SAMPLE MASTER®

LABORATORY INFORMATION MANAGEMENT SYSTEM

Technical Proposal for Iowa Department of Agriculture & Land Stewardship

Prepared for Ken Discher

7/19/2016

Accelerated Technology LABORATORIES INC.

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West End NC 27376

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Microsoft GOLD CERTIFIED Partner

SGS

July 19, 2016

Ken Discher
Department of Administrative Services, Central Procurement and Fleet Services Enterprise
1305 E Walnut Street, Hoover Bldg., Level 3
Des Moines, IA 50319

Reference: Online LIMS System RFP 1216009012

Dear Mr. Discher:

Accelerated Technology Laboratories, Inc. (ATL) is pleased to present Iowa Department of Agriculture and Land Stewardship with our proposal of a Laboratory Information Management System (LIMS).

ATL was founded in 1994 in the Silicon Valley and has continued to develop our LIMS solutions to meet the needs of the agriculture industry through an understanding of organizational requirements, knowledge of industry trending, and continued investment in research and development.

In 1994, ATL launched its flagship product, Sample Master®, designed to meet most needs right out of the box thanks to its modularity that adapts as organizations grow or change. Sample Master® is installed in over 500 clients' facilities globally, helping companies stay competitive through increased efficiency, regulatory compliance, and improved data quality and customer satisfaction.

Key features that support IDALS requirements include:

- User Dashboard and EDD Creator
- Result Point®, a LIMS Kiosk which allows customers to access their data securely via the Internet
- iMobile Application to support operations away from the laboratory
- Sample Master® is NELAC and 21 CFR Part 11 compliant
- A library of over 450 different instruments integrated with our LIMS solutions.
- All Clients receive superior technical support and hands-on training.

ATL products can be rapidly implemented to meet IDALS timeline, and your investment is backed by outstanding customer service, comprehensive training programs, and responsive, live technical support.

This proposal addresses the specific attributes and performance criteria that are provided in the Iowa Department of Agriculture and Land Stewardship RFP document. ATL acknowledges receipt of Addendum 1 and Addendum 2. Answers and any clarifications to this RFP have been received by ATL.

ATL's proposal shall remain valid for 160 days after the closing date of the receipt of the proposals.

Clarifications
Laura Lee Williford
Director, Sales & Marketing
496 Holly Grove School Rd, West End NC 27376
P. 910-673-8165 | F. 910-673-8166
lwilliford@atlab.com

Negotiations/Contracts
Christine Paszko, PhD
Vice President, Sales & Marketing
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cpaszko@atlab.com

If you have questions or require additional information, please call me at (800) 565-5467.

Thank you,

Christine Paszko, Ph. D.
Vice President, Sales & Marketing
Accelerated Technology Laboratories, Inc.

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Attachment #4
Response Check List

RFP REFERENCE SECTION	RESPONSE INCLUDED		LOCATION OF RESPONSE
	Yes	No	
3. Six copies of the Bid Proposal	X		
3. One (1) Public Copy with Confidential Information Excised (if applicable)		X	Not Applicable
3. Transmittal Letter	X		Technical Proposal Page 2
3. Executive Summary	X		Technical Proposal Page 6
3. Vendor Background Information	X		Technical Proposal Page 16
3. Experience	X		Technical Proposal Page 17
3. Personnel	X		Technical Proposal Page 18
3. Terminations	X		Technical Proposal Page 26
3. Acceptance of Terms and Conditions	X		Technical Proposal Page 28
3. Certification Letter (Attachment #1)	X		Technical Proposal Page 38
3. Authorization to Release Information (Attachment #2)	X		Technical Proposal Page 40
3. Firm Proposal Terms	X		Technical Proposal Page 8
1. Cost Proposal (Attachment #5)	X		Cost Proposal Page 4
4. Mandatory (Pass/Fail) Specifications	X		Technical Proposal Page 9
4. Scored Technical Specifications	X		Technical Proposal Page 35

Executive Summary

Iowa Department of Agriculture and Land Stewardship is seeking a comprehensive LIMS to support their microbiological and chemical analysis performed in the IDALS sub laboratories including: Pesticide, Animal Feed & Fertilizer, Dairy, and Meat & Poultry programs. The completed solution should provide data management in a single database, support integration with business systems across the organization, streamline business processes and improve productivity. Sample Master® provides advanced features including method management, mobile sample login and chemical inventory administration that support Iowa Department of Agriculture and Land Stewardship in managing testing for the Animal Feed & Fertilizer program.

Benefits of Sample Master® include:

- ✓ Facilitates compliance with ISO 17020/17025
- ✓ Integration with current Iowa Department of Agriculture and Land Stewardship required reporting systems
- ✓ Sample and workload scheduling
- ✓ Supports automation of laboratory analytical and business rules
- ✓ Enhanced business analytics via configurable dashboards
- ✓ Ad-hoc and automatic reporting capabilities for samples, projects and management summaries
- ✓ QA/QC built into the system, including charting

Sample Master® offers a flexible, configurable approach tailored to each laboratory's specific business needs and downstream operations. This approach translates into a lower total cost of ownership and expeditious deployment.

- **Sample Master®** LIMS Result Point® secure web portal will enhance communication across the organization and facilitate decision support in addition to providing a means to organize and store every report that is generated by the laboratory. Result Point® uses industry standard encryption to ensure that all data and reports are secure, and only those with privileges and user profiles are able to access the portal.
- **Sample Master®** iMobile application provides support for portable data entry via Tablets and Smart Phones, allowing field collectors and those away from the laboratory bench to upload data in real time directly into Sample Master® via Wi-Fi or 3G/4G data connection. Data from the field, including electronic chain of custody, collector information, date/time stamps, GIS coordinates and more are encrypted and transmitted securely to the laboratory, assimilating seamlessly into Sample Master®.

ATL has provided LIMS solutions for companies and laboratories that are ISO 17020, ISO 17025, EPA and NELAC certified. Our data management products utilize open architecture and intuitive screens; while providing out of the box functionality that accelerates implementation. ATL's LIMS solutions are designed to grow with your laboratory.

ATL has over two decades of expertise in LIMS solutions for the agricultural industry, and has migrated data from Excel, Access and most commercial LIMS to ensure clients will not lose any of their historical information.

ATL understands that the Iowa Department of Agriculture and Land Stewardship intends to integrate current instrumentation in order to facilitate regulatory compliance, increase efficiency, eliminate redundant data entry, and decrease overall costs. Sample Master® also supports ADALS future plans to include their Pesticide, Dairy and Meat & Poultry programs.

Sample Master® will improve user accuracy and reduce redundant data entry to facilitate expedited handling of data and reporting. Sample Master® offers a refreshing new take on user interface design that adopts core elements of Microsoft Office and introduces an innovative tabbed document feature

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that makes it easy to work between multiple files and projects, with numerous filtering options.

What sets us apart in the industry?

- **Commitment to your long-term success –** ATL is committed to the success of the project and your solution beyond the implementation project. For us, go-live is just a milestone in the life of your Sample Master® based solution; it marks the beginning of its service working for you.
- **Tailored systems out of the box –** the ATL solution can be used to meet the needs of your organization, exactly as they are today. Additionally, Sample Master®'s flexible configuration tools allow your solution to grow with your organization as your organization grows and your needs change.
- **Practical solutions –** ATL believes in finding practical solutions to workflow and information management requirements. Most of our employees have worked in organizations similar to yours and understand the everyday pressures to produce more, with fewer resources while maintaining a very high quality of work. We do not automate processes just because we can. We look for ways to improve the work lives of your employees while increasing the quality of their work and ensuring compliance to your regulatory standards.

ATL strives to remain market driven which ensures that we future-proof our customer's investments. We have a disciplined practice of listening to our customers and prospects. Our customers regularly submit requests for enhancements or agree to collaborate on a case study about how certain workflows saved them time, made their operations efficient, and removed certain bottlenecks. We hold user group meetings several times a year aligned with many shows and conferences. These meetings help us learn what our customers wish for as enhancements and new evolving functionality.

Why agricultural laboratories choose us:

A) To secure the futures of their labs by:
   - Reducing Support and Training Costs –
     - ATL's GOLD support offers added benefits
     - Boot Camps provide hands-on training and networking opportunities for our user community.
     - ATL posts training videos via YouTube for access to training at any time
   - Sample Master® provides proactive alerts to prevent delays in decision making for laboratory leaders
   - Better Communication and Decision Making – Laboratory management and staff remain informed of backlogs, bottlenecks, pending actions and approvals.
   - Achieve Enterprise-wide Interoperability – Standard Web Services help integrate with web applications, ERP and MRP systems, including seamless interface with SAP.
   - Open architecture allow for integration with other enterprise systems like ERP or accounting software.

B) Highly configurable and feature-rich solutions that address the workflows of most laboratories out-of-the-box
   - Reduce the time to return on their LIMS investment
   - Minimize the implementation costs for the project
   - Greatly diminish the learning curve for the lab personnel, which increases adoption rates and decreases transition time

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ATL in brief:

- ✓ **People** – ATL is staffed with diverse, multidisciplinary service matter experts to support successful implementations and allow us to consistently improve our methods and processes. Employee development is fostered through a collaborative, intellectually challenging work environment that emphasizes mutual respect, leadership, and calculated risk-taking.
- ✓ **Commitment** – we have NEVER dropped support on any of products in the 20+ year history of ATL. We have never abandoned any of our customers.
- ✓ **Superior Support** – through the ATL Metals Program, we offer the most complete support to our clients with ATL Platinum and ATL GOLD support packages, with unlimited toll-free support and dedicated account managers.
- ✓ **Excellent, Comprehensive Training** –ATL University offers additional courses for end users and administrators and provides web based and on-site training in addition to as video tutorials and one-on-one training sessions.
- ✓ **Ergonomic Software** – Easy to use software that fits the client workflow, including configurable screen captions, number formats and the ability to change field names, hide columns, rearrange columns, and to set custom colors so laboratories can match their work flows.
- ✓ **Focus on Quality** – We work hard to ensure that organizations have solid LIMS and data management tools, and ATL's quality system ensures that we are continually evaluating and improving ATL's processes and procedures to ensure our client's success.
- ✓ **Technology** – ATL's Research and Development Group has invested in the latest technology to ensure that we can provide our clients with the best and most stable LIMS and laboratory automation products to provide safe and secure data management.
- ✓ **Track Record –** ATL has been automating data management for over twenty years, helping thousands of users simplify their daily work. ATL team members have worked hard to develop the ATL Advantage Program, which has contributed to our reputation for excellence.

Your investment with ATL:

We will work with you from investment in ATL's solution to LIVE production to ensure an efficient and cost-effective transition to your laboratory process management. This proposal addresses the specific attributes and performance criteria that are provided in the Iowa Department of Agriculture and Land Stewardship RFP document.

ATL has read, understands and agrees with the terms and conditions of the RFP including the contract provisions in Section 6. We have provided a detailed timeline, project references and project management approach within the mandatory sections of the Online LIMS System RFP 1216009012 response.

We look forward to working with you to meet your laboratory and information management goals. We believe that Sample Master® is an excellent fit for Iowa Department of Agriculture and Land Stewardship and that we can successfully fulfil the requirements as detailed in Online LIMS System RFP 1216009012. The few items not currently available out of the box may be developed via customization for an additional fee.

Sonja Stutsman
Account Manager

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Section 4.1 MANDATORY SPECIFICATIONS	Yes (Pass)	No (Fail)	Line Items that Contain a (*) Requires Documentation or Explanation	Vendor must describe or provide documentation/explanation for how the system meets the noted specification
The LIMS application software must be a standard product that is fully developed, tested, and supported.	X		*	ATL developed Sample Master® in 1994, as the first Windows-based LIMS solution. Our ISO 9001 certification requires a quality management plan that includes testing and validation of our software. ATL's support team has extensive experience and is available M-F from 8AM – 5PM via a toll-free number. The Sample Master® LIMS product line is a complete and total data management solution. It is comprised of feature rich modules to assist with data management and laboratory operations. Modules include Sample Tracking, Data Entry, Sample Scheduling, QA/QC, Electronic Data Transfer, Chemical Inventory, Resource Management, Customer Relationship Management and LIMS Maintenance. The modularity allows our customers to purchase only the modules that are required. Modules can be added, allowing for expansion as the laboratory grows. ATL's LIMS software products are designed to grow with your laboratory and promote Good Laboratory Practices (GLP).
The LIMS application software must be implemented in a regulatory agricultural laboratory setting.	X		*	ATL's Sample Master® LIMS is implemented in several regulated state agricultural laboratories, including Delaware and Oklahoma.
The LIMS application software must permit on-site configuration and generation of application related programs including displays, tables and reports using application tools.	X		*	Sample Master® was created with end users in mind. Users can easily incorporate new screens, report forms, queries, pull-down menus, macros and modules. The unique design allows users to create custom reports, new forms and functions without losing any upgrade ability.
The LIMS application software must be compatible with the system hardware and network, and must meet the functional requirements specified.	X			

The LIMS application software must have the ability to be hosted on-site.	X			
The LIMS application software must have the ability to be hosted remotely with an approved service provider.	X		*	ATL's Cloud Hosting Partner (ACHP) is a leading VMware hosting provider with award-winning cloud platforms in the UK, US and Asia. ACHP specializes in the delivery and management of mission-critical hosting services, enabling customers to reduce the costs, complexity and risks associated with maintaining their own web and online applications. ACHP hosted VMware services include a 100% uptime service level guarantee.
Computers and tablets must be able to use other applications, such as Microsoft Office, rather than requiring dedication to the LIMS application software alone.	X			This is fully supported. Devices do not need to be dedicated to LIMS only.
The LIMS vendor must have a minimum of 5 years' experience in the LIMS business.	X		*	Accelerated Technology Laboratories, Inc. (ATL) was founded in 1994 in the Silicon Valley in response to a need for an easy to use and affordable Laboratory Information Management System (LIMS). At the time, there were over two dozen LIMS solutions on the market, yet this need existed. ATL pioneered Windows-based LIMS, called Sample Master. Our Company Background Details are included in Section 3.2.5.
The LIMS vendor must have current certification under ISO 9001.	X		*	ATL is ISO 9001 certified. We have included our most recent certificate in Attachment A
The LIMS vendor must be a Microsoft Gold Certified partner or provide proof that data/document format out of and into the LIMS product is Microsoft compatible without reformatting.	X		*	ATL is a Microsoft Gold certified partner. We have included a copy of our most recent report in Attachment B.

The LIMS application software must be able to be accessed from the laboratory or field via a laptop, tablet or other portable device via the Internet.	X		*	Sample Master® is compatible with laptops and tablets running Windows. Sample Master® may also be accessed via a browser by utilizing Citrix. ATL does not recommend accessing the full version of Sample Master® with a smart phone. ATL's iMobile app is specifically designed for smart phones and tablets. Clients may access results and reports via ATL's Result Point® web portal.
The LIMS application software must be able to pre-login sample information from the field via a laptop, tablet, or other portable device when Internet access is not available. The pre-logged information must be uploaded to the LIMS application software once Internet access is available.	X		*	Sample Master® iMobile provides users with the ability to synchronize in the field via 3G/4G data connection or Wi-Fi, or cache data and upload when back in the lab if an active 3G/4G or Wi-Fi connection is not available.
The LIMS application software must track samples from initiation to disposal.	X			Sample Master® contains integrated workflow management which produces compliant electronic records at each of the laboratory workflow steps and automatically links related information to produce a traceability matrix surrounding results. The various steps involved in obtaining a defendable result from sample login through to sample disposal are electronically documented in correspondence with integrated modules that maintain: • Various versions of test methods, dates of activation and retirement • Training record management for analysts and re-certification dates • Full on-screen audit trail on results • Complete chain of custody with date/time stamps • Chemical inventory, lot numbers, expiration dates and storage information • Instrument maintenance, calibration and repair logs • Control charts and internal laboratory standards tracking

				• Subcontracting sample tracking • Reporting templates and EDDs (electronic data deliverables) and much more. • Sample Master®'s integrated ISO 17025 compliant features are recognized by quality control managers and laboratory experts as an effective platform to accelerate accreditation and ease the burden of maintaining ongoing compliance. • The requisite documentation linked to each of the lab processes is easily generated during the implementation of an ISO 17025 "ready" LIMS platform such as Sample Master®, which provides on-line SOP linking.
The LIMS application software must manage test assignments and parameters, collect data from tests (from instruments or input manually), perform calculations, and store results.	X			To reduce manual entry requirements, Sample Master® allows for the pre-configuration of orders, tests, samples and parameters and utilizes pull-down menus with automatic pre-population of pre-configured order, test, sample and parameter elements. Default analysis results can be set for parameters saving users result entry time. Analysis results can be imported automatically from analytical instruments rather than requiring manual user entry. Standard calculations such as mean, standard deviation, upper and lower control limits, and </> symbols are built into the LIMS.
The LIMS application software must manage all aspects of quality control including data review and statistical analysis.	X			The QA/QC module allows users to graph results and create control charts for data that has been entered into Sample Master®. Users can configure tests to include QC, matrix spikes, blanks, duplicates, surrogates, matrix spike duplicator and many others. Control limits may be entered manually or calculated from historical limits. Clients can easily select the data to plot using criteria such as test, sample number, analyst, etc. Advanced statistical analysis is supported via interface with Northwest Analytics.

