

Global Mining Leader Implements LIMS to Support ISO 17025



Aspiring to satisfy the criteria for laboratory accreditation, Anglo American Research Labs (AARL) searched for an ISO 17025 “ready” LIMS. During a STARLIMS User Group Conference, Deborah-Ann van Geelen of AARL described how, STARLIMS aided in automating the lab to conform to ISO 17025 standards.

AARL are a division of Anglo American plc, a global mining company. AARL has five laboratories namely Geochemistry, Analytical, Ore Characterization, Mineralogy and Environmental, which have distinctive but different workflows. The laboratories analyze samples from various sources and provide detailed reports on the composition of the samples. ISO/IEC 17025 Laboratory Accreditation is the criteria for laboratories to demonstrate the technical competence to carry out specific test methods; generate valid calibration data, test results, and operate an effective quality system. This highly regarded and stringent quality system ensures that the company’s testing is repeatable and reliable with equipment traceable to national standards and conducted by qualified personnel. ISO 17025 applies to any quality or research organization that wants to assure its customers of its precision, accuracy and repeatability of results.

The STARLIMS Project at AARL was initiated in 2001 to replace various standalone solutions such as Microsoft®'s Access and Excel and to meet ISO 17025 standards. STARLIMS follows the laboratory workflow at every step.

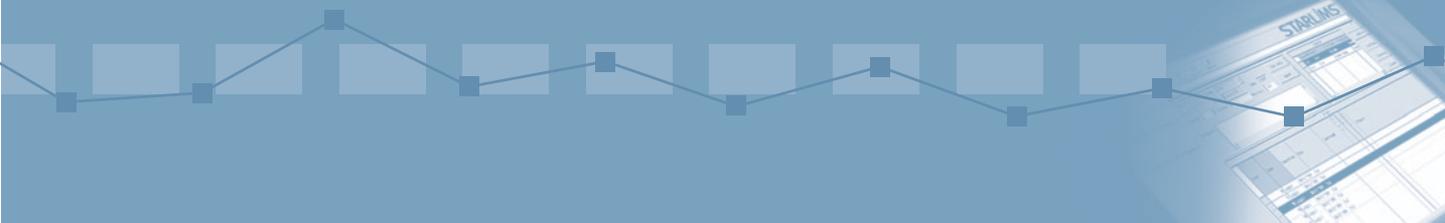
It communicates with analytical equipment, schedules laboratory work, equipment maintenance, and staff training, making policy enforcement, data integrity, and traceability an easy reality.

Sample Login and Run Creation

Samples are received and checked against the Clients Analytical Request Form and logged into STARLIMS. Labels are printed, followed by a batch report which is checked against the Form eliminating errors. To reduce data capture error there is a move to barcodes and automated upload of sample names. Catch weights using balances are connected to STARLIMS and are used before and after sample prep as a check. STARLIMS was configured to accommodate the assorted sample login methods of the laboratories to enhance productivity. Validations have been added to ensure accuracy with regard to material and sample types.

QC samples are added to a preparation run and follow through to the Analysis run. A system to allocate trays to worksheets is used to schedule work within the laboratories ensuring streamlined processes are included. External worksheets enable samples to be sent for external quality checks and using the Data Capture Unit results are imported into STARLIMS for comparison.

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Results Entry and Instrument Integration

Most instruments have been integrated with STARLIMS for upload and download reducing user error and promoting efficiency. The Mineralogy laboratory for example, utilizes STARLIMS' document tracking facilities as analyses are based on the detailed interpretation of reports rather than numeric results.

Approval and Reporting Procedures

Quality control charts built into the worksheet application enable the analysts to check progress per worksheet and make adjustments as needed. Reports are produced using Crystal or Excel. Worksheets are based on ISO 17025 requirements and have macro's which format the reports according to clients requests. STARLIMS provides a central point for users and management to extract information as and when it is needed. Dynamic reports have been developed using queries within STARLIMS and can be extracted by client, project and dates. Quality charts are produced on a daily/weekly/monthly basis and given to clients as required.

Quality Control

5-10% of all samples are sent to external laboratories for result verification. STARLIMS captures the results allowing a comparative analysis and assuring accuracy. Quality reports are generated using dynamic queries developed in STARLIMS. The Thompson Howarth Method is used to evaluate replicate pairs. Clients are able to view sample trends as soon as the analysis has been completed and approved, enabling process decisions to be made timelessly.

Advantages Achieved

STARLIMS makes it possible for AARL to accommodate the individual laboratory processes and create an overall streamlined procedure while reducing overall operating costs and providing means of user accountability and process traceability.

"In South Africa we have a popular slogan *Simpler, Better, Faster!* STARLIMS has achieved this for AARL" summarized Deborah-Ann van Geelen.

STARLIMS Corporation delivers cost effective, easy-to-use collaborative Laboratory Information Management Systems (LIMS) to organizations in the public health, pharmaceutical, petrochemical, forensics, food & beverage, environmental and chemical industries. Full featured and highly flexible our multilingual LIMS solution provides complete traceability leading to regulatory compliance, without compromising process versatility.

A 15 year track record has earned us recognition for "future proofing" our customers' investments and serving as a platform for new implementations and straightforward conversions of legacy systems.

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