copy Only Subtotals in Excel

If you have ever used Excel's subtotals feature (Data | Subtotals) you know how handy it can be to summarize data. For example, MSC-LIMS' example sample tracking templates use subtotals to create a concise sample backlog report.

But what do you do if you need to copy just the data in the subtotal rows on the workbook? An MSC-LIMS user posed that question, and we discovered that Excel's "Visible cells only" option provides the solution. You can use this Excel feature in a one-time copy and when you want to automate the process in an export template's AfterTransferFromLIMS macro.

To see the problem and its solution, first preview a Sample Tracking report in the LIMS. (Hint: Use the "All" incomplete analyses option and check the "Incomplete samples" option on the Additional tab to query all incomplete analyses). Export the Sample Tracking report to one of the example sample tracking templates. Without expanding the outline on the Report worksheet, select all of the cells in the collapsed outline,

then use Ctrl+C to copy the cells. Click a column A cell below the outline and use Ctrl+V to paste the copied data and you will see that all of the data including the hidden rows is copied. Use Edit | Undo Paste or Ctrl+Z to undo the paste.

Now reselect all of the cells in the collapsed outline, then use Edit | Go To..., click the [Special...] button and choose the "Visible cells only" option. Use Ctrl+C to copy the cells. Click a column A cell below the outline and use Ctrl+V to paste the copied data, and this time you will see that only the subtotal rows (i.e. visible rows) were copied.

It is also simple to perform this operation in a template's macro. After macro code selects the outline cells to copy, the following VBA statement will change the selection to only the visible cells:

```
Selection.SpecialCells(xlCellTypeVisible)
.Select
```

Add this technique to your bag of Excel tricks and you, too, can manipulate Excel data like a pro.

What are the L-nnn Identifiers in the Release Notes?

If you have ever wondered about the significance of the L-nnn identifiers (L-#) that are listed in the Release Notes that accompany each new version of MSC-LIMS, here's an overview of their purpose. With any complex and long-lived software development project such as MSC-LIMS, tracking bugs and requests for new features is an important product maintenance task.

We use commercial bug and feature tracking software to help us manage the complexity inherent in the software development process. Each bug report and feature request we receive is logged into the tracking software, which automatically assigns a unique and sequential L-#. The "L" designates a LIMS tracking number since we can use the tracking software for more than one software project. Just like the sample ID in MSC-LIMS is a unique identifier for the sample, the L-# uniquely identifies the bug or feature tracking record.

Every LimsCode and LimsData form, report, module, query, and table object has been registered in the tracking software. When a bug is fixed, a record of the changes are entered in the tracking software and each affected LimsCode or LimsData object is linked to the tracking record. We also add the L-# in the revision history comments in code modules in the LimsCode front end software to document the changes. During development and troubleshooting we use the L-# to quickly retrieve the tracking record and view all affected objects. We can also select an individual object in the tracking software and view all linked tracking records for a complete history of the changes to the object.

The L-#s are our way of assuring that your reports of a bug or requests for a new feature are documented, reviewed, prioritized, tracked, and do not fall through the cracks.

Customers Only

This section of *MSC-LIMS Insights* is devoted to current users of MSC-LIMS. Use your login account to access our website to review the following topics:

Knowledge Base

How to Update Template References for MSC-LIMS 3.0
Summary: If any of your MSC-LIMS workstations either now have or in the past have had multiple versions of Microsoft Access, and you have Excel export templates that query the LIMS for additional data such as those used with the Sample Summary report, you may need to update the template's references to work correctly with MSC-LIMS version 3.x. This article provides step-by-step instructions to update the Excel template so it correctly queries the Access 2002 database used with MSC-LIMS version 3.0.

File Library

MSC-LIMS Analyses.xlt
Export MSC-LIMS' Analyses report to this template to create inhouse, sent out, internal data, and inactive analyses lists from the report's data. See the template's ReadMe sheet for details. If you have upgraded to MSC-LIMS 3.0 you will find this template in the Examples\Excel Export Templates folder where you installed MSC-LIMS.

MSC-LIMS SysCfg Options.doc
Have you ever wondered what the Options tab on the System Configuration screen is used for? Beginning with MSC-LIMS version 2.3, the Options tab supports special configuration options and is also used for site-specific customization features. For example, you can configure the columns displayed in any sample selection pick list with appropriate settings. This document lists all of the options currently supported.

Discussion Forum

Version 3.0.0 Bugs
Since software development is a complex process (see "What are the L-nnn Identifiers in the Release Notes?" this page), as much art as it is science, bugs are inevitable. Fortunately, the bugs discovered to date in MSC-LIMS 3.0 are only minor and most have quick fixes listed under this Discussion Forum topic. Be sure to check this topic if you discover an anomaly.

MSC-LIMS™ *Insights*

MSC-LIMS Annual Subscription for $500

Dateline Jackson, Wyoming, March 22, 2004 – Mountain States Consulting, LLC, announces a significant reduction in the cost of its annual subscription license to $500 per user per year for the complete MSC-LIMS system. The new subscription price heralds the June 2004 release of MSC-LIMS version 3.0, an Access 2002-based version. Annual subscriptions are available for both standalone and multi-user configurations, and technical support and version updates are included throughout the subscription period.

The annual subscription provides a complete non-source code version of all MSC-LIMS software including MSC-LIMS Archiving and MSC-LIMS Messaging. MSC-LIMS' integrated Excel interface extends the system's capabilities with custom reporting, data importing, and instrument interfacing without the need for customization.

Users Welcome Version 3.0

MSC-LIMS staff has been diligently assisting licensees in their system upgrades. But site-specific customizations are now easier to develop and maintain. Version 3.0 isolates customizations and provides "hooks" to add custom features, such as newly dedicated screen real estate for custom fields, replaceable system reports, and event models to alter standard system behavior or add unique business rules. System administrators can use these streamlined capabilities to apply future MSC-LIMS version updates without reapplying customizations.

Automatic updates allow system administrators to distribute updated MSC-LIMS software to all LIMS workstations. To maintain workstation stability in environments with a locked down Windows registry and to enable user-specific roaming settings in Terminal Services or Citrix installations, workstation configuration settings are now saved in XML files instead of the problematic Windows registry.

Contact Us

Questions, comments, suggestions?
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