The LIMS application software must have the ability to track instrument use and maintenance and also have the ability to interface directly with instruments.	X			ATL's Electronic Data Transfer (EDT) module allows automatic transfer of data from an analytical instrument into Sample Master®. ATL has extensive expertise in instrument integration and has a library of over 450 different instruments that have previously been interfaced with Sample Master®. The Resource Management module allows clients to setup instrument maintenance and calibration schedules. If an instrument calibration is out of date, and this is set as required, then the LIMS will not allow data to be imported from that instrument.
The LIMS application software must generate reports for samples, quality control, invoicing, and management purposes.	X			Sample Master® includes over 70 standard reports, and allows appropriately permissioned users to modify existing reports and create new reports via Access, SQL or Crystal Reports.
The LIMS application software must protect information and data with respect to State and agency authorization rules and include an audit trail.	X			Sample Master® has tight security to ensure that only authorized individuals can login to the system. Users are required to provide a user name and password and the LIMS is CFR 21 part 11 compliant. Access level is restricted to users that require specific functions, such as data entry, data approval, data retrieval, data modification (auditing), and data customization. In addition to the LIMS access, users can be assigned various levels of permissions, such as None, View only, Enter, Validate and Approve. LIMS administrators can configure the LIMS to utilize Windows authentication for added security. Sample Master® provides a complete audit trail. The LIMS stores the original result, the date and time stamp of the original result, the person that entered the original result and the new result, the date and time stamp of the new result, the user that made the change (requires permission) and finally the new result. In addition, users must provide the software with a reason for the audit; the software will prompt the user to enter in a reason for the change of the result. If no reason is entered a message box appears stating clients must supply a reason for auditing this sample

				result. The Audit Trail function allows users to print preview or print a report which shows all audits done to any sample.
The LIMS application software must have the ability to electronically exchange data with other databases. This includes, but is not limited to importing customer information from an Access database and exporting data to eLEXNET.	X			Sample Master® has the ability to export and import data electronically from internal and external systems. ATL engineers will work with IA DOA to develop a Requirements Document to ensure that all necessary information is included and properly mapped, prior to creating the system interface.
The LIMS application software must have the ability to generate, print, and read barcodes.	X			The Sample Tracking module of Sample Master® allows users to create user-defined sample labels including barcodes (e.g., chain-of-custody labels, freezer labels, etc.) Users can configure the label to contain any information that they choose. Any entry field in Sample Master® supports the use of barcodes. Barcode labels can be user-defined and printed from Sample Master®. Sample Master® supports a variety of barcode fonts.
The LIMS application software must have the ability to perform Document Management- to store the procedures used in the lab and track revisions to ensure that only the most recent is available to analysts but also maintain previous revisions for historical record.	X			Sample Master® allows for the attachment and integration of documents or referencing a path name to documents in a variety of locations in Sample Master®. Documents attached or referenced in Sample Master® can be viewed by the user directly from Sample Master®. Users can attach documents in any common formats such as PDF, DOC, JPG. Users can use Microsoft Word or Excel and lock those SOP files so that only users with permissions can make any changes. Complete history/version control is documented. ATL has a partnership with LabCore that offers a document management solution that ATL has integrated into the LIMS as an option.
The LIMS application software must have the ability to maintain employee training records and to notify users when training or re-training is required.	X			ATL's Resource Management module allows users to track employee training records, generate a report of expiring certificates or training due, and manage DOCs.
The LIMS application software must	X			The QA/QC module allows users to graph

have the ability to perform trend analysis/control charting.				results and create control charts for data that has been entered into Sample Master®.
The LIMS application software must have the ability to automatically use the most recent 30 QC samples for control charting.	X			This is fully supported in Sample Master®. Users can choose how many data points for their control charting.
The LIMS application software must have the ability to associate standards, media, reagents, containers and other supplies to projects, batches, samples, or tests.	X			Sample Master®'s Chemical Inventory module allows users to track supplies and vendors. It provides the ability to assign prices to supplies, track lot numbers and assign expiration dates. Users can receive and make supplies, reconcile them and update supplies used in sample analysis, track lot and expiration date information. Sample Master® will warn users when stock is running low and in need of replenishment, providing ample time to place an order and avoid running out of supplies.
The LIMS application software must have the ability to support versioning of documents and worksheets. Any change requires permission limited by user role. Once approved, the new version is the only version available for viewing and any outstanding tests should be updated to the new version.	X			Test method documents or SOPs pertinent to testing can be linked to each test. Once linked, these documents can be directly viewed by the user during the performance of a test. As often these documents may be versioned or expire, Sample Master® provides the ability to activate or retire these linked documents on user defined dates.

3.2.5 Vendor Background Information

The Contractor shall provide the following general background information:

3.2.5.1 When awarding a bid opportunity, does your state have a preference for instate vendors? (Example: A % advantage/discount provided off their cost proposal for an instate vendor.) Yes or No. If Yes, please include the details of the preference.

For the purpose only of determining the low bidder on all contracts for equipment, materials, supplies, and services valued over twenty-five thousand dollars ($25,000), a percent of increase shall be added to a bid of a nonresident bidder that is equal to the percent of increase, if any, that the state in which the bidder is a resident adds to bids from bidders who do not reside in that state.

3.2.5.2 Name, address, telephone number, fax number and e-mail address of the Contractor including all d/b/a's or assumed names or other operating names of the Contractor and any local addresses and phone numbers

Accelerated Technology Laboratories, Inc.
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Christine Paszko, PhD, VP, Sales & Marketing
cpaszko@atlab.com

3.2.5.3 Form of business entity, i.e., corporation, partnership, proprietorship, limited liability company

Corporation

3.2.5.4 State of incorporation, state of formation, or state of organization.

North Carolina

3.2.5.5 The location(s) including address and telephone numbers of the offices and other facilities that relate to the Contractor's performance under the terms of this RFP

Accelerated Technology Laboratories, Inc.
496 Holly Grove School Road, West End NC 27376
P. 910-673-8165 | F. 910-673-8166

3.2.5.6 Number of employees

35

3.2.5.7 Type of business

Laboratory Information Management Systems

3.2.5.8 Name, address and telephone number of the Contractor's representative to contact regarding all contractual and technical matters concerning the Proposal

Christine Paszko, PhD, VP, Sales & Marketing
496 Holly Grove School Road, West End NC 27376
P. 910-673-8165

3.2.5.9 Name, address and telephone number of the Contractor's representative to contact regarding scheduling and other arrangements

Sonja Stutsman, Account Manager
496 Holly Grove School Road, West End NC 27376
P. 910-673-8165 x3195

3.2.5.10 Name, contact information and qualifications of any subcontractors who will be involved with this project the Contractor proposes to use and the nature of the goods and/or services the subcontractor would perform.

No subcontractors will be used

3.2.5.11 Contractor's accounting firm

TRP CPAs, PLLC

3.2.5.12 The successful Contractor will be required to register to do business in Iowa before payments can be made.

For vendor registration documents, go to:
https://das.iowa.gov/procurement/vendors/how-do-business

ATL acknowledges this requirement.

3.2.6 Experience

The Contractor must provide the following information regarding its experience:

3.2.6.1 Number of years in business.

22

3.2.6.2 Number of years' experience with providing the types of goods and/or services sought by the RFP.

22

3.2.6.3 The level of technical experience in providing the types of goods and/or services sought by the RFP.

ATL's developers, engineers and support staff have extensive experience with development and implementation of the LIMS solutions. Many of our engineers have previously worked with LIMS in the laboratory environment. Our collective team has over 75 years' experience in the LIMS and laboratory fields.

3.2.6.4 A list of all goods and/or services similar to those sought by this RFP that the Contractor has provided to other businesses or governmental entities.

Sample Master® LIMS, Sample Master® Result Point®, and Sample Master® iMobile; LIMS Installation and Implementation, LIMS Training and LIMS Support

3.2.7 Personnel

The Contractor must provide resumes for all key personnel who will be involved in providing the goods and/or services contemplated by this RFP. The following information must be included in the resumes:

3.2.7.1 Full name

3.2.7.2 Education

3.2.7.3 Years of experience and employment history particularly as it relates to the specifications of the RFP

Christine Paszko, MT (ASCP), Ph.D.

BACKGROUND SUMMARY

Dr. Paszko currently serves as a Vice President of Sales and Marketing for Accelerated Technology Laboratories, Inc. and aids in the marketing intelligence for the development of Advanced Laboratory Information Management Systems based on the best available technology. She also has extensive LIMS, project management and LIMS implementation experience.

She has over 20 years of laboratory experience and has used and implemented several LIMS and LIS systems in her career. Dr. Paszko also worked in a water/wastewater environmental testing laboratory and is familiar with AL2A, NELAP, and ISO 17025. While attending the University of Maryland, she was responsible for environmental monitoring and performing several microbiological indoor air quality and water quality analyses. Her industry experience includes leading the team that developed and brought to market molecular based technologies for environmental pathogen monitoring for E.coli 0157H7, Giardia, and Salmonella. She has demonstrated project management skills, having managed a $2.3 million budget at ABI, numerous Grants and a CRADA with the USEPA. She also serves as a reviewer for the USDA, FDA and EPA. Dr. Paszko has authored over 3 dozen articles and book chapters, many on LIMS. She has co-authored a book entitled "Laboratory Information Management Systems", second edition in September 2001.

EDUCATION

University of Maryland | **B.S. in Medical Technology (ASCP Certified)** | Minor: Microbiology

University of Maryland | **Ph.D. in Molecular Biology** | Minor: Biochemistry

Stanford University | **Graduate Coursework:** Business Management, Informatics, and Negotiation Skills

North Carolina State University | **Project Management Program (PMI)**

RELATED EXPERIENCE

1996 – Present Vice President, Sales & Marketing, Accelerated Technology Laboratories, Inc., West End, NC

Dr. Paszko has been employed at Accelerated Technology Laboratories, Inc. since 1998 and was originally hired as the Director of Sales and Marketing to oversee the Sample Master® LIMS product line and manage the sales team. She was soon promoted to her current position where she is responsible for overseeing worldwide sales, marketing and business development functions. She also oversees user meetings and focus groups held regularly to ensure that ATL products continue to meet and exceed our customer's expectations.

Dr. Paszko has worked as a medical technologist, molecular microbiologist and laboratory manager with over 20 years of laboratory experience. She was previously employed at Perkin Elmer Applied Biosystems Inc. and was the group leader for the food and environmental group and supervised 18 scientists and marketing professionals. Responsibilities included the development of PCR-based diagnostic kits for the rapid environmental detection of food and waterborne pathogens such as *Salmonella, E. coli* 0157:H7, *Giardia* and *Cryptosporidium*. Also secured $250K in funding from NASA to develop portable PCR units for the space station utilizing the TaqMan technology developed at Roche. Also worked on informatics for high density oligo arrays and on BioLIMS.

Broad Experience in:

- Regulatory issues CFR 21 part 11, HL7, CLIA, CAP
- NELAC, GALP, GMP,A2LA, ISO 17025, ISO 9001 regulations
- Regulatory Compliance Report Generation & Submission
- Laboratory and Project Management
- Microbiology (HPLC, PCR, LCR, Mab development)
- Laboratory Safety (including radiological)
- Bioterrorism Preparedness Training (information management)
- Laboratory Standard Operating Procedures
- Barcodes, scanners, label printers and biometric ID
- Project and Account Management
- Contract Management
- LIMS and LIMS implementation
- End-user training
- Quality planning
- System and Software Validation
- ATL's ISO 9001 Management representative
- Microsoft Office 97, 2000, XP, Vista, Windows 7

Note: Dr. Paszko has participated in over 100 installations of the Sample Master® LIMS product line and has 18 years of experience with the Sample Master® LIMS product line, Result Point® and NeoMate™ LIMS.

Chuck Hindbaugh

BACKGROUND SUMMARY

Mr. Hindbaugh has worked as a Chemist, Quality Manager and Laboratory Manager with expertise in the following areas: NELAP/NELAC, and A2LA using ISO/IEC 17025 as well as scheduling work and employees. He is proficient in Wet Chemistry and Metals analysis, and qualified in Organic analysis, sample collection, managing and maintaining a LIMS database. He also has experience in preparing and analyzing samples in Wet Chemistry, Metals using FLAA, GFAA, ICP, Cold Vapor Mercury, as well as GC, and GC/MS.

EDUCATION

Eastern Michigan University **| B.S. in Biochemistry/Toxicology** | 1992

RELATED EXPERIENCE

Director, Implementation Services, Accelerated Technology Laboratories, Inc., West End, NC

As an Implementation Engineer at ATL, Mr. Hindbaugh is responsible for assisting in the configuration of Sample Master® Pro and TITAN® LIMS, and working with end-users (in specification creation, training and providing overall implementation support).

Broad Experience in:

- Laboratory Operations:
  - Review data and sign reports
  - Organize sample turnaround time
  - Schedule work and employees
  - Customer service
  - Proficient in Wet Chemistry and Metals analysis
  - Qualified in Organic analysis
  - Sample collection
- Experience in preparing and analyzing samples in the following:
  - Wet Chemistry
  - Metals using FLAA, GFAA, ICP, Cold Vapor Mercury
  - GC, and GC/MS
- Regulatory Compliance Report Generation & Submission
- Needs Assessment Specifications
- LIMS Implementation
- LIMS Project Management
- LIMS Training
- LIMS Support
- Validation Plan Development and Implementation
- Quality Management Systems
- NELAP/NELAC, and A2LA using ISO/IEC 17025
- Windows XP, Vista and Windows 7
- Microsoft Server 2000, 2003, and 2008
- Microsoft Office programs; Outlook, Word, Excel, Visio, and Access
- Peachtree

Note: Mr. Hindbaugh has over 15 years' experience with Sample Master® and TITAN® LIMS Solutions

Joanne Dussourd, Ph.D.

BACKGROUND SUMMARY

Currently serves as a Software Engineer and Certified Trainer for Accelerated Technology Laboratories, Inc., aiding in the development of Advanced Laboratory Information Management Systems based on the best available technology.

Worked as an instructor in the Biology Department at Duke University from 1985 - 1986, as a Research Associate and Lab Manager at the University of Maryland from 1986 - 1990, as an instructor in the Biology Department at University of Central Arkansas (UCA) from 1992 - 1997, and as an instructor in the Computer Science Department at UCA from 1999 - 2001.

Dr. Dussourd's background in laboratory science combined with her computer expertise gives her special insight into laboratory client needs. She currently assists in support, training, instrument integration and product testing. Contributes to maintaining a system for handling and tracking software development of current and existing product lines. Assists in the timely development of new software. Contributes to the implementation of new software products and assists in the maintenance of current products.

EDUCATION

University of Central Arkansas **| B.S. in Computer Science** |

Cornell University **| B.S. in Biology** |

Cornell University **| Ph.D. in Physiology** |

RELATED EXPERIENCE

Sr. Software Engineer & Certified Trainer, Implementation, Accelerated Technology Laboratories, Inc., West End, NC

Broad Experience in:

- Software Application Design
- LIMS Project Management
- Technical Support and Training for Sample Master® LIMS
- Implementation of Instrument Parsers
- Technical Writing:
    - Functional Requirement Specification (FRS) Documents
    - Student Workbooks (user guides)
    - Test Plans/Validation
- Advanced Computer Science Courses:
    - Computer Organization
    - Assembly Language
    - Java Programming
    - File Structures
    - Database Design
    - Data Structures
    - Algorithms
    - Object-Oriented Software Engineering
    - Operating Systems
    - Networking Theory

NOTE: Dr. Dussourd has over 10 years of experience with Sample Master® Pro LIMS.

Thomas R. Klinckman, Ph.D.

BACKGROUND SUMMARY

Dr. Klinckman has over 15 years of experience in laboratory operations and laboratory automation. He has worked as an Environmental Scientist and Laboratory Manager and has written numerous publications for the laboratory industry.

As a Laboratory Manager his duties included: managing employees, QA/QC, backup analyst for all analyses, validating all data before leaving the laboratory, Sample Master® LIMS Database Administrator, budgeting, customer relations, new business, develop methods, writing and review SOPs, analyzing meteorological data, fitness for duty testing, instrument maintenance, repair and replacement..

EDUCATION

University of Memphis **| Ph.D. in Computational Chemistry** | 2001

Austin Peay State University, Clarksville, TN **| B.S. in Chemistry** | 1997

Washington State University & University of New Mexico **| Coursework in Radiochemistry** |

Continuing Education

Oracle 2 Day DBA Course – Oracle Database 11*g*

RELATED EXPERIENCE

LIMS Implementation Engineer, Implementation Services, Accelerated Technology Laboratories, Inc., West End, NC

Dr. Klinckman's in-depth knowledge and years of laboratory operations and laboratory automation experience make him a valuable member of the ATL Team. As an Implementation Engineer at ATL, Dr. Klinckman is responsible for assisting in the installation and configuration of Sample Master® and TITAN® LIMS, and working with end-users in specification creation, training and providing overall implementation support.

Broad Experience in:

- Laboratory Operations
- SOP Creation
- Technical Writing
- In-depth knowledge of laboratory NELAC and ISO requirements
- Regulatory Compliance Report Generation & Submission
- LIMS Implementation
- LIMS Training
- LIMS Support
- Fluent in LIMS and Instrument integration
- Backup Radiochemist utilizing Gamma Spec, Alpha Spec, LSC, and Gas Proportional Counter.
- Experience and maintenance of laboratory instruments: GC-MS, IC, ICP-MS, ICP-OED, HPLC, FTIR, KF, TOC, and UV-VIS instruments.
- Experience with microwave extractions, digestions, oxygen bombs, pH, conductivity, alkalinity, DSC, TAN, and TBN methods.
- NELAP/NELAC
- Computer Hardware
- Database Administration & Development: Access, Microsoft SQL Database Engine, Oracle, and RBM Suite.
- Languages: Microsoft Access and Excel macros, BASIC, HTML, and C++. Familiar with C# and ASP.Net
- Operating Systems: UNIX, Linux, DOS, Windows, and Mac OS on many platforms.
- Software: Expertise of many software packages, including chemical, production, utilities, and security

NOTE: Dr. Klinckman has over 9 years of experience with Sample Master® and TITAN® LIMS solutions.

David Sloan

BACKGROUND SUMMARY

Mr. Sloan has a total of 6 years of laboratory experience in three different industries.

He has on-site experience in food manufacturing and food safety within the dairy industry. He has also worked with HACCP and has general experience in food product development, food packaging, and food analysis and food chemistry. He also has extensive experience in research and development of adhesive and sealants, torque reducting lubricants and sound damping within the automotive industry. Internal quality control methods, manufacturing and up scaling experience.

Mr. Sloan has also worked in a wastewater laboratory in wet chemistry and has used Sample Master® LIMS as a customer - as a laboratory technician and as the LIMS Administrator.

Mr. Sloan has over 4 years of experience installing, configuring, supporting and training with the ATL product line.

EDUCATION

Michigan State University **| B.S. in Food Science** | Concentration: Chemistry

University of Melbourne, Australia **| General Studies** |

RELATED EXPERIENCE

LIMS Implementation Specialist & Certified Trainer, Implementation Support & Services, Accelerated Technology Laboratories, Inc., West End, NC

As an Implementation Engineer at ATL, Mr. Hindbaugh is responsible for assisting in the configuration of Sample Master® Pro LIMS and working with end-users (in specification creation, training and providing overall implementation support).

Broad Experience in:

- Laboratory Operations
    - Research and Development
    - Quality Control
    - Manufacturing
    - Food Safety
    - HACCP
    - Schedule work and employees
    - Customer service
    - Proficient in Wet Chemistry
- Needs Assessment Specifications
- LIMS Implementation
- LIMS Training
- LIMS Support
- Server Configuration
- Network Setup
- Windows XP, Vista and Windows 7
- Databases: SQL Server, Oracle, MS Access
- Microsoft Office programs; Outlook, Word, Excel, and Access
- Peachtree, Quickbooks

Frank Voelker

BACKGROUND SUMMARY

Mr. Voelker has extensive education and development experience, specializing in the C# language, with training in Java, C++, and MySQL. He has employed his skills in group projects as well as in teaching arenas. With this passion for development, he also has applied his acquired skills in the gaming industry by collaborating with various mod teams and level editors, and utilizing 3D modeling software.

EDUCATION

Sandhills Community College **| Simulation & Game Development** |

RELATED EXPERIENCE

Senior Deployment Specialist, Implementation Services, Accelerated Technology Laboratories, Inc., West End, NC

As a Senior Deployment Specialist at ATL, Mr. Voelker is responsible for assisting in the configuration of ATL's LIMS Solutions and working with end-users (in specification creation, training and providing overall implementation support).

Experience in:

- C#, Java, Python, C++
- .Net Framework 3.1, 4.0, WF, LINQ
- Visual Studio 2008, 2010
- MySQL databases
- Object-oriented specialist
- Proficient with VCS and DVCS software development systems
- Project management experience in digital game development
- Computer hardware construction and maintenance
- Familiarity with 2D and 3D digital graphics equipment

Shawn Shahamat

BACKGROUND SUMMARY

Currently serves as Director, Support Services for Accelerated Technology Laboratories, Inc. and aids in the supporting, testing, and training of Advanced Laboratory Information Management Systems based on the best available technology.

Assists development group in the testing of new software development plan for the company's LIMS product families, provides customer support, and assists in end-user training. Assists in maintaining a system for handling and tracking software support of current and existing product line. Assist in the timely testing of new software, enhancements and service packs. Contributes to maintaining a database of support incidents to LIMS software. Responsible for assisting support and development, providing technical support, training end-users, software installation, and assisting marketing and sales by providing technical assistance when needed. Contributes to the implementation of new software products and assists in the maintenance of current products.

