

## ENTERING RESULTS

Work logged into the system during Job Registration is immediately available for entry of results of analysis by laboratory staff with a range of Results Entry methods provided to accommodate individual laboratory operational requirements.

In practice, it is quite common to use a range of these methods depending on the type of analysis being performed. For example a given Job Registration may download some results from instrumentation, import of results from a pro-forma Excel Spreadsheet, require manual entry of results for given tests in Test Worksheets or entry of results across a range of tests for all samples in a given Job Registration.

### Methods of Results Entry

Lims1 provides a range of options for entry of Results of Analysis including...

- **By Job Registration:** Enter of all results for a specific Job Registration.
- **By Test Worklists:** Enter results for individual Tests across a range of Job Registrations.
- **Laboratory Instruments:** Import results and data from Laboratory Instruments.
- **MS-Excel Spreadsheets:** Import results and data from Excel.

### Results Entry by Job Registration

A Spreadsheet Matrix of Tests and Samples is used for entry of results for a given Job Registration. Printed copies of Job Worksheets are available for distribution into the laboratory.

Reference: EX0002		Procedure: TWASTE-E		
Seq	Description	Units	Sm#1	Sm#2
1	pH		7.3	6.8
2	Suspended Solids	mg/L	478	157
3	Total Organic Carbon	mg/L	44	23
4	Biochemical Oxygen Demand	mg/L	12	15
▶ 5	Total Oil and Grease	mg/L	255	[NT]

### Results Entry by Test Worklists

Results entry by specific Tests across a range of Job Registrations. Printed copies of Test Worklists are available for distribution into the laboratory. LIMS Results are entered into a spreadsheet as shown below.

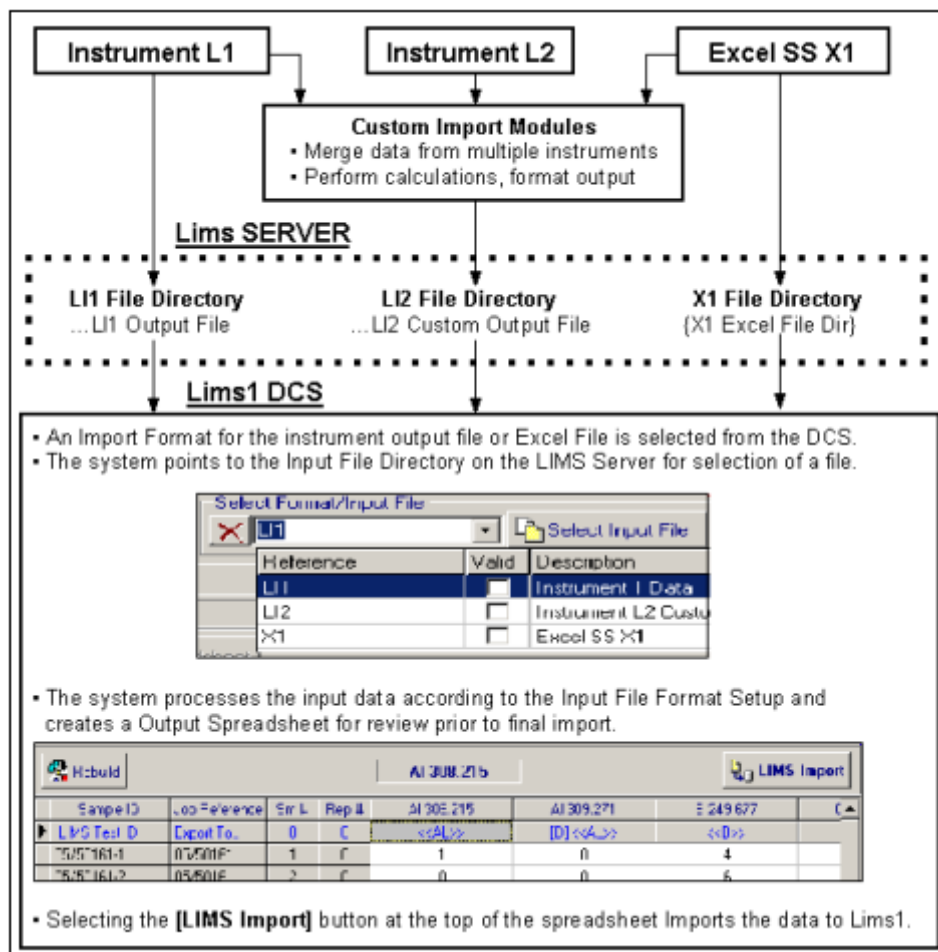
New Worklist	Worklist	Enter Results	Approve Results				
Reference	Sample Description	Due Date	Sm#	Rep	Status	Result	
J01/0019	TX 404	29/05/2004	1	0	Entered	7.3	
J01/0019	TX 451	29/05/2004	2	0	Entered	7.3	
J01/0029	TPQ 1037	02/03/2004	1	0	Entered	7.1	
T001	XRP01	06/03/2004	1	0	Entered	7.7	
T001	XRP02	06/03/2004	2	0	Entered	7.5	
T001	XRP03	06/03/2004	3	0	No Entry		

## Results Entry from Laboratory Instruments and Excel

Import of results from Laboratory Instruments is provided by the Lims1 Data Capture System (**DCS**).

The DCS Module provides a single application which may be used to import results data from any number of LIMS Compliant Laboratory Instruments, Excel Spreadsheets or other data file types directly into the core Lims1 system. Intermediate spreadsheets are provided to review input and output data prior to final data transfer. Results data is also checked and verified during the import process.

For each type of instrument or spreadsheet an Input Data Format is established based on the format and style of the data received from the instrument. These formats are used to convert data received from the instrument into a standard output format used to transfer the data into the Lims1 database.



During the import process to Lims1 the DCS checks and validates data imported. Any results data which has not been imported is flagged on the Output Spreadsheets and an Error Status Log is created.

## Results Entry Checking and Formatting

Prior to use, all results to be entered into the system are established as Tests in Lims1 Setup Tables under a Test Library. A Test may be established for entry of results as a Number, Text or as a Formula Calculation based on a range of linked Test results used as variables within a defined equation.

Each Library Test is provided with a range of Test Parameters which are used to check and format entered results as well as identification, methods unit descriptions and other parameters.

## Numeric and Calculation Results Checking and Formatting

When a result is entered for a Numeric Test the following result checking and formatting rule may be applied...

Test Parameter	Use
Description	Description of Test used during Results Entry.
Report Label	Description of Test used on Laboratory Reports.
Units	Result Reporting Units.
Upper Entry Limit	Maximum acceptable value for the result.
Lower Entry Limit	Minimum acceptable value for the result.
Upper Pass Limit	Maximum acceptable Pass Value for the result.
Lower Pass Limit	Minimum acceptable Pass Value for the result.
Precision	Report to Number of Decimal Places.
Significant Figures	Report to Significant Figures based on result value.
Lab Group	Laboratory Group responsible for the analysis.
Instrument Reference	Instrument Codes used for importing results.

### Checking Entry Limits

Results above the Limits are flagged as 'Out of Range'.

Results below the Limits may be automatically converted to "< *Lower Entry Limit*" for reporting purposes.

### Checking Pass Limits

Results above or below Limits are flagged as 'Fail'.

### Text Results Entry

Results entered for a Text Result Tests can be linked to Lookup Lists for selection of required text.

Text results can also be flagged as Pass/Fail based on the text entered.