Mr. Shahamat is an experienced IT Professional, with years spent in a Microsoft environment, setting up networks, building and installing software, and managing the administrative and training staff. In addition to that role, he designed and authored training manuals, built help files, and wrote test scripts.

EDUCATION

IH University, Tehran, Iran **| B.S. in Mechanical Engineering** |

Continuing Education

Microsoft Certified System Engineering **|Coursework in Network+/MCSA 2003/Basics of Web Design** |

Coursework in Project Management – PMBOK 2008 |

Commidea, UK | Certified for Installation of Commidea's Ocius Products Suite

RELATED EXPERIENCE

Team Member & Certified Trainer, Support Services, Accelerated Technology Laboratories, Inc., West End, NC

Assists in testing/Validation and supporting ATL LIMS Solutions product line, provides installation expertise and trains end-users. Very knowledgeable in hardware and network configuration.

Broad Experience in:

- Computer network design
- LIMS Software setup and maintenance
- Team Training and Management of Support Staff
- End-user Training
- Customer Technical Support
- Computer Systems and network design
- VB and SQL scripts
- DotNetNuke installation and configuration
- Databases: SQL Server, Oracle, MS Access
- VOIP Systems
- Operating Systems: Windows NT/2000, XP, Vista, Windows 7LIMS Support

3.2.8 Termination, Litigation, Debarment

The Contractor must provide the following information for the past five (5) years:

3.2.8.1 Has the Contractor had a contract for goods and/or services terminated for any reason? If so, provide full details regarding the termination.

No

3.2.8.2 Describe any damages or penalties assessed against or dispute resolution settlements entered into by Contractor under any existing or past contracts for goods and/or services. Provide full details regarding the circumstances, including dollar amount of damages, penalties and settlement payments.

None

3.2.8.3 Describe any order, judgment or decree of any Federal or State authority barring, suspending or otherwise limiting the right of the Contractor to engage in any business, practice or activity.

None

3.2.8.4 A list and summary of all litigation or threatened litigation, administrative or regulatory proceedings, or similar matters to which the Contractor or its officers have been a party.

None

3.2.8.5 Any irregularities discovered in any of the accounts maintained by the Contractor on behalf of others. Describe the circumstances and disposition of the irregularities.

None

3.2.8.6 Failure to disclose these matters may result in rejection of the Proposal or termination of any subsequent Contract. The above disclosures are a continuing requirement of the Contractor. Contractor shall provide written notification to the Agency of any such matter commencing or occurring after submission of a Proposal, and with respect to the successful Contractor, following execution of the Contract.

ATL understands and acknowledges this requirement.

3.2.9 Criminal History and Background Investigation

The Contractor hereby explicitly authorizes the Agency to conduct criminal history and/or other background investigation(s) of the Contractor, its officers, directors, shareholders, partners and managerial and supervisory personnel who will be involved in the performance of the Contract.

ATL acknowledges and accepts this requirement.

3.2.10 Acceptance of Terms and Conditions

By submitting a Proposal, Contractor acknowledges its acceptance of the terms and conditions of the RFP and the document, "Contracts-Services-State General T&Cs-eff 5-1-16", without change except as otherwise expressly stated in its Proposal. If the Contractor takes exception to a provision, it must identify it by page and section number, state the reason for the exception, and set forth in its Proposal the specific RFP or the document, "Contracts-Services-State General T&Cs-eff 5-1-16", language it proposes to include in place of the provision. If Contractor's exceptions or responses materially alter the RFP, or if the Contractor submits its own terms and conditions or otherwise fails to follow the process described herein, the Agency may reject the Proposal, in its sole discretion.

ATL acknowledges and accepts the terms and conditions.

3.2.11 Certification Letter

The Contractor shall sign and submit with the Proposal, the document included as Attachment #1 (Certification Letter) in which the Contractor shall make the certifications included in Attachment #1.

ATL has included the certification letter as Attachment C in the Attachments section.

3.2.12 Authorization to Release Information

The Contractor shall sign and submit with the Proposal the document included as Attachment #2 (Authorization to Release Information Letter) in which the Contractor authorizes the release of information to the Agency.

ATL has included the Authorization to Release Information as Attachment D in the Attachments section.

3.2.13 Firm Proposal Terms

The Contractor shall guarantee in writing the goods and/or services offered in the Proposal are currently available and that all Proposal terms, including price, will remain firm 160 days following the deadline for submitting Proposals.

ATL's proposal shall remain firm and valid for 160 days after the closing date of the receipt of the proposals.

ATL Reference for Iowa Department of Agriculture & Land Stewardship

ATL's client, Oklahoma Department of Agriculture, is prohibited by state law to provide letters of recommendation, as it may be considered official endorsement of a product. They are happy to serve as a reference for our Sample Master® LIMS, and may be contacted via the information below.

Oklahoma Department of Agriculture
Brenda Snograss
Assistant Director
2800 N. Lincoln Blvd
Oklahoma City, OK 73105
Phone: (405) 522-5440
Email: brenda.snodgrass@ag.ok.gov
Website: www.oda.state.ok.us

Keith Keesee
Laboratory Technical Manager
2800 N. Lincoln Blvd.
Oklahoma City, OK 73105
Phone: (405) 522-0316
Email: Keith.Keesee@ag.ok.gov
Website: www.oda.state.ok.us

Delaware Department of Agriculture
Dan Woodall
Lab Manager
2320 South DuPont Highway
Dover, DE 19901
Phone: (302) 698-4526
Email: daniel.woodall@state.de.us us
Website: http://dda.delaware.gov/

VT Department of Agriculture, Food & Markets
Daniel McAvinney
Environmental Scientist
63 Carrigan Drive
Burlington, VT 05405
Phone: (802) 585-9790
Email: daniel.mcavinney@vermont.gov
Website: http://www.anr.state.vt.us

Nova Scotia Agriculture Protection
Tim Delaney
Manager, Laboratory Services
PO Box 550
Truro, NS B2N 5E3
Phone: (902) 893-6534
Email: tim.delaney@novascotia.ca
Website: http://novascotia.ca/agri/

Farmers Edge Laboratories
Patrick Visser
Lab Manager
1357 Dugald Rd
Winnipeg, MB R2J 0H3
Phone: (204) 233-4099 x462
Email: Patrick.Visser@farmersedge.ca
Website: http://www.anr.state.vt.us

ED KEE
SECRETARY
E. AUSTIN SHORT
DEPUTY SECRETARY

STATE OF DELAWARE
DEPARTMENT OF AGRICULTURE
2320 SOUTH DUPONT HIGHWAY
DOVER, DELAWARE 19901
dda.delaware.gov

TELEPHONE (302) 698-4500
TOLL FREE (800) 282-8685
FAX (302) 697-6287

To: The Iowa Department of Agriculture

Dear Evaluators,

The Delaware Department of Agriculture's Compliance Laboratory has been using Sample Master v9.1 for two years. It easily serves our lab's core functions such as logging in samples, assigning analytical testing, entering lab data, and generating lab reports. It is designed in a way that allows our staff, including lab technicians, chemists, inspectors, front office staff, and management to learn the software quickly. We are pleased with our purchase of Sample Master. The staff at Accelerated Technology Lab has been a pleasure to work with as well.

I was very pleased with the efficiencies our lab gained when switching to Sample Master from our past LIMS. Data entry is now done using parsers allowing staff to import big result files from our instruments right into the LIMS with essentially the push of a button. I also enjoy the speed at which I can deliver client's validated lab reports using our state e-mail system Outlook. The reports are sent as PDF files and large numbers of reports can be sent with a single e-mail.

Sample Master is flexible and allows us to add sample types and lab test with very little effort. We also enjoy the ability to modify our lab reports in any way we see fit. Should you have any questions please contact me directly (302) 698-4526.

Sincerely,

Dan Woodall

Dan Woodall

DDA Lab Manager

VERMONT

Agency Of Agriculture, Food & Markets
116 State Street
Montpelier, VT 05620-2901
www.Agriculture.Vermont.gov

July 8, 2016

Iowa Department of Agriculture & Land Stewardship LIMS Team

Dear Mr. Discher,

I'm writing this note as a favor for Mary Shanaver/ATL, to say a few words about Sample Master LIMS software and our overall experience with Accelerated Technology Laboratories.

The State of Vermont, Department of Environmental Conservation Laboratory purchased Sample Master Software in 2004. At that time, we were looking for a LIMS solution that would give us robust sample tracking and management; flexibility with test creation; QA/QC and sample data querying and management; and data delivery to our users, along with the ability to create custom reports. Sample Master offers options/modules that we have customized to suit the particular needs of our organization and customers. At that time, there were other comparable LIMS in the market, but none offered the options and flexibility our lab needed.

About a year ago, our State Environmental Conservation and Agriculture labs were merged, and with that came the task of demonstrating to our Ag lab peers, the value of Sample Master to their existing lab business model and customers. It has been a relatively smooth transition, moving from file cards, spreadsheets and various databases, to having Ag staff understand the value this modern LIMS solution brings to our organization. We also have ATL web based reporting product, 'Result Point' software, which many of our customers use to access their data securely.

ATL offers a 3 day 'Boot Camp' for users and administrators as well as a report writing class. I attended these courses in 2011, and found them to be very informative. I would highly recommend this training.

Our Lab has maintained annual service agreements with ATL since 2004. The tech support staff are very knowledgeable and focused on customer satisfaction. As the administrator for Sample Master at our lab, I'm impressed with the responsiveness and 'can do' attitude of the tech support group.

Since 2004 we have been a NELAC accredited lab, and Sample Master has helped us achieve and maintain that accreditation.

It's been a little more than 11 years since our relationship began with ATL and the Sample Master folks. We're still very satisfied with this product, and I would recommend Sample Master software without hesitation. Please contact me directly at 802-585-9790 or daniel.mcavinney@vermont.gov if you have any questions.

Sincerely,

Daniel McAvinney
Environmental Scientist
Vermont Agriculture and Environmental Lab

NOVA SCOTIA
Agriculture

Agriculture
Agriculture Protection
Laboratory Services

176 College Rd
Truro, Nova Scotia
B2N 5G6

URL: http://www.gov.ns.ca/nsaf/
Tel: 902-893-6534
Fax: 902-893-4191
Email: tim.delaney@novascotia.ca

July 8, 2016

Dear Mr. Discher and the Iowa Department of Agriculture and Land Stewardship LIMS Team:

Mary Shanaver from Accelerated Technology Laboratories has asked me if I would write you, relaying our experiences with ATL and their SampleMaster Pro software. I am happy to do so.

To give you a brief comparison between our labs, the Nova Scotia Department of Agriculture labs are also ISO 17025 accredited. Our analytical labs comprise water testing, soils, soil amendment and feed testing, as well as raw and processed dairy product testing. About 16 of our staff utilize our LIMS. One wrinkle that hopefully you do not have to face is that our IT is done centrally with our provincial government. That is, we have to follow a series of protocols in order to have the LIMS on the corporate server. This has been our sole source of frustration: the LIMS worked flawlessly out of the box, but when installed on the corporate server, through a terminal server setup, ATL had to work with the corporate IT folks to ensure everything functioned properly. This is no slight against ATL, they were champs at making the system work and this would have affected any LIMS provider. I simply mention it as it may be an unforeseen source of frustration for you, if so, rest assured ATL will iron out any wrinkles.

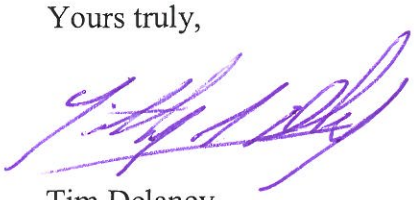
In terms of the SampleMaster Pro application, I would be confident that it would do what you want it to do. It's a robust, relational database. When it is set up, ATL will help you analyse your business processes, so all the data you need to input gets captured. Unlike a competitive product we examined, you do not need a dedicated IT person to administer the LIMS. However, my suggestion is that you should have someone who understands how relational databases work, preferably with some SQL experience. That being said, there are a number of stock queries in the LIMS, but anyone who can string together an SQL query should be able to retrieve the type of custom report you require. If you don't have someone with that capability, the folks at ATL can carry out that custom work. During the consultation phase of the project, we worked with ATL to determine which customizations were required for our application – we simply factored in a bit of wiggle room into the budget.

ATL offers a couple of "Boot Camp" courses a couple of times per year. From our experience, it's been valuable to us to have staff trained in some of the finer details of the system. I would suggest you consider having staff attend. In our case, one of the original two system admin staff has moved on to another work unit. I'm sending two people to take the boot camp training in September.

SampleMaster Pro is an excellent product, but what makes our experience a really positive one is the support you receive from the staff. Everyone at ATL has been fantastic to work with and they are very responsive to any client query. Last summer, both of our trained system administrators were off: once to a new job and the other on illness leave. We had a few issues that needed to be taken care of and had to resort to calling ATL for help. We had downgraded from "Gold" support to "Silver" due to budget pressures and although we sometimes feel somewhat limited in the number of incidents covered by the support program, staff were judicious in what they termed an "incident". The bottom line is that although ATL is a business, it isn't all about the money – they genuinely care that you're able to conduct business with a working LIMS.

I hope note has been helpful in your decision making. If you require more information, I'd be happy to do what I can. I wish you the best in your LIMS purchasing decision.

Yours truly,



Tim Delaney
Manager, Laboratory Services

June 30, 2016

RE: ATL and ATL Sample Master LIMS

To the vetting committee – Iowa Department of Agriculture:

Farmer's Edge Laboratories is a Canadian soil, plant tissue and manure test laboratory established in 2009 in the City of Winnipeg in the Province of Manitoba and is currently in operation. Farmer's Edge Laboratories' primary analytical volume lies is in soil analysis where we receive, process and report 1200 to 1500 soil samples per day on a three day turnaround time. Our service area includes the provinces of Alberta, Saskatchewan and Manitoba.

During the design phase of Farmer's Edge Laboratories, staff evaluated seven LIMS systems from various providers. After evaluation, it was decided to purchase and implement Accelerated Technology Laboratories (ATL)'s Sample Master LIMS system. This system is used extensively in all stages of analytical operations from sample intake, sample registration, analytical preparation, analysis, quality control and reporting. The LIMS needs of Farmer's Edge Laboratories are entirely met with ATL's product. ATL Sample Master LIMS handles our workload comfortably and in our opinion can handle at least double our current workload as we continue to grow our operational capacity. Sample Master LIMS exceeds our expectation of a LIMS system in a large laboratory setting.

During the initial stages of familiarizing ourselves with ATL and their products, ATL was accommodating in understanding our challenges and how their company and product would solve those challenges. The evaluation stage was satisfactory and ATL was accommodating to understand our needs and satisfied our inquiries whether the product would meet those needs. Initial implementation and configuration progressed smoothly and Farmer's Edge Laboratories continues to use the LIMS product. Farmer's Edge Laboratories retains a fee-for-service support plan with ATL in order to access resources to help us in customization of the product to keep the LIMS meeting our needs as the operation grows. ATL's sales, implementation, training and support staff are prompt, professional and exceed our expectations of a lab vendor.

Should the committee have any specific questions about Farmer's Edge Laboratories or its experiences with Accelerated Technology Laboratories or Sample Master LIMS, please contact me.

Patrick Visser

Patrick Visser
Lab Manager, Farmer's Edge Laboratories
1357 Dugald Rd, Winnipeg, MB, R2J 0H3
TEL **204-233-4099 ext 462**
EMAIL **Patrick.Visser@FarmersEdge.ca**
WEB **FarmersEdge.ca**
@farmers_edge

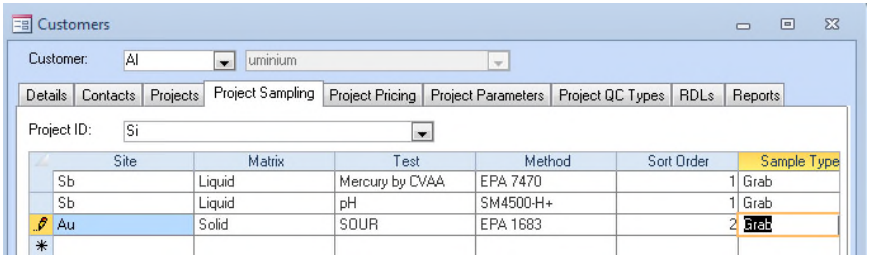
SCORED TECHNICAL SPECIFICATIONS
ATTACHMENT #6

4.2.2 All items listed in the following table are Scored Technical Specifications. Contractor should carefully follow the directions provided when providing Ratings and Descriptions within the table.

Instructions

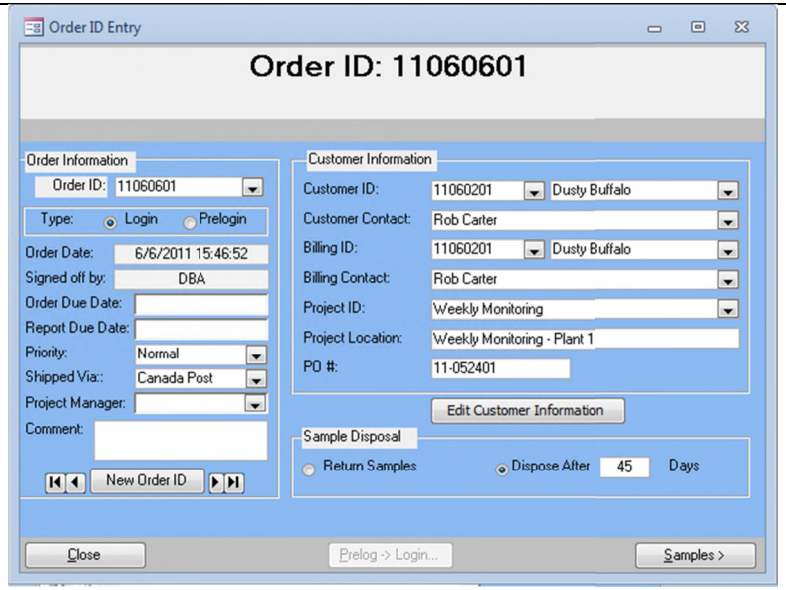
Contractor Rating - Contractor must numerically rate each functional specification listed using the following scale:

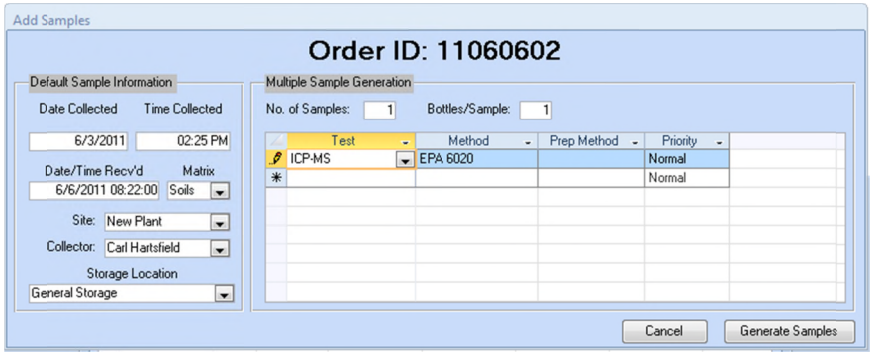
0 = no existing functionality in LIMS product or currently under development
1 = currently available in LIMS
2= available, implemented and is currently used in a laboratory
3 = available, implemented, and is currently used in an agricultural testing laboratory

	Contractor Rating (Enter 0, 1, 2, or 3 for each row)	**DESCRIPTION COLUMN** Within EACH of the following (23) listed categories, (starting with PROJECTS category), Contractor should provide a narrative description of how their system delivers the specifications listed.
PROJECTS The LIMS application software shall be able to create and use projects. The tasks may include, but are not limited to, the following list.		**1-PROJECTS** In addition to a narrative description of PROJECTS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to associate a single or multiple samples together to form a project.	3	Sample Master® stores a variety of information associated with projects, tests and samples such as due dates, priority, field preparation details, etc. including the sample's origination or collection point. Project information includes; Project ID, Sort Order, Project Number, Project Name, Project Location, Address, City, State, and Zip Code, Tests Required, Samples. 
Ability to create templates for projects, samples, and tests via customer configuration.	3	
Ability to add, edit, or archive created templates	3	
Ability to include project-level notes or narratives.	3	
Ability to invoice at the project level.	3	
Ability to search for projects.	3	
Project Identifying Information		
Information that must be associated with a project, at minimum, includes: Customer Name Each sample in the project Unique Identifier Tests required	3	

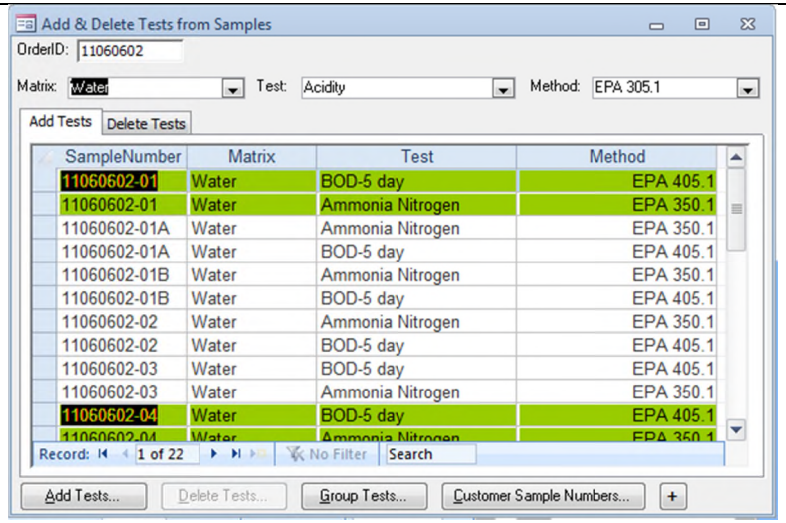
SAMPLES The LIMS application software shall track all samples from initiation to disposal. The tasks may include, but are not limited to, the following list.		**2-SAMPLES** In addition to a narrative description of SAMPLES, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to add, edit, remove, and cancel samples.	3	Samples are logged into Sample Master® in batches for customers. Login may be performed automatically or manually. Each batch is assigned a unique ID number called an Order ID. This Order ID can be used for samples that are already logged in or those in the pre-login state. Pre-login samples are not available for analysis until they are received into the laboratory. The format of the Order ID depends on the defaults that are set in the Maintenance module. To create a new Order ID, click the New Order ID button. Sample numbers are generated when the New Sample button is clicked or when multiple samples are logged in by clicking the Defaults button. When logging in a sample, users enter the customer for the sample and the tests that will be performed. Users can add or delete any tests that do not have results for a sample. New samples may be added, modified or removed. As each sample is entered, default information is copied down from a default information area. Samples can be copied from a previous sample, or multiple samples requiring the same tests can be logged in from one screen, so logging in a large number of samples is conveniently accomplished. Users have the ability to add or delete tests from multiple samples at once.
Ability to add, edit, remove, and cancel samples either one at-a-time or all-at-once if multiple samples are selected.	3	
Ability to login samples with a spreadsheet like functionality.	3	
Ability to pre-log routine samples that have yet to be submitted.	3	
Ability to perform login of samples ad-hoc.	3	
Ability to associate samples with each other as duplicates.	3	
Ability to associate samples with each other as an un-spiked and spiked duplicate.	3	
Ability to associate a sample dilution with the original sample.	3	
Ability to assign a sample as internal quality control (i.e., a representative negative blank, positive blank, media, for a "lot" or "batch" of associated samples).	3	
Ability to trigger an event upon sample receipt.	3	
Ability to record sample condition upon receipt data for each sample (i.e., temperature, chemical preservation, etc.).	3	
Ability to add, edit, or remove sample condition upon receipt information on multiple samples at one time.	3	
Ability to have sample condition upon receipt criteria for evaluating sample validity with automatic flag when criteria are not met.	3	
Ability for sample condition flag to trigger automatic sample cancelling or automatic flagging of associated data (ability to have one or the other depending on assigned tests).	3	
Ability to add, edit, or remove sample condition evaluation criteria via customer configuration.	3	
Ability to choose a sample collection location from an established list.	3	
Ability to add, edit, or remove sample collection locations from the list via customer configuration.	3	
Ability to filter sample collection locations available for choice by	3	

lab section.	
Ability to have sample descriptors associated with each sample including, at minimum, sample category, sample type, and sample matrix as separate fields in the LIMS.	3
Ability to add, edit, or remove sample descriptors on multiple samples at one time.	3
Ability to choose a sample descriptor from established lists.	3
Ability to filter sample descriptors available based on laboratory section.	3
Ability to add, edit, or remove descriptors from lists via customer configuration.	3
Ability to have default sample descriptor associations such that they can be assigned to a sample all at one time.	3
Ability to designate samples as for regulatory compliance or not for compliance and as official or unofficial.	3
Ability to designate sample priority (e.g., routine, high, urgent, etc.).	3
Ability to limit sample priority designation based on user role.	3
Ability to assign a unique sample identification that is never repeated.	3
Ability to have a sample serial/tag number (submitted by customer) that can be tracked over time.	3
Ability to login samples using the serial/tag number for reference.	3
Ability to find a sample using the lab sample unique ID by the end user.	3
Ability to find a sample using the sample serial/tag number by the end user.	3
Ability to find a sample using Laboratory Section, Project, Test, Customer name, Customer sample identification number, sample collection date, sample receipt date, or sample storage location by the end user.	3
Ability to track samples down to the individual container level.	3
Ability to track sub-samples.	3
Ability to track sample disposal or return to customer.	3
Ability to track the sample container each time the storage location changes.	3

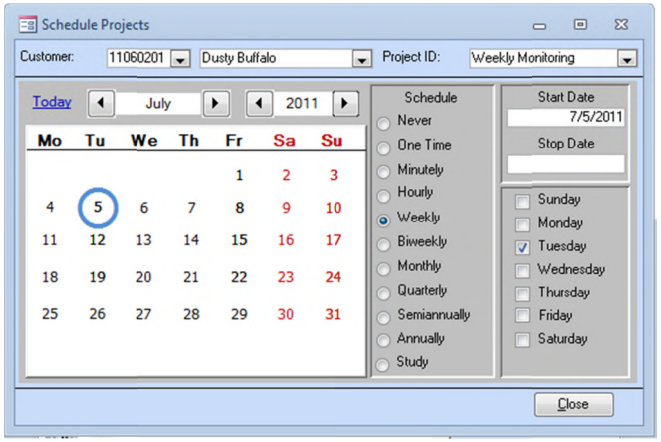




Ability to track receipt, storage locations, and disposal/return as part of the sample's chain of custody.	3
Ability to choose storage location from a predefined list.	3
Ability to add, edit, or remove storage locations from the list via customer configuration.	3
Ability to restrict possible sample storage locations based on sample category, type, matrix, or assigned test and by laboratory section.	1
Ability to manually override restrictions and choose a storage location (with audit trail comment required).	3
Ability to log environmental conditions and associate log with storage locations.	3
Ability to track storage of separate containers of the same sample in different locations.	2
Ability to restrict samples available for disposal/return to only those designated as completed or cancelled.	3
Ability to assign sample retention schedules by sample type, project, lab section, etc.	3
Ability to track sub-contracted or split samples.	3
Ability to enter data for sub-contracted or split samples with unambiguous designation for which data were sub-contracted.	3
Ability to configure workflow of sample login procedures to suit needs of several different laboratory sections.	3
Ability to automatically designate samples as hazardous (e.g., test positive for a human or animal health hazard, test above an action limit, contain hazardous chemicals, etc.)	3
Ability to manually designate samples as hazardous (e.g., test positive for a human or animal health hazard, test above an action limit, contain hazardous chemicals, etc.)	3
Ability to add customer specific sample fields to support ongoing projects.	3
Sample Identifying Information Each item listed below (on this & next page) must be a separate datum in the LIMS and should be available for data mining/searching by that item without requiring the end-user to program LIMS code or database queries.	3



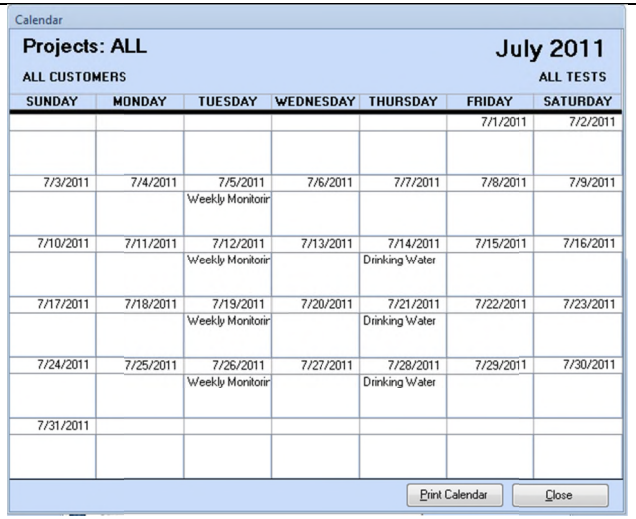
Schedule Projects is used in Sample Master® to automatically login samples from sites for tests on a routine basis. Projects can be scheduled for one time, by the minute, hourly, weekly (including every day of the week for daily), bi-weekly, monthly, quarterly, semi-annually, annually and as a Study.



Samples are automatically Prelogged in when the Task Manager runs the scheduler task. This time is defined in the Scheduler Task Setup function.

Information that is associated to a sample includes:

- Laboratory sample unique identification number
- Customer sample identification number
- Laboratory section
- Sample priority (e.g., routine, high, urgent, etc.)
- Sample serial number (mandatory for Bureau of Standards section, optional for other sections)
- Sample category
- Sample type
- Sample matrix
- Test or tests assigned to sample
- Sample collector's name
- Sample collection date
- Sample collection time
- Sample collection location
- Sample receiver's name
- Sample receipt date
- Sample receipt time
- Sample storage location
- Preservation type /storage condition
- Sample relinquisher's name (for sub-contracted/split samples)
- Sample relinquish date (for sub-contracted/split samples)
- Sample relinquish time (for sub-contracted/split samples)
- Review status
- Review date and time
- Sample container type
- Number of sample containers
- Sample designation as for regulatory compliance or not for compliance
- Customer chain-of-custody number
- Complaint number
- Note or narrative (a non-reportable intra-lab note field)

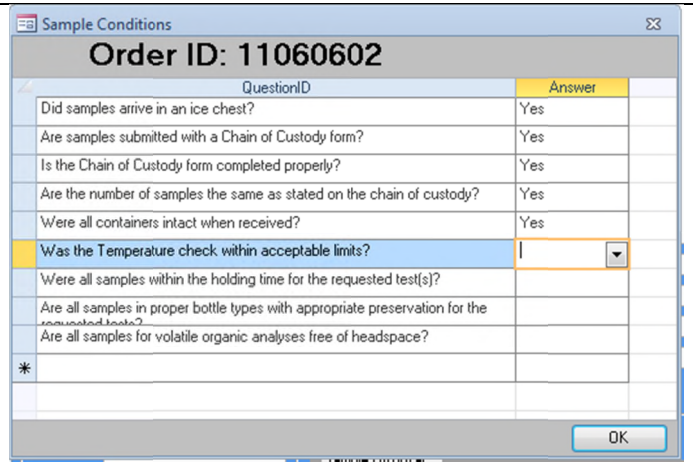


Sample Master® iMobile supports field operations with the ability to capture data in real time and on-the-fly. Sample Master® iMobile allows users to upload testing site data as it is collected, eliminating the need to manually re-enter documents and field measurements, or return hard copies to the laboratory.

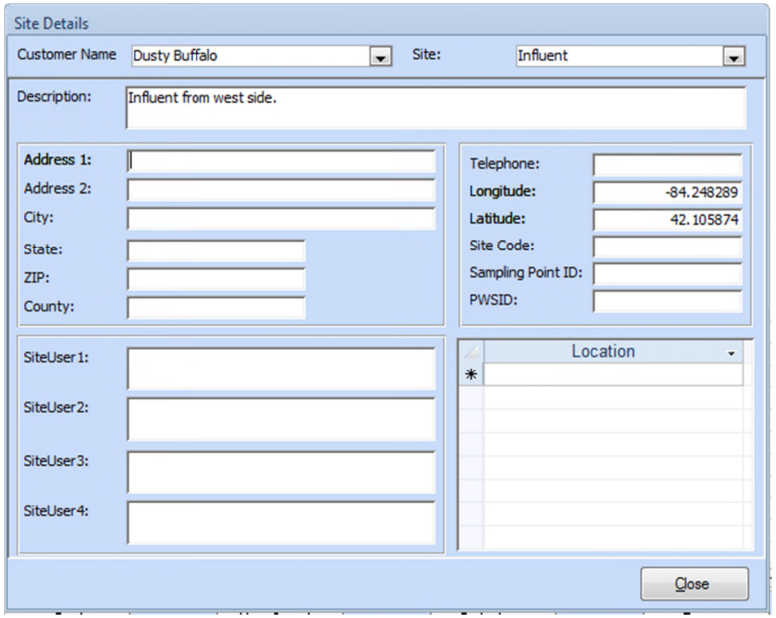
Sample storage locations may be assigned by laboratory section.

Separate containers may be tracked by creating an aliquot for each container.

The Sample Conditions questions can be edited by selecting Sample Conditions in the LIMS Maintenance module. Additional questions can be selected by the user at sample login for the selected Order ID.



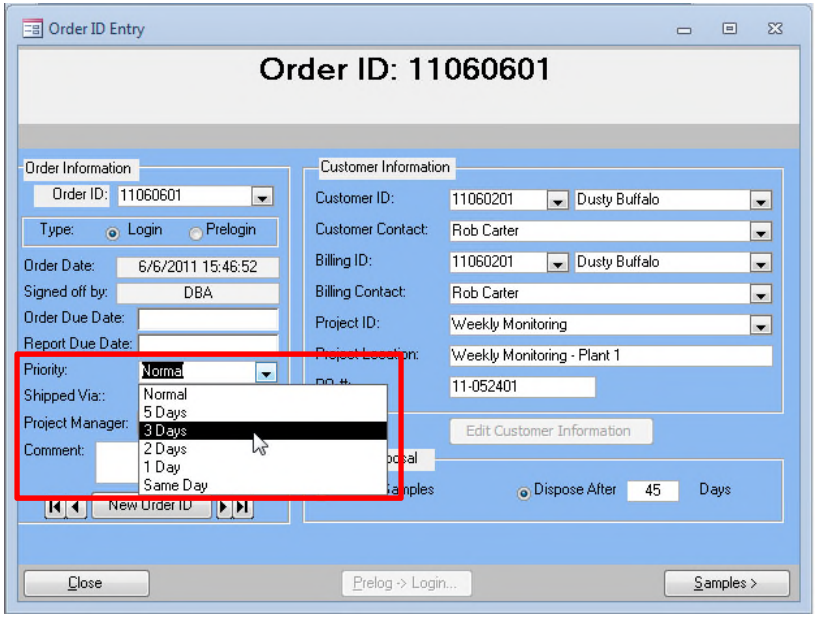
Users can include GPS coordinates (using decimal format) and multiple locations for a sampling site. The user can also enter Latitude and Longitude coordinates on the Order Details form. Sample sites may be selected at login.



The LIMS Maintenance module allows appropriately permissioned users

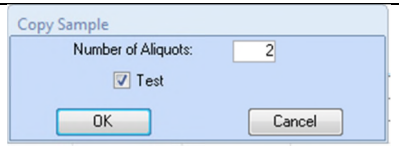
to set up sample types, matrices, and categories. These can even default based on a specific project, test or customer. Drop down lists allow users to manually select a specific description, or change a default.

Sample priorities may be designated at login, and priority designation may be limited based on a user's role.



The Master Query function allows users to search for samples across a variety of criteria, including sample ID, project, test, customer, method, etc.

If a sample needs to be split or have an aliquot created, this can be done using the Sample Aliquots function. The Aliquot function allows the user to easily log in new samples that are derived from a previously logged source sample. The Aliquot function can also be used to rerun tests on samples and report data on multiple runs. Alternatively, if tests only need to be rerun on a subset of parameters, the user can enter only the necessary tests for the aliquot. The original sample and its aliquots, each representing a different sample run, will be tied to each other automatically within the LIMS.

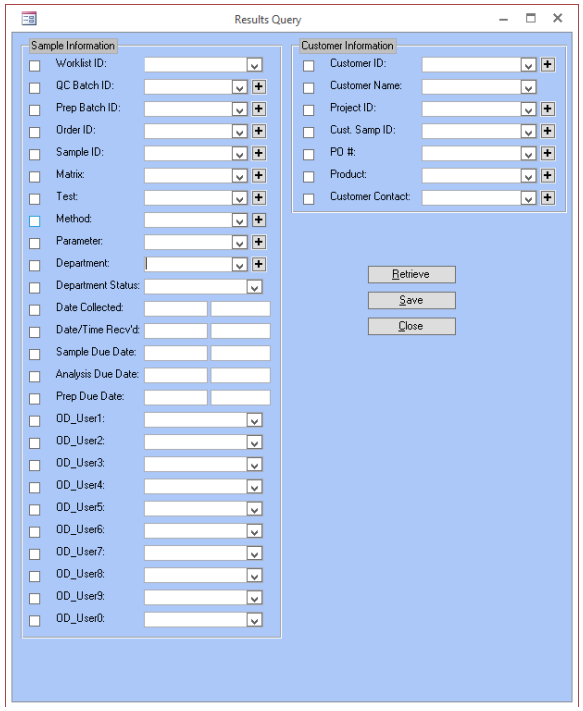


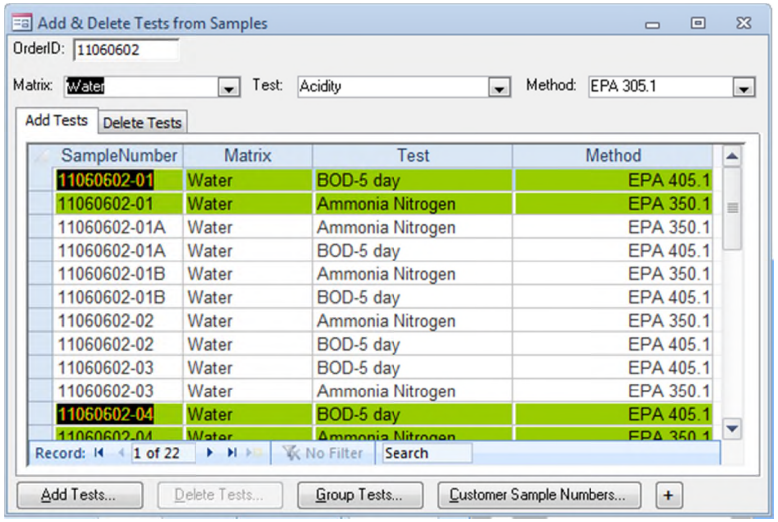
Sample Master®'s internal chain of custody allows users to track samples across storage location, and to trace samples across multiple locations.

Departments are defined to mirror the workflow through a laboratory such that routing of individual samples can be defined through the various Departments from sample login through to sample disposition.

Sample Master® offers multiple user-defined fields for the client to custom caption.

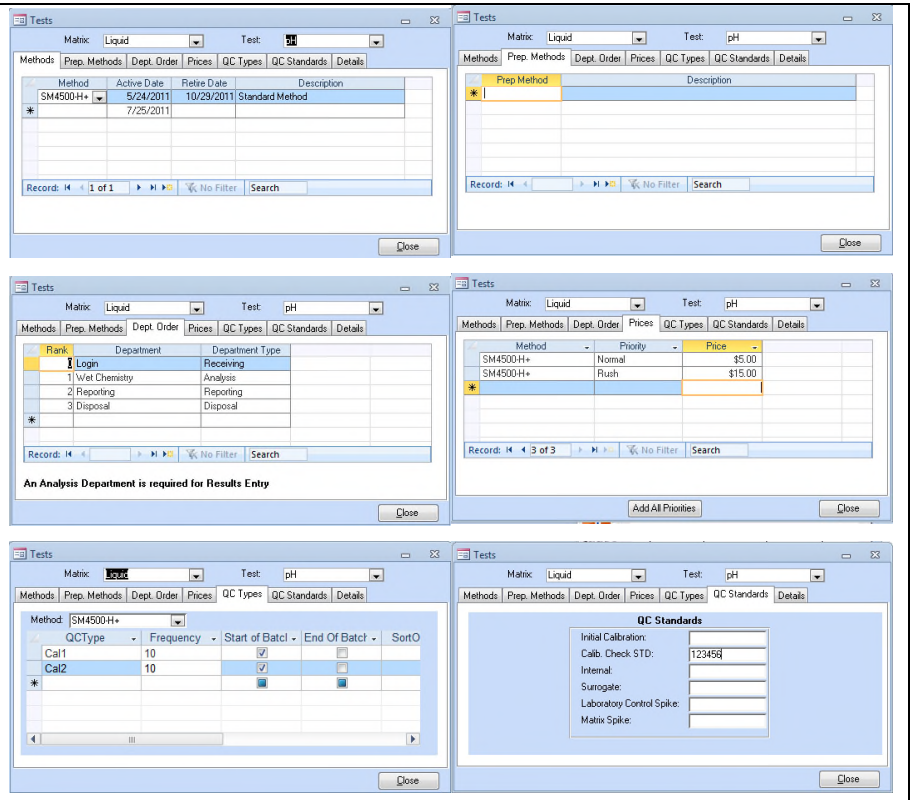
All the required sample identifying information is included in Sample Master® and may be queried via the Master Query function.



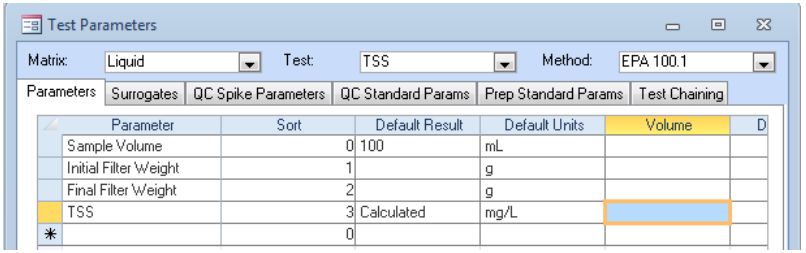
TESTS The LIMS applications software shall be able to manage test assignments. The tasks may include, but are not limited to, the following list.		**3-TESTS** In addition to a narrative description of TESTS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to assign one and assign multiple tests to one sample.	3	Tests are assigned to samples during sample login either before or after the samples arrive at the laboratory. Once login is completed, tracking the status of a sample is started by signing off the order. As the sample progresses through the laboratory, the status is changed for each test. Users have the ability to add or delete tests from multiple samples at once. Test Groups (multiple test components with each test ID) may be assigned to a sample.  Sample Master® allows authorized users to modify, add and delete standard test information contained in the LIMS Maintenance module until such time as the test has been assigned to a sample when, due to Sample Master® referential integrity, deletion and modification are not allowed. Tests associated with a sample are allowed to be modified and disassociated until such time as result validation is completed. At that time changes are prohibited without an appropriately permission user generating an audit trail with a date/time, reason for change and
Ability to add, edit, remove, and cancel tests assigned to a sample.	3	
Ability to add, edit, remove, and cancel tests either one at-a-time or all-at-once if multiple sample are selected.	3	
Ability to add tests at sample login and at any time before disposal/return.	3	
Ability to associate tests with other tests (as a "test package") and assign them to a sample together.	3	
Ability to choose a test or tests from an established test list.	3	
Ability to associate non-reportable supporting tests.	3	
Ability to add, edit, or remove tests from the established list via customer configuration.	3	
Ability to filter possible test assignments based on laboratory section, sample category, sample type, and sample matrix.	3	
Ability to manually override test assignment restrictions (with audit trail comment required).	3	
Ability to automatically assign a test based on sample collection location and sample type.	3	
Ability to manually override automatic test assignment.	3	
Ability to version tests. If an established test is changed, analysis that has been submitted but has not been initiated shall be updated to reflect the test changes, and analysis that has been initiated or completed shall not reflect the test changes.	3	
Ability to have sample condition upon receipt criteria for evaluating test validity with automatic flag when criteria are not met.	3	
Ability for sample condition flag to trigger automatic test cancelling or automatic flagging of associated data (ability to have one or the other depending on assigned test).	1	
Ability for holding time (the date and time of collection to the date and time analysis was initiated) to trigger automatic test cancelling	1	

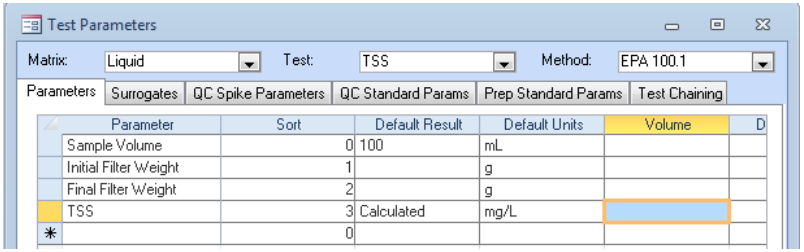
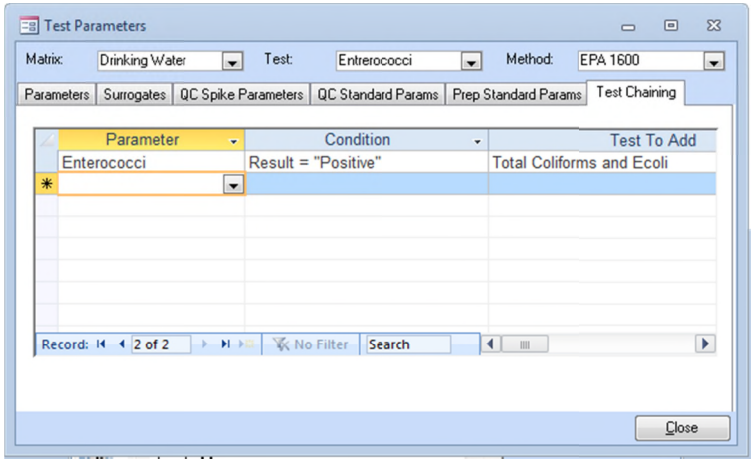
or automatic flagging of associated data (and the ability to have one or the other depending on assigned test).		signature. Sample Master® allows users to choose tests from a drop-down list. LIMS Administrators may remove (retire) a test from the established list, but may not delete any test associated with a result in order to maintain Sample Master®'s referential integrity. The Resource Management module allows users to manage analyst access to instruments and tests, based on current training/certification requirements. The LIMS Maintenance module allows specific roles or users to have access a given set of tests, and these may be overridden by a supervisor with appropriate permissions. Analysis that has not been performed will reflect any system changes to a test or method. Any analysis in progress or completed will not reflect these changes. Sample Master® tracks versions (version control) of all configurable items in the LIMS, such as QC control limits, tests, etc., and provides a full audit trail when changes are made to these items. Sample Master® allows users to pre-define a list of typical sample conditions that can be chosen during sample receiving and login. Unusual sample conditions can be entered by the user against each sample. Data qualifiers may be used to flag samples when the specified criteria are not met. Sample Master® has full ability to flag associated data based on sample conditions or holding time, and trigger notification of staff to cancel tests. A customization would be required to generate automatic test canceling. All the required test identifying information is included with the LIMS and may be queried via the Master Query function.
Ability to manually override default test cancellation (with audit trail comment required).	3	
Ability to include one and more than one preparation/extraction information as part of a test.	3	
Ability to designate one and more than one analyst as authorized to perform a test.	3	
Ability to automatically and manually assign tests to authorized analysts and sample preparation/extractionists.	3	
Ability to automatically and manually assign sample preparation/extraction to a secondary analyst other than the assigned primary analyst.	3	
Ability to add, edit, or remove authorized analysts via customer configuration.	3	
Ability to designate one and more than one instrument as authorized for use with a test.	3	
Ability to automatically and manually assign tests to authorized instruments.	3	
Ability to add, edit, or remove authorized instruments via customer configuration.	3	
Test Identifying Information Each item listed below must be a separate datum in the LIMS and should be available for data mining/searching by that item without requiring the end-user to program LIMS code or database queries. Information that is associated with a test includes: Test unique name Reference method name Parameter(s) assigned to the test Preparation/Extraction start date Preparation/Extraction start time Preparation/Extraction completion date Preparation/Extraction completion time Preparation/Extraction reference method (if separate from reference method for analysis) Preparer/Extractor's name(s)	3	

Analysis/Prep batch ID
Note or narrative
Analysis start date
Analysis start time
Analysis completion date
Analysis completion time
Analyst's name(s)



Sample Master® has full ability to flag associated data based on sample conditions or holding time, and trigger notification of staff to cancel tests. A customization would be required to generate automatic test canceling.

PARAMETERS The LIMS applications software shall be able to manage test parameters. The tasks may include, but are not limited to, the following list.		**4-PARAMETERS** In addition to a narrative description of PARAMETERS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to associate one and up to 300 parameters to a test.	3	Sample Master® supports multiple parameters for a single test. Default parameters may be used, or parameters may be project-specific.  Users with appropriate permissions are able to add, edit, remove and cancel default parameters, and generate a new default version. A one-time change is also supported. Parameters are available via a dropdown list, and may be filtered based on department. All required parameter identifying information is included with the LIMS and may be queried via the Master Query function.
Ability to have default test parameters.	3	
Ability to add, edit, remove, or cancel default parameters from a test and create a new default version.	3	
Ability to add, edit, remove, or cancel default parameters from a test and not create a new default version, i.e., change parameters one time/ad-hoc.	3	
Ability to add, edit, remove, or cancel ad-hoc parameters on selected samples one-at-a-time or all-at-once.	3	
Ability to choose parameters to add from an established list.	3	
Ability to add, edit, or remove parameters on the established list via customer configuration.	3	
Ability to filter/restrict parameter choice from list based on laboratory section, sample descriptors, or test.	3	
Ability to manually override restrictions to parameter choice (with audit trail comment required).	3	
Parameter Identifying Information Each item listed below must be a separate datum in the LIMS. Information that is associated with a parameter includes: Parameter name Expected result assigned to the parameter (e.g., ability to assign label guarantee information) Observed result (i.e., initially a blank field for data entry) Calculated result Quality control criteria/acceptable values	3	

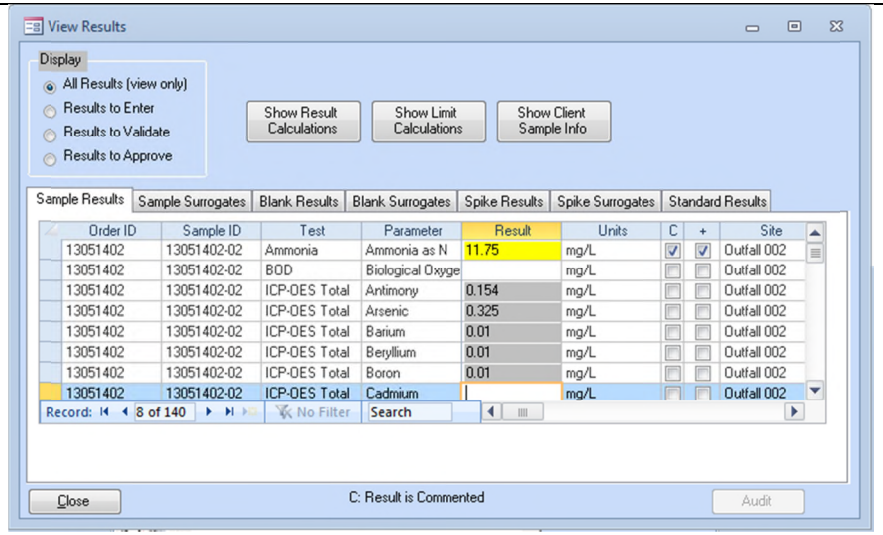
RESULTS The LIMS applications software shall be able to manage test results. The tasks may include, but are not limited to, the following list.		**5-RESULTS** In addition to a narrative description of RESULTS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to associate one and more than one result to a parameter.	3	Results may be associated with one or more parameters, and may be tracked across multiple tests.  Users may associate QC criteria with a parameter and set default values. Sample Master® supports RPD, positive and negative and standard deviation. Sample Master® can automate adding a test or an order based on a specified parameter condition. This is accomplished by adding the parameter, condition, test to add, a method to add on the Test Chaining tab. 
Ability to track results of the same parameter over multiple tests (of the same sample).	3	
Ability to support qualitative results.	3	
Ability to support quantitative results.	3	
Ability to support tests with label guarantees and specification checking.	3	
Ability to associate quality control (QC) criteria with a parameter.	3	
Ability to set default QC acceptable values for a parameter and test.	3	
Ability to add, edit, or remove default QC acceptable values for a parameter and test via customer configuration.	3	
Ability to support acceptable QC values/criteria including positive/negative, percent difference from expected result, and standard deviation from an expected result.	3	
Ability to assign an expected result (e.g., for a label guarantee) at the time of login and at any time prior to initiating analysis.	3	
Ability to automatically compare observed results with expected results and QC criteria and trigger an event.	3	
Ability to add, edit, or remove an event trigger via customer configuration.	3	
Ability to automatically compare observed results with expected results or QC criteria and trigger either cancelling or flagging that parameter (choice of trigger depending on parameter and/or test).	3	
Ability to automatically login a repeat test for the parameter that was cancelled due to failing variance from expected result or QC criteria.	3	
Ability to set the automatic login of a repeat test to a specific number of iterations per parameter or test.	3	
Ability to automatically login a second, different test based on the results of the first test (e.g., first testing for a negative/positive	3	

result, then automatically logging a quantitative test upon a positive result).		User-defined conditions that automatically initiate specific user-defined responses (event triggers) may be created/modified or overridden by users with appropriate permissions. MDL is tracked for each Analyte for every matrix, test, method combination. Also, there exists a measured results column. This column allows dilution and dry weight calculations to be performed for the final result. RPDs are calculated based on the Results for Samples and Sample Replicates and based on the Percent Recoveries for Spike Samples. RPDs are calculated by taking the absolute value of the difference of the two results and dividing by the average of the two results. Calculation example: $$\frac{\left\|0.030\,mg/L - 0.028\,mg/L\right\|}{(0.030\,\text{mg/L} + 0.028\,\text{mg/L})/2} \times 100 = 6.9\%$$
Ability to establish minimum detection level (MDL) or minimum reporting limit (MRL).	3	
Ability to compare results to minimum detection level (MDL) or minimum reporting limit (MRL) and, for a observed result below an MDL or MRL, to automatically report the MDL or MRL value.	3	
Ability to establish action limits.	3	
Ability to compare results to action limits and trigger an event.	3	
Ability to calculate results based on other results (e.g. sums) as well as test or sample level information (e.g. dry weights or dilutions)	3	
Ability to track sample disposal/return such that automatic login of tests is not performed for disposed/returned samples.	3	
Ability to control automatic login so that multiple failing parameters associated with a single test do not cascade into multiple retests being logged.	3	
Ability to add or remove automatic retest login functionality via customer configuration.	3	
Ability for results to be expressed as significant figures.	3	
Ability for results to be expressed as text.	3	
Ability to set and change a default number of significant figures for each parameter.	3	
Ability to establish custom rounding/reporting rules, (e.g., limit significant figures for results close to RL) by program, section, sample type, etc.	3	
Ability for results to be expressed as a percentage.	3	
Ability to set a result as reportable or non-reportable.	3	
Ability to set more than one result as reportable.	3	
Ability to specify which result(s) will be reported for samples with multiple results of the same parameter.	3	
Ability to prevent multiple results for the same parameter from being reported (if this is undesirable.)	3	
Ability to add an analyst comment to a result.	3	
Ability to track results of multiple instrument components (e.g., columns and detectors).	3	
Ability to set default values for results.	3	

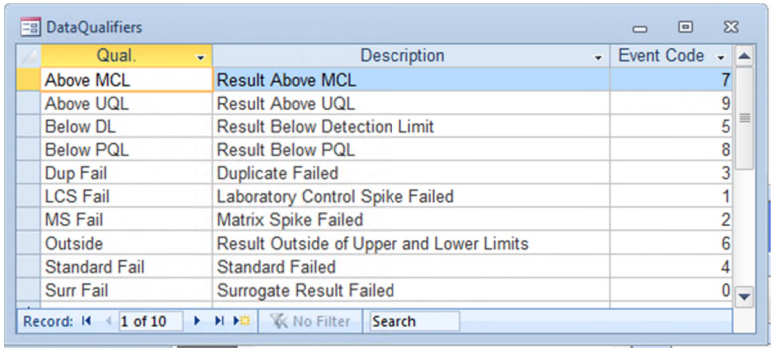
Ability to cut-and-paste or fill-down upon selection of data entry for multiple results.	3	
Ability to copy result of one test to paste to other samples with the same test one-at-a-time or all-at-once for multiple selected samples.	3	
Ability to import and export data with statistics software (such as NWA).	3	
Result Units	3	
Ability to support the absence of units for parameters.	3	
Ability to require a unit for a parameter.	3	
Ability to associate a default unit to a parameter.	3	
Ability to change a default unit.	3	
Ability to choose a unit from a list of units.	3	
Ability to automatically recalculate results if units are changed after result entry	3	
Ability to filter list of units to choices based on laboratory section.	3	
Ability to add, edit, or remove units from the list via customer configuration.	3	

CALCULATIONS The LIMS applications software shall be able to perform calculations. The tasks may include, but are not limited to, the following list.		**6-CALCULATIONS** In addition to a narrative description of CALCULATIONS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to perform one and more than one calculation on a result parameter.	3	There are many calculations in Sample Master®. These include due dates, prep due dates, analysis due dates, sample due dates, due date flag, spike and standard percent recoveries, matrix spike percent recoveries, relative percent differences, surrogate percent recoveries, etc. Sample Master® allows for multiple calculations on a result parameter and supports test chaining. MDL is tracked for each Analyte for every matrix, test, and method combination. Also, there exists a measured results column. This column allows dilution and dry weight calculations to be performed for the final result. Standard calculations such as mean, standard deviation, upper and lower control limits, and < and > symbols are built into the LIMS. Users can record raw data, such as .0954 and report a <1.0 - the LIMS will store both values; users have extreme flexibility with reporting. Significant figures, data qualifiers and the number of decimal points and units can be defined. Users can create a library of customized calculations, functions and statistics to be integrated with the LIMS. Users can add calculations directly into the LIMS (native) and then validate those calculations. Users can place calculations into Excel and then import those into the LIMS. Data can be exported into Excel for further analysis. Results can be automatically entered electronically from spreadsheet or text files. Either the spreadsheet file can have the columns of data in a defined order such as sample number, concentration, units, etc. or the first row of the spreadsheet can label the columns. Data acquired prior to a calculation modification is not affected.
Ability to perform calculations inter-test and intra-test.	3	
Ability to perform calculations inter-sample and intra-sample.	3	
Ability to automatically calculate correct minimum detection level (MDL) or minimum reporting limit (MRL) with dilutions.	3	
Ability to use comparison operators in calculations.	3	
Ability to use common mathematical formulas in calculations (e.g., average, sum, standard deviation, etc.).	3	
Ability to use logical functions in calculations (e.g., =if (logical_test, value_if_true, value_if_false) in Excel).	3	
Ability to have user generated and modifiable Excel templates for calculations on results. The LIMS must support easy setup of calculations based on vendor or user supplied Excel worksheets.	3	
Ability to natively export data to Microsoft Excel so further result calculations may be performed.	3	
Ability to natively import a calculated result from Excel	3	
Ability to automatically export and import result calculations to and from Excel without user intervention.	3	
Ability to track result data before and after each calculation.	3	
Ability to add, edit, or remove calculations on a result via customer configuration.	3	
Ability to support versions. If a calculation is added, edited, or removed, all data acquired prior to the calculation change must not be altered.	3	

FLAGS/QUALIFIERS The LIMS applications software shall be able to flag results. The tasks may include, but are not limited to, the following list.		**7-FLAGS/QUALIFIERS** In addition to a narrative description of FLAGS/QUALIFIERS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to use flags on samples, tests, parameters, and results. Flags should be visible to users and, when applicable, on reports.	3	Sample Master® immediately validates data upon entry so that warnings and reruns are indicated to the users as soon as possible. Sample Master® flags results which do not meet acceptance criteria and prevents the entry of clearly invalid data in key data entry fields. The Auto-Flag function checks for the conditions of the Data Qualifiers. For example, a duplicate is assigned to the dataset in the Results Entry form and the entered results for that Duplicate fall outside the saved control limits for that Matrix/Test/Method/Parameter for the QC Type Duplicate. Sample Master® flags results which do not meet acceptance criteria and prevents the entry of clearly invalid data in key data entry fields with color coded warning when results have exceeded limits and message boxes for warning and limit exceeders. Sample Master® has the ability to flag results (color coding) that are out of control limits even if they pass QA/QC. Comments can be added to these results. The results that are flagged will also be color coded to rapidly alert the analyst upon result entry. Flagged results can be selected and not included in charts, reports or calculations.
Ability to establish a list of possible flags and their associated definitions/information.	3	
Ability to add, edit, or remove flags from the list via customer configuration.	3	
Ability to filter available flags from list based on laboratory section, sample, test, parameter, and result.	3	
Ability to set automatic triggers so that a flag is automatically applied to an item when an event occurs via customer configuration.	3	
Ability to set automatic triggers than automatically run an event when a flag is applied via customer configuration.	3	
Ability to manually override automatic flag triggers (with audit trail comment required).	3	
Ability to automatically flag a sample, test, parameter, or result associated with a QC sample that was outside acceptable values.	3	



Users with appropriate permissions can configure the data qualifiers.



Custom workflows and triggers can be created to run specific events when a flag is generated. Users with appropriate permissions can override flags, which spawns an audit trail.

DATA REVIEW The LIMS application software shall have the ability to review and approve data. The tasks may include, but are not limited to, the following list.		**8-DATA REVIEW** In addition to a narrative description of DATA REVIEW, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to review data for approval with, at minimum, approval at a result level, test level, and sample level.	3	Sample Master® within the Result Entry function allows sample approval and release to be for a single sample, a single login group or any combination of samples selected. This is available at the test, result, sample, and project levels. Analytical results flow through a three step process - results entry, results validation and results approval. Sample Master® allows for the setting of data validation and approval levels. Sample Master® can be configured to require peer review during result validation. Sample Master® immediately validates data upon entry so that warnings and reruns are indicated to the users as soon as possible. Sample Master® flags results which do not meet acceptance criteria and prevents the entry of clearly invalid data in key data entry fields. When samples are approved the department status is changed to "Done" indicating completion of approval. Once analytical results are validated, any changes made to those results spawn a mandatory audit process which requires and documents the original value, the new value and the reason for the change. Tasks in Sample Master® follow and are assigned and scheduled to a user defined department order (as an example: Receiving to Analysis to Disposal). Sample Master® will identify tasks that require fulfillment, have been completed, or are overdue for completion within a department. Within each department, tasks can be assigned and scheduled to individuals via user defined Worklists. Sample Master® allows users with appropriate permissions to select the sample to be re-analyzed, or modify the result via spawning an audit trail. Sample Master® has the ability to flag results (color coding) that are out of control limits even if they pass QA/QC. Comments can be added to these results. The results that are flagged will also be color coded to rapidly alert the analyst upon result entry. Users with appropriate
Ability to review data for approval at a project level.	3	
Ability to assign sets of data (e.g. batches or projects) to specific users for review either automatically or manually.	3	
Ability to restrict approval of a higher review level unless the lower level review is approved.	3	
Ability to redirect a sample, test, or parameter for additional analysis as part of approval/review process.	3	
Ability to view flags and comments with a sample, test, or result at time of review.	3	
Ability to view MDLs, MRLs, and other QC information associated with a sample or test at time of review.	3	
Ability to set a requirement for data approval at all levels or none before a customer report can be generated.	3	
Ability to change requirements for data approval based on test type, sample type, project type, customer, or laboratory section.	3	
Ability to limit permission to approve data based on user roles.	3	
Ability to add comments to samples, tests, parameters, and results during review.	3	
Ability to trigger generation of final report upon approval of a project or sample.	3	
Ability to use electronic signature.	3	
Ability to use more than one electronic signature when a sample is shared by different lab sections.	3	
Ability for approval by more than one user when a sample is shared by different lab section.	3	
Ability to review and approve data from a read-only view type user license.	3	

permissions can configure the data qualifiers.

DataQualifiers

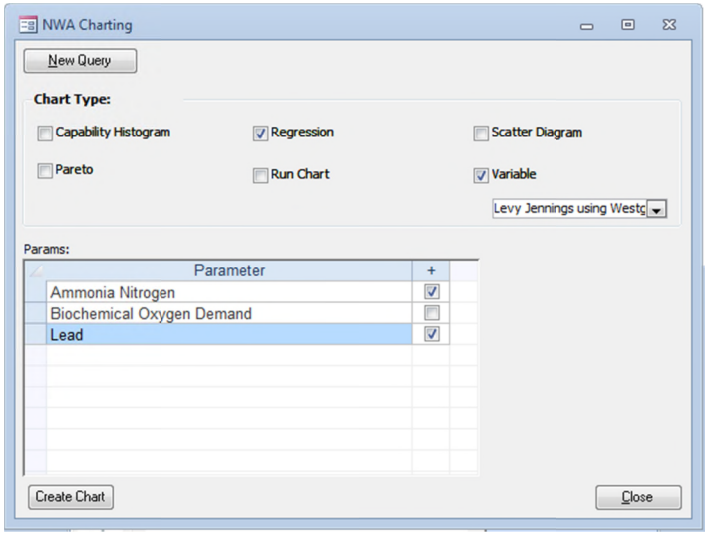
Qual.	Description	Event Code
Above MCL	Result Above MCL	7
Above UQL	Result Above UQL	9
Below DL	Result Below Detection Limit	5
Below PQL	Result Below PQL	8
Dup Fail	Duplicate Failed	3
LCS Fail	Laboratory Control Spike Failed	1
MS Fail	Matrix Spike Failed	2
Outside	Result Outside of Upper and Lower Limits	6
Standard Fail	Standard Failed	4
Surr Fail	Surrogate Result Failed	0

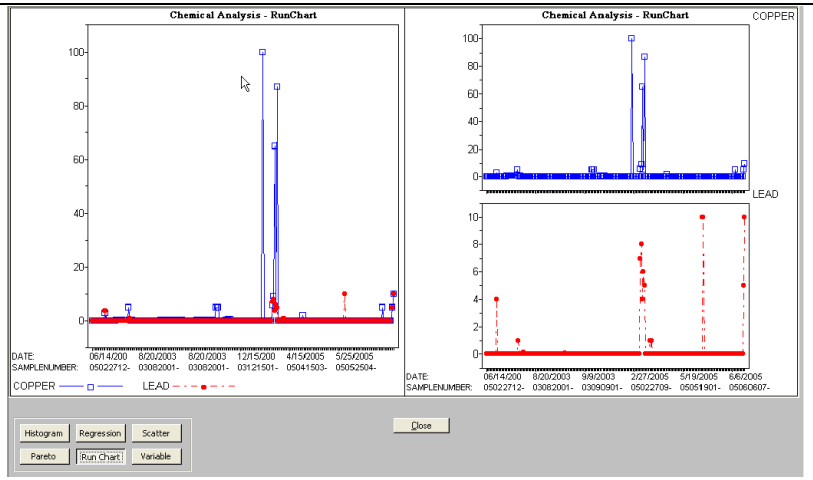
Record: 1 of 10 No Filter Search

MDL is tracked for each Analyte for every matrix, test and method combination. Also, there exists a measured results column. This column allows dilution and dry weight calculations to be performed for the final result.

Sample Master® offers many levels of permissions: none, view only, view and enter only, view, enter and validate, and view, enter, validate and approve. Permissions may be assigned based on user roles. Peer review is supported. Comments are supported throughout the data review process.

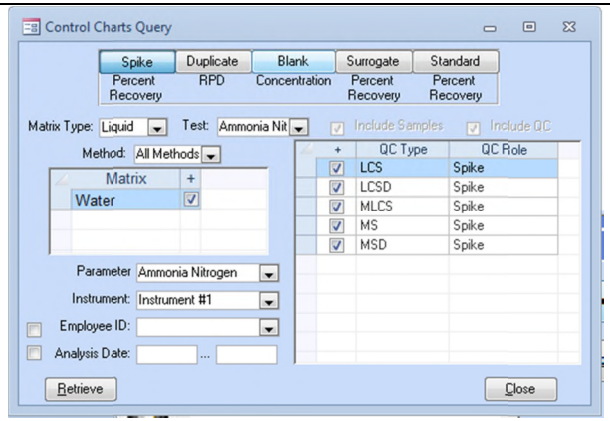
Sample Master® provides and complies with electronic signature as defined in 21 CFR Part 11. As such electronic signatures are related to results data input, peer review or validation of results data, and approval of results data.

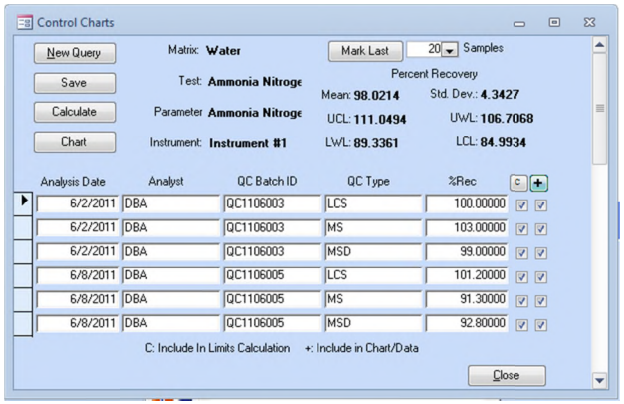
QUALITY ASSURANCE/QUALITY CONTROL The LIMS application software shall manage all aspects of quality control. The tasks may include, but are not limited to, the following list.		**9-QUALITY ASSURANCE/QUALITY CONTROL** In addition to a narrative description of QUALITY ASSURANCE/QUALITY CONTROL, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to perform trend analysis/control charting.	3	Sample Master® has a built in QA/QC module that allows clients to perform QA/QC within the LIMS, without having to learn a separate package and maintaining that package. The QA/QC module allows clients to create control charts, and automatically calculates the mean, standard deviation, one and two and three Sigma, (upper and lower control limits) that can be graphed along with the samples. For users that require more sophisticated statistical analysis, Sample Master® has been fully and successfully integrated with Northwest Analytics (NWA) SPC Packages that can be purchased through ATL (ATL integrated Active X control of the full package of NWA Quality Analyst – Statistical Analysis Package). 
Ability to automatically use the most recent 30 QC samples for control charting.	3	
Ability to automatically update QC acceptance criteria applied to results from control charting information.	3	
Ability to designate which type of QC sample will be used for control charting including positive controls, matrix spiked, and PTs.	3	
Ability to generate control charts by instrument, test, parameter, and analyst and with the ability to specify date ranges.	3	
Ability to automatically determine outliers, flag outliers, and remove them from the control chart (with audit trail comment required).	3	
Ability to manually choose which samples are to be included and excluded for control charting.	3	
Ability to use QC sample information to calculate statistical representations of data (such as method and instrument detection limits, quantitation limits, etc.).	3	
Ability to track data reported for performance evaluation programs (check samples, PTs).	3	
Ability to track data for performance evaluation programs by test, parameter, analyst, and instrument.	3	
Ability to view statistical information for results and QC samples.	3	
Ability to support CAPA process and documentation.	3	

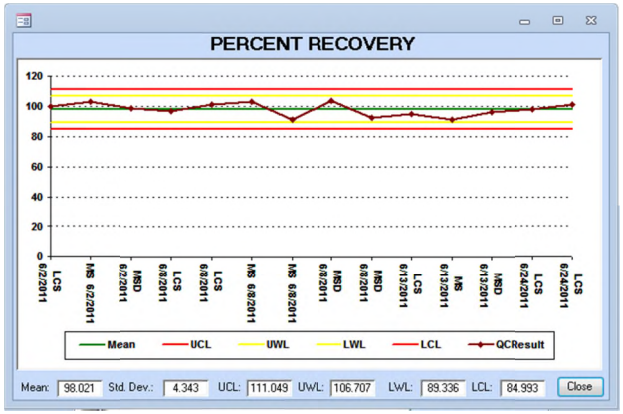


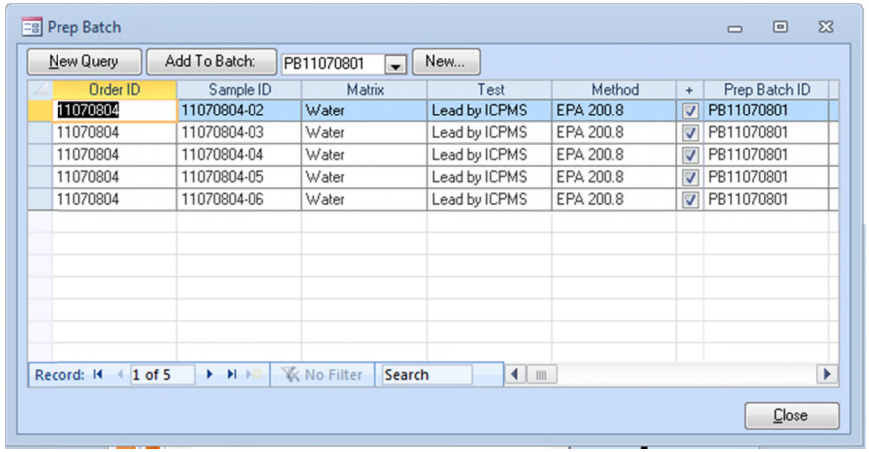
Control Charts are used in Sample Master® to view a measurement versus the warning limits and control limits calculated from a set of samples. A control chart can be generated for each parameter. There are five types of control charts you can use: blank, surrogate, duplicate, spike, and standard. Control charts can be generated separately for each parameter, instrument, employee ID or date range. Warning limits are displayed as two standard deviations from the mean and the control limits are displayed as three standard deviations from the mean.

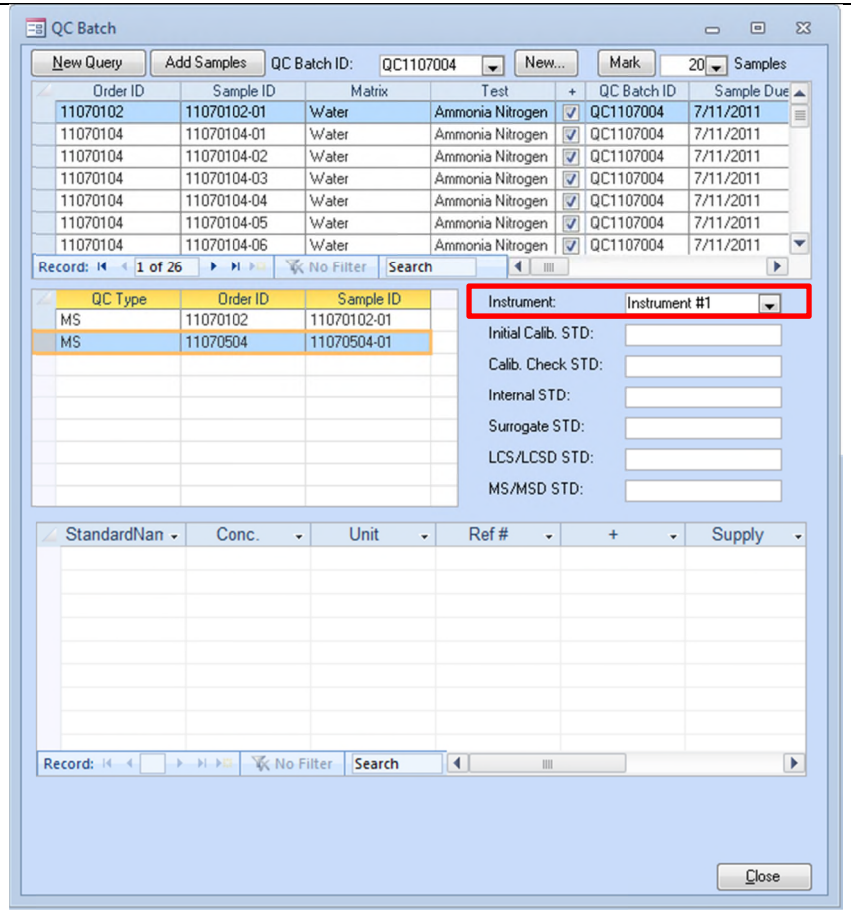
Users can select the type of control chart to generate by clicking the Spike, Duplicate, Blank, Surrogate or Standard button. Pull-down or enter the Test, Matrix, Parameter, and Instrument in the appropriate boxes.

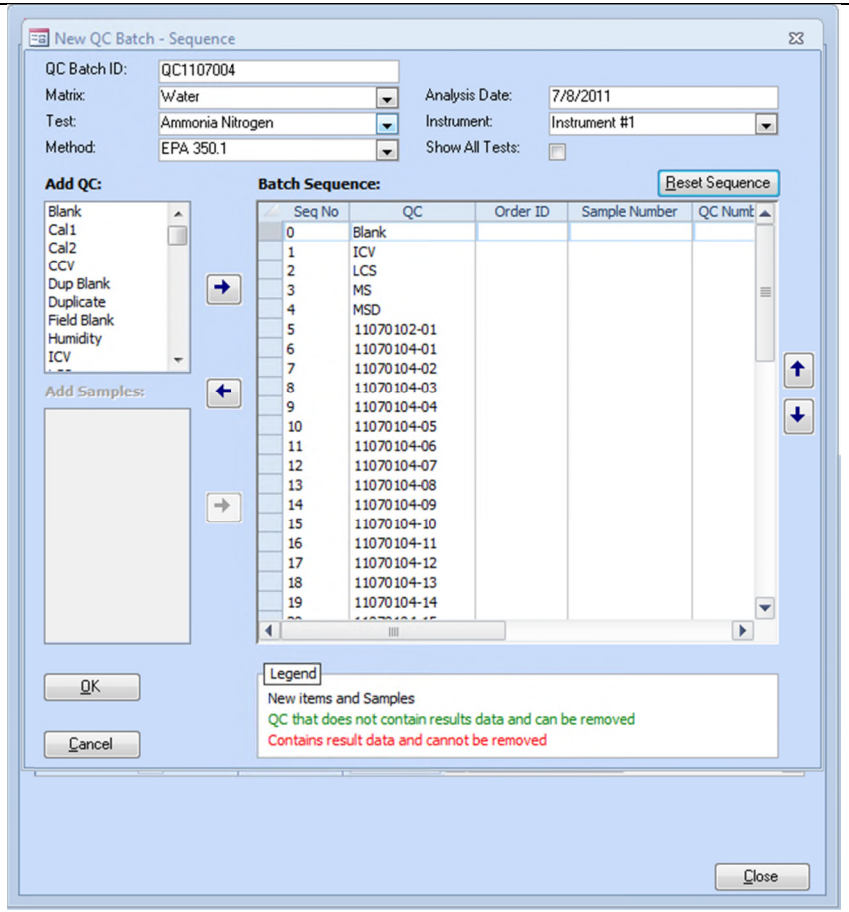

Control Charts Query
Spike
Duplicate
Blank
Surrogate
Standard
Percent Recovery
RPD
Concentration
Percent Recovery
Percent Recovery
Matrix Type: Liquid
Test: Ammonia Nit
Include Samples
Include QC
Method: All Methods
Matrix
Water
QC Type
QC Role
LCS
Spike
LCSD
Spike
MLCS
Spike
MS
Spike
MSD
Spike
Parameter Ammonia Nitrogen
Instrument: Instrument #1
Employee ID:
Analysis Date:
Retrieve
Close

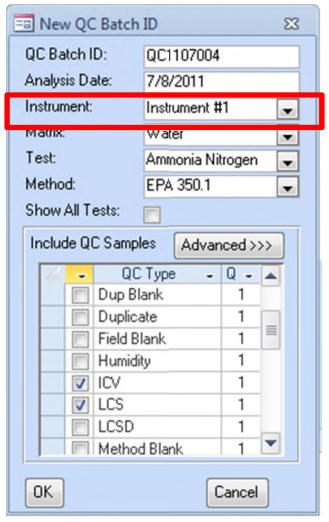

Control Charts
New Query
Save
Calculate
Chart
Matrix: Water
Test: Ammonia Nitroge
Parameter Ammonia Nitroge
Instrument: Instrument #1
Mark Last
20
Samples
Percent Recovery
Mean: 98.0214
Std. Dev.: 4.3427
UCL: 111.0494
UWL: 106.7068
LWL: 89.3361
LCL: 84.9934
Analysis Date
Analyst
QC Batch ID
QC Type
%Rec
6/2/2011 DBA QC1106003 LCS 100.00000
6/2/2011 DBA QC1106003 MS 103.00000
6/2/2011 DBA QC1106003 MSD 99.00000
6/8/2011 DBA QC1106005 LCS 101.20000
6/8/2011 DBA QC1106005 MS 91.30000
6/8/2011 DBA QC1106005 MSD 92.80000
C: Include In Limits Calculation +: Include in Chart/Data
Close

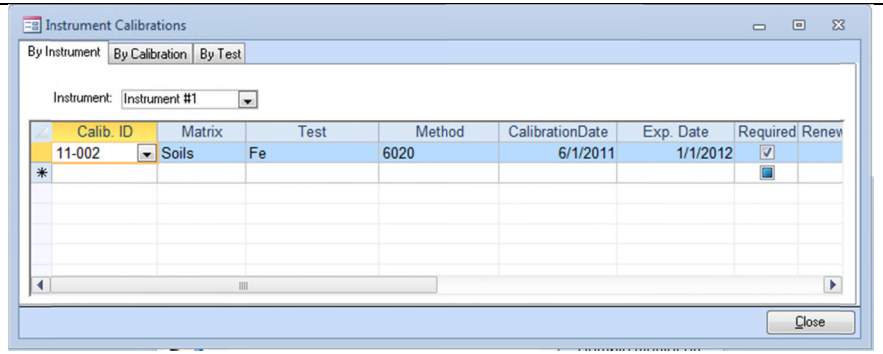

PERCENT RECOVERY
120
100
80
60
40
20
0
LCS 6/2/2011
MS 6/2/2011
MSD 6/2/2011
LCS 6/8/2011
LCS 6/8/2011
MS 6/8/2011
MS 6/8/2011
MSD 6/8/2011
MSD 6/8/2011
LCS 6/13/2011
MS 6/13/2011
MSD 6/13/2011
LCS 6/24/2011
LCS 6/24/2011
Mean
UCL
UWL
LWL
LCL
QCResult
Mean: 98.021
Std. Dev.: 4.343
UCL: 111.049
UWL: 106.707
LWL: 89.336
LCL: 84.993
Close

BATCHING The LIMS application software shall have the ability to create and use batches. The tasks may include, but are not limited to, the following list.		**10-BATCHING** In addition to a narrative description of BATCHING, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to add, edit, and remove sample batch templates via customer configuration.	3	Sample Master® has the ability to allow users to build their own custom templates and add to the off-the shelf functionality of the LIMS. A unique batch ID is assigned to each preparation batch. Clients have the ability to modify the batch ID sequence.  Specific samples may be grouped to run in a QC batch. Users with appropriate permissions are able to add, edit and remove QC sample assignments. QC batch sequence may be defined based on client specific requirements. Equipment and reagents may be associated with specific batches.
Ability to assign unique batch numbers to a group of samples processed together for extraction/preparation.	3	
Ability to assign unique batch numbers to a group of samples processed together for analysis.	3	
Ability to select samples from different preparation/extraction batches to group as an analytical batch.	3	
Ability to configure batch number format via customer configuration.	3	
Ability to automatically assign QC samples to be run in a batch.	3	
The system will natively provide the ability to add, edit, or remove QC sample assignments.	3	
Ability to designate mandatory order and frequency of QC samples in a batch.	3	
Ability to auto-populate batch list with samples based on priority.	3	
Ability to manually change the order of samples in a batch.	3	
Ability to associate equipment/reagents with batches.	3	

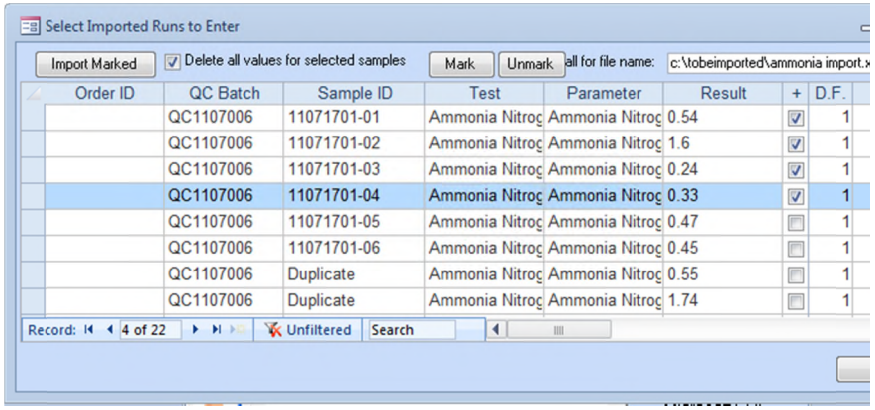

QC Batch
New Query
Add Samples
QC Batch ID:
QC1107004
New...
Mark
20
Samples
Order ID
Sample ID
Matrix
Test
+
QC Batch ID
Sample Due
11070102
11070102-01
Water
Ammonia Nitrogen
QC1107004
7/11/2011
11070104
11070104-01
11070104-02
11070104-03
11070104-04
11070104-05
11070104-06
Record:
1 of 26
No Filter
Search
QC Type
MS
11070504
11070504-01
Instrument:
Instrument #1
Initial Calib. STD:
Calib. Check STD:
Internal STD:
Surrogate STD:
LCS/LCSD STD:
MS/MSD STD:
StandardNan
Conc.
Unit
Ref #
Supply
Close


New QC Batch - Sequence
QC Batch ID:
QC1107004
Matrix:
Water
Test:
Ammonia Nitrogen
Method:
EPA 350.1
Analysis Date:
7/8/2011
Instrument:
Instrument #1
Show All Tests:
Add QC:
Blank
Cal1
Cal2
CCV
Dup Blank
Duplicate
Field Blank
Humidity
ICV
Add Samples:
Batch Sequence:
Reset Sequence
Seq No
QC
Order ID
Sample Number
QC Numb
0 Blank
1 ICV
2 LCS
3 MS
4 MSD
5 11070102-01
6 11070104-01
7 11070104-02
8 11070104-03
9 11070104-04
10 11070104-05
11 11070104-06
12 11070104-07
13 11070104-08
14 11070104-09
15 11070104-10
16 11070104-11
17 11070104-12
18 11070104-13
19 11070104-14
OK
Cancel
Legend
New items and Samples
QC that does not contain results data and can be removed
Contains result data and cannot be removed
Close

INSTRUMENTATION The LIMS application software shall have the ability to track instrument use and maintenance and have the ability to interface directly with instruments. The tasks may include, but are not limited to, the following list.		**11-INSTRUMENTATION** In addition to a narrative description of INSTRUMENTATION, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to log instrument analytical batches.	3	Instrument integration is a key feature of any LIMS; Sample Master® offers a full suite of integration tools. ATL has worked with more than 450 different instruments importing data into LIMS. After the initial configuration, importing results from instruments or sub contract laboratories is as easy as dropping the data file in a defined folder. Sample Master® monitors these file drop locations and when a new file is present it will parse, import and store the data so that analysis and other users can have access to the data from the LIMS. Data can be imported from an assortment of files: TXT, CSV, XLS, PRN, and XML for example. Sample Master® supports both uni and bi-directional instrument integration and can create worklists that aid the analyst in loading instrument data. These worklists can also be barcoded for increased speed and accuracy, especially important for high throughput laboratories.  The Resource Management module allows users to track and schedule maintenance, either one time or on a recurring basis.
Ability to log instrument maintenance.	3	
Ability to schedule instrument maintenance with or without automatic re-occurrence.	3	
Ability to export data electronically via instrument interface.	3	
Ability to allow analyst to review and approve instrument data before sending to LIMS.	3	
Ability to configure instrument interfaces for the specific tests analyzed with the instrument and not a generic .dll parser.	3	
Ability to interface bi-directionally, with the LIMS populating sample sequence tables/sample file information at the instrument workstation (for all software that will accept such file transfers).	3	
Ability to automatically match tests to instrument data files.	3	

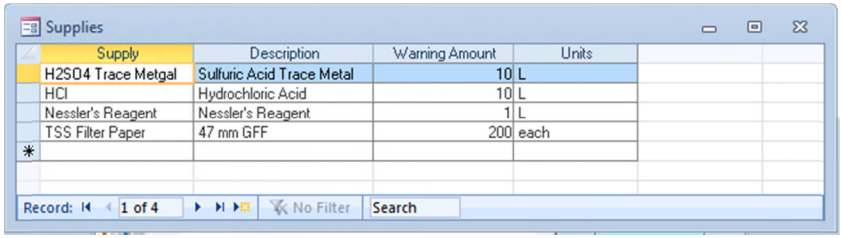


The Electronic Data Transfer (EDT) module supports instrument interface and transfer of data, either uni- or bi-directional (for instruments that support this option). ATL engineers will work with IDALS to develop a Requirements Document (RD) for each instrument parser to ensure data is mapped properly and all required fields are included.

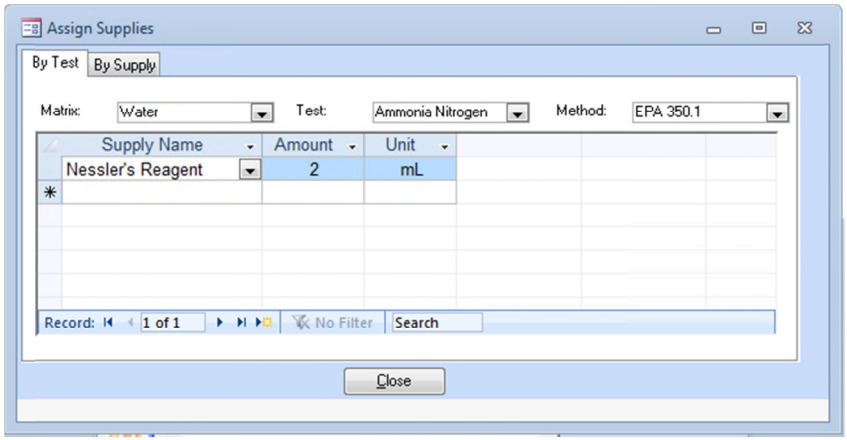


TRACEABILITY The LIMS application software shall have the ability to associate standards, media, reagents, containers and other supplies to projects, batches, samples, or tests. The tasks may include, but are not limited to, the following list.		**12-TRACEABILITY** In addition to a narrative description of TRACEABILITY, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to associate standards, media, reagents, containers and other supplies to projects, batches, samples, or tests.	3	Sample Master® automatically generates an audit trail that makes it possible to trace the history of any particular piece of data. The various steps involved in obtaining a defendable result from sample login through to sample disposal are electronically documented in correspondence with integrated Sample Master®'s modules that maintain: • Various versions of test methods, dates of activation and retirement • Training record management for analysts and re-certification dates • Full on-screen audit trail on results • Complete chain of custody with date/time stamps • Chemical inventory, lot numbers, expiration dates and storage information • Instrument maintenance, calibration and repair logs • Control charts and internal laboratory standards tracking • Subcontracting sample tracking • Reporting templates and EDDs (electronic data deliverables) and much more. Sample Master®'s integrated NELAP compliant features are recognized by quality control managers and laboratory experts as an effective platform to accelerate accreditation and ease the burden of maintaining ongoing compliance. Sample Master®'s Chemical Inventory module allows clients to track supplies and vendors. It provides the ability to assign prices to supplies, track lot numbers and assign expiration dates. Clients can receive and make supplies, reconcile them and update supplies used in sample analysis, track lot and expiration date information. Sample Master® will warn users when stock is running low and in need of replenishment, giving clients ample time to place an order and saving clients the
Ability to restrict use of these items based on predefined criteria (e.g. expiration date) and/or identify questionable items during review.	3	
Ability to maintain an inventory of chemicals, standards, media, etc. Information must include, at minimum: assigned unique ID, date received, expiration date, date discarded, chemical name, manufacturer, lot, amount received, and a link to its certificate of analysis.	3	
Ability to associate chemical inventory with a purchase order or PO number.	3	
Ability to use inventory to maintain a constant level of supplies (reordered due to low quantity or nearing the expiration date).	3	
Ability to use inventory to log working standard preparation. Information must include, at minimum: assigned unique ID, date prepared, date discarded, test method, final solvent/matrix, final concentration, a link/reference to the unique ID of each standard and reagent used in the preparation, and a expiration date for the working standard based on the expiration date of the first to expire standard or reagent used in its preparation.	3	
Ability to generate inventory logs/reports.	3	
Ability to generate working standards logs/reports.	3	
Ability to print labels for chemicals and working standards that must include their unique identification.	3	
Ability to link/attach MSDSs to inventory that is retrievable by users.	3	

inconvenience of an out of stock supply.



Standards, media, reagents, containers and supplies may be associated with a project, batch, sample or test, and usage may be limited to products that are not expired, or within a specific parameter.



Clients can track suppliers, amounts, lot numbers, expiration dates, purchase orders, etc.

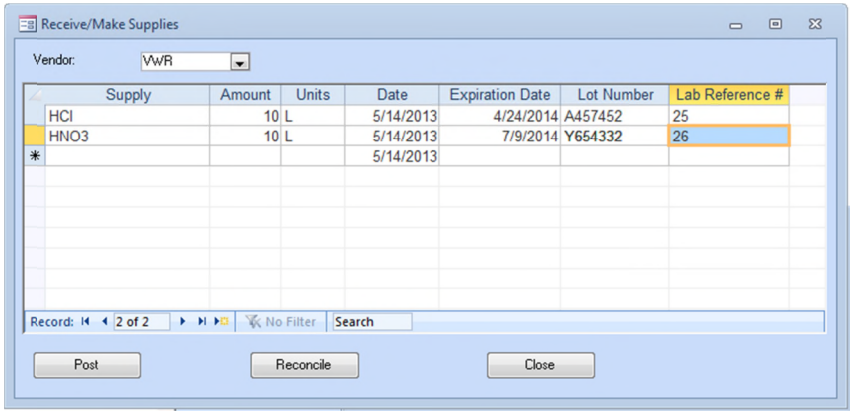
Several standard reports exist in Sample Master®, including inventory logs, expiration logs, and standards logs. Users with appropriate permissions may modify existing reports to meet specific requirements. This includes labels for chemical inventory.

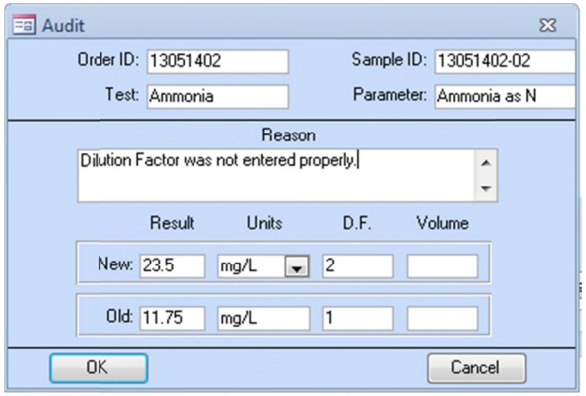
Supplies Expiring within 2 Weeks

Report Date: Monday, October 05, 2015

Expiration Date	Supply Name	Lot Number	Vendor
6/1/2012	36N Sulfuric Acid	754564463	2112880
10/31/2013	Cadmium Columns	222354	2112880
8/12/2012	Ortho Phosphate 1000 mg/l	128974	2112880
10/16/2013	36N Sulfuric Acid	080793807727	2112880
3/16/2013	Cadmium Columns	01213007	2112880
10/5/2013	36N Sulfuric Acid	654654312	2112880

Attaching MSDS to all chemicals in the Sample Master® Chemical Inventory module is supported.

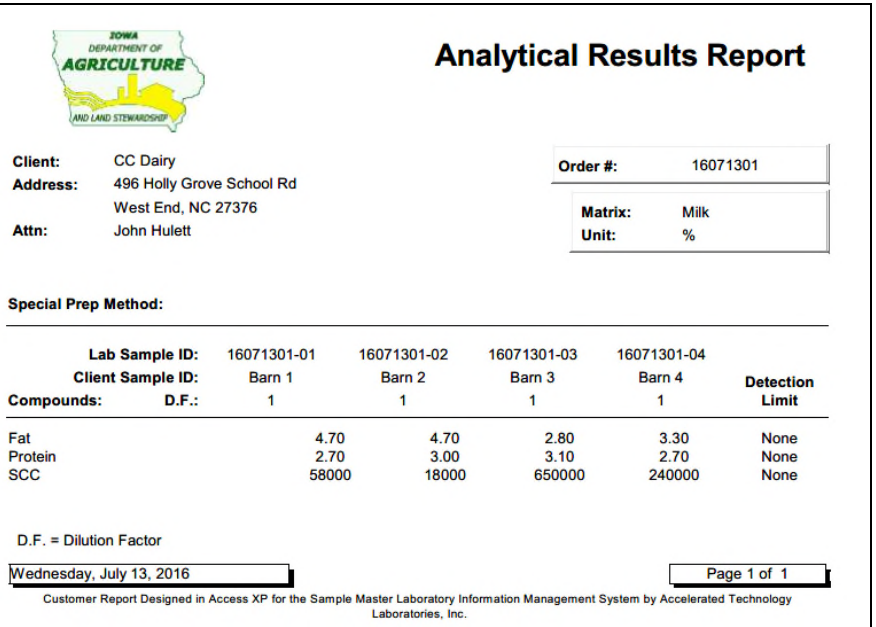


AUDIT TRAIL The LIMS application software shall protect information and data with respect to authorization rules and include an audit trail. The tasks may include, but are not limited to, the following list.		**13-AUDIT TRAIL** In addition to a narrative description of AUDIT TRAIL, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to provide an audit trail for any addition to, change to, removal of, or cancellation of projects, samples, tests, parameters, or results, and the minimum amount of information that must be logged in the audit trail includes: date, time, user, original value, new value, and reason for change.	3	For audit purposes, Sample Master® tracks all sample related activity by date, user, physical location and Department. Analytical results flow through a three step process - results entry, results validation and results approval. Once analytical results are validated, any changes made to those results spawn a mandatory audit process which requires and documents the original value, the new value and the reason for the change. This audit record is automatically stamped with the user making the change and the date and time the change was made. An audit trail report can be viewed, printed and exported via the Sample Master® Audit Trail function. There is also functionality only available to the database administrator to view any and all changes to each table of the database in a full audit mode. The system is CFR 21 chapter 11 compliant and electronic signatures are utilized throughout the LIMS. Changes to samples that have been approved can only be made by clicking the audit button during result entry. All information about the change is recorded including the new and previous result, who, when and why the change was made. All samples with an audit trail can be retrieved with the "Master Query". 
Ability to provide an audit trail for approval of projects, samples, or tests and for designating a result as reportable, and the minimum amount of information that must be logged in the audit trail includes: date, time, and user.	3	
Ability to provide an audit trail for changes to user roles and permissions.	3	
Ability to add and view audit trail comments.	3	
Ability to run queries against audit trail data.	3	

DOCUMENT TRACKING The LIMS application software shall have the ability to support versioning of documents and worksheets. Any change requires permission limited by user role. Once approved, the new version is the only version available for viewing and any outstanding tests should be updated to the new version. The tasks may include, but are not limited to, the following list.		**14-DOCUMENT TRACKING** In addition to a narrative description of DOCUMENT TRACKING, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to link/attach documents and worksheets to a project, sample, test, or parameter.	3	Sample Master® allows for the linking of method references and documents to Tests and Parameters. Method documents can easily be viewed by the user. Clients can lock SOP files so that only users with permissions can make any changes; all others would access a read-only file. Sample Master® tracks versions (version control) of all configurable items in the LIMS, such as QC control limits and detection limits, and provides a full audit trail when changes are made to these items. Method documents, SOPs or other lab documents pertinent to testing can be linked to each test. Once linked, these documents can be directly viewed by the user. As often these documents may be versioned or expire, Sample Master® provides the ability to activate or retire these linked documents on user defined dates. Sample Master®'s Task Manager may be used to schedule review and approval of documents.
Ability to limit document retrieval to a read-only version for users.	3	
Ability to support versioning of documents and worksheets. Any change requires permission limited by user role. Once approved, the new version is the only version available for viewing and any outstanding tests should be updated to the new version.	3	
Ability to archive previous versions of documents and worksheets.	3	
Ability to schedule document review and approval.	3	

REPORTS The LIMS application software shall generate reports for samples, quality control, and management purposes. The tasks may include, but are not limited to, the following list.		**15-REPORTS** In addition to a narrative description of REPORTS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to create and configure templates for all documents produced by the LIMS (COCs, work lists, sample reports, invoices, etc.) via customer configuration.	3	Sample Master® has the ability to allow users to build their own custom templates and add to the off-the shelf functionality of the LIMS. This includes CoCs, work lists, reports, invoices and other items. Templates may be modified and copied by users with appropriate permissions. Templates may be created for Word, Excel, Access and Crystal. Sample reports may include multiple tests, parameters and tests across sections. Reports may be generated automatically, based on specific triggers. Users may create reports that meet specific requirements; this includes adding/excluding comments, associating QC results, including company logos or barcodes, etc. Sample Master® allows users to generate preliminary and final reports, and designate these reports as such. Only users with appropriate permissions are able to create, modify and print reports. Worksheets may be assigned to a test, and modified by users with appropriate permissions. QC Sample Data may be used to generate client reports, based on user specifications. Based on your configuration preferences, preliminary results are always available via the Result Point® web portal. Report reissue designations and report ID's are not currently available in Sample Master®. A customization would be required to develop this functionality.
Ability to generate a template for Microsoft Word, Excel, Access, and Crystal Reports.	3	
Ability to include multiple tests and parameters on a sample report.	3	
Ability to include multiple tests from different sections on a sample report.	3	
Ability to use multiple sample report formats for a test with the test result automatically triggering which report format is generated.	3	
Ability to report associated QC results with sample results.	3	
Ability to include and exclude statements on reports for lab accreditation or certification, disclaimers, etc. based on test performed.	3	
Ability to report results before all levels of verification/review are complete and distinguish results as preliminary.	3	
Ability to report partial results of a sample and distinguish results as incomplete.	3	
Ability to re-issue customer reports and re-issues are unambiguously designated as such. Re-issues must have unique report ID and a reference to the superseded report ID.	0	
Ability to retain all versions of final sample reports.	3	
Ability to create new reports ad-hoc.	3	
Ability to restrict report creation, modification, and printing capabilities based on user roles, most current version of report, and project, sample, and tests status.	3	
Ability to create worksheets and associate them with tests.	3	
Ability to add, edit, and remove worksheets associated with tests via customer configuration.	3	

Ability to generate reports for quality control samples.	3
Ability to print a chain-of-custody form for pre-logged samples.	3
Ability to print a chain-of-custody form ad-hoc.	3
Ability to print reports with a consistent format on a variety of printers.	3
Ability to distribute reports via email and facsimile.	3
Ability to export reports in multiple file formats, including but not limited to CSV, XLS, XML, TXT, and DOC formats.	3
Ability to print labels for samples prior to or after collection.	3
Ability to generate reports (work lists) that analysts can use to identify samples waiting for analysis.	3
Ability to generate reports of sample priority, sample status/lifecycle, and turn-around times filterable by user, test, parameter, and holding time.	3
Ability to generate reports of sample counts filterable by laboratory section, user, sample type, sample category, sample matrix, test, repeated tests, and holding time.	3
Ability to generate lists for samples available for disposal/return.	3
Ability to generate a report for all parameters, tests, and samples that did not pass QC criteria.	3
Ability to group queries/reports based on user/lab section.	3
Sample Reports Ability to generate sample reports. Sample reports must include, at minimum (listed on this page & next page): Unique report ID Report title ODAFF LSD address and contact information Customer name and address Sample collector/submitter Project name Complaint number, when applicable Lab sample ID Customer sample ID Sample category Sample type Sample matrix	3 3 3



IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

Analytical Results Report

Client: CC Dairy
Address: 496 Holly Grove School Rd
West End, NC 27376
Attn: John Hulett

Order #: 16071301
Matrix: Milk
Unit: %

Special Prep Method:

Compounds:	Lab Sample ID:	16071301-01	16071301-02	16071301-03	16071301-04	Detection Limit
	Client Sample ID:	Barn 1	Barn 2	Barn 3	Barn 4	
	D.F.:	1	1	1	1	
Fat		4.70	4.70	2.80	3.30	None
Protein		2.70	3.00	3.10	2.70	None
SCC		58000	18000	650000	240000	None

D.F. = Dilution Factor

Wednesday, July 13, 2016 Page 1 of 1

Customer Report Designed in Access XP for the Sample Master Laboratory Information Management System by Accelerated Technology Laboratories, Inc.

Received date
Completed date
Tests
Test method name
Reference to test certification, when applicable (e.g., ISO 17025 or ODEQ Lab 9927)
Test start date
Test start time
Test completion date
Test completion date
Parameters
Expected Results (for label guarantees)
Results
Units
Flags and their associated definitions
Analyst's comments
Approver's signature
Report ID/Document control
Number of current page and total number of pages

Report of Analysis

For: CC Dairy
496 Holly Grove School Rd
West End, NC 27376
Attn: John Hulett

Project Manager: _____ 13-Jul-16

Client Sample ID: Barn 1 **Lab Sample ID:** 16071301-01
Site: **Collection Date:** 7/13/2016 1:48 PM

Analyte	Method	Sample Result	Detect Limit	Analyst	Anal. Date
SCC	FDA-2400d	58000 cell/mL		Sgreen	
Fat	IA DOA	4.70 %		Sgreen	
Protein	IA DOA	2.70 %		Sgreen	

Client Sample ID: Barn 2 **Lab Sample ID:** 16071301-02
Site: **Collection Date:** 7/13/2016 1:48 PM

Analyte	Method	Sample Result	Detect Limit	Analyst	Anal. Date
SCC	FDA-2400d	18000 cell/mL		Sgreen	
Fat	IA DOA	4.70 %		Sgreen	
Protein	IA DOA	3.00 %		Sgreen	

Client Sample ID: Barn 3 **Lab Sample ID:** 16071301-03
Site: **Collection Date:** 7/13/2016 1:48 PM

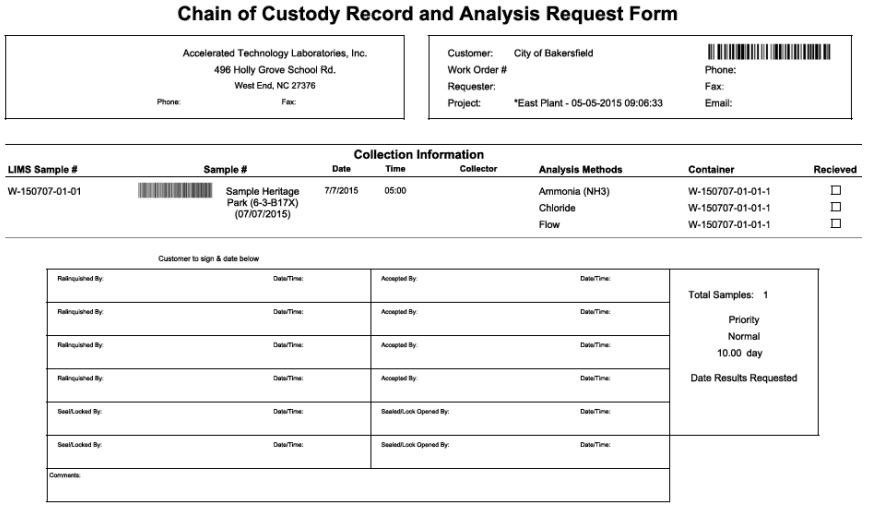
Analyte	Method	Sample Result	Detect Limit	Analyst	Anal. Date
SCC	FDA-2400d	650000 cell/mL		Sgreen	
Fat	IA DOA	2.80 %		Sgreen	
Protein	IA DOA	3.10 %		Sgreen	

Client Sample ID: Barn 4 **Lab Sample ID:** 16071301-04
Site: **Collection Date:** 7/13/2016 1:48 PM

Analyte	Method	Sample Result	Detect Limit	Analyst	Anal. Date
SCC	FDA-2400d	240000 cell/mL		Sgreen	
Fat	IA DOA	3.30 %		Sgreen	
Protein	IA DOA	2.70 %		Sgreen	

Sample Master® allows for the printing of an external Chain of Custody (COC) to be used for field sample collection. There is an internal COC form that clients can begin using right out of the box. Any external COC, whether printed from Sample Master® or client specific, can then be attached to the samples being logged into Sample Master® for easy retrieval when required. Regarding internal (in the lab) COC, Sample Master® defines the physical storage location of each sample as well as which analyst has accepted custody of the sample via the Chain of

Custody function. Users that have a scanner available often scan in any documentation that arrived with the sample and link that to the order. COCs may be printed on demand or automatically at prelog.



Chain of Custody Record and Analysis Request Form

Accelerated Technology Laboratories, Inc.
496 Holly Grove School Rd.
West End, NC 27376
Phone: Fax:

Customer: City of Bakersfield
Work Order #
Requester:
Project: *East Plant - 05-05-2015 09:06:33
Phone:
Fax:
Email:

Collection Information

LIMS Sample #	Sample #	Date	Time	Collector	Analysis Methods	Container	Recieved
W-150707-01-01	Sample Heritage Park (6-3-B17X) (07/07/2015)	7/7/2015	05:00		Ammonia (NH3)	W-150707-01-01-1	☐
					Chloride	W-150707-01-01-1	☐
					Flow	W-150707-01-01-1	☐

Customer to sign & date below

Relinquished By:	Date/Time:	Accepted By:	Date/Time:	Total Samples: 1
Relinquished By:	Date/Time:	Accepted By:	Date/Time:	Priority
Relinquished By:	Date/Time:	Accepted By:	Date/Time:	Normal
Relinquished By:	Date/Time:	Accepted By:	Date/Time:	10.00 day
Seal/Locked By:	Date/Time:	Sealed/Lock Opened By:	Date/Time:	Date Results Requested
Seal/Locked By:	Date/Time:	Sealed/Lock Opened By:	Date/Time:	
Comments:				

Sample Master® contains powerful reporting functions that allow an unlimited number of user definable custom reports to be created. Over 5 dozen standard reports are included with Sample Master®; which can all be modified. A few of the many reporting features are listed below.

- Automatic reporting and invoicing for completed orders
- Function for clients to call-up and retrieve only their sample information
- Direct printing of reports to user selectable printer, fax, email or Internet
- User access, with proper permissions, to all reports for modification with Microsoft Access®
- User defined reporting order for results
- User defined decimals or significant figures
- Individual reporting detection limit for each client
- Export of data to XLS, DOC, PDF, TXT, etc.

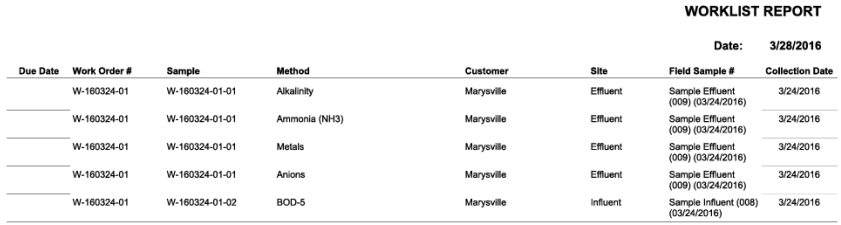
Sample Master® allows user to utilize the Master Query function which allows users to retrieve over 8 trillion combinations of data in the LIMS for

ad hoc reporting utilizing the results of their custom queries and searches. Sample Master® has a “one-step” function in combination with the Master Query that allows users to store ad-hoc selection criteria for future use.

Sample Master® integrates label printing into the Sample Tracking module functions such as Sample Login to allow printing of labels either automatically or manually. Users can define discretely which samples should have labels printed to minimize unnecessary label printing. Labels may be printed before or after sample login.

Over 70 standard reports exist in Sample Master®, and users with appropriate permissions are able to modify these reports to meet specific requirements. This includes worklists, TAT, sample priority, COC, hold time, backlog, number of samples, disposal, etc.

Based on the nature of the front-end setup in Sample Master®, all the required items listed under the last item “Sample Reports” are recorded in Sample Master®, therefore are available to be included in reports.



WORKLIST REPORT

Date: 3/28/2016

Due Date	Work Order #	Sample	Method	Customer	Site	Field Sample #	Collection Date
	W-160324-01	W-160324-01-01	Alkalinity	Marysville	Effluent	Sample Effluent (009) (03/24/2016)	3/24/2016
	W-160324-01	W-160324-01-01	Ammonia (NH3)	Marysville	Effluent	Sample Effluent (009) (03/24/2016)	3/24/2016
	W-160324-01	W-160324-01-01	Metals	Marysville	Effluent	Sample Effluent (009) (03/24/2016)	3/24/2016
	W-160324-01	W-160324-01-01	Anions	Marysville	Effluent	Sample Effluent (009) (03/24/2016)	3/24/2016
	W-160324-01	W-160324-01-02	BOD-5	Marysville	Influent	Sample Influent (008) (03/24/2016)	3/24/2016

BACKLOG

Date: 05-Oct-15

Department: General Analysis

Test	Test Group	No. of Samples	Total Price	Earliest Due Date
% Ash	Group A	8		04-Apr-13
% Ash	N/A	1		04-Apr-13
% Liquid	Pickle Line	34		19-Apr-13
% Moisture	Group A	7		26-Sep-13
% Moisture	Package A	1		14-Feb-14
14C - Temozolomid	N/A	23	$3,300.00	03-Feb-13
Acid	Pickle Line	34		19-Apr-13
Acidity	N/A	4		27-Jan-12

Date: 05-Oct-15
Analyst: Admin

Turnaround Report

Customer Name: Baily Nurseries, Inc.

Order ID	Order Date	Date of Final Approval	Samples	Tests	Expected TAT	Actual TAT
10012103	1/21/2010	1/29/2010	1	1	10	8
10021003	2/10/2010	3/2/2010	8	28	10	20
10021004	2/10/2010	3/2/2010	1	2	10	20
10021202	2/12/2010	3/3/2010	1	1	10	19
10030502	3/5/2010	3/12/2010	2	2	10	7
10030503	3/5/2010	3/12/2010	2	2	10	7
10030902	3/9/2010	3/15/2010	1	3	10	6

PRODUCTION

Date: 05-Oct-15

Department: General Analysis

Test	Test Group	Order ID	Matrix	Analyst	No. Samples	Total Price
% Ash					2	
% Moisture					2	
14C - Temozolomid					18	$2,375.00
Aerobic Plate Coun					2	
Alkalinity					788	$12,592.00
Ammonia					8555	$256,485.00
Ammonia Nitrogen					1	

Prelogin Report

Order and Sample Details

10/5/2015 4:39:00 PM

Customer Name: Nestle
Purchase Order:
Project ID: Saturday
Comment:

Order ID: 10020601
Order Date: 2/6/2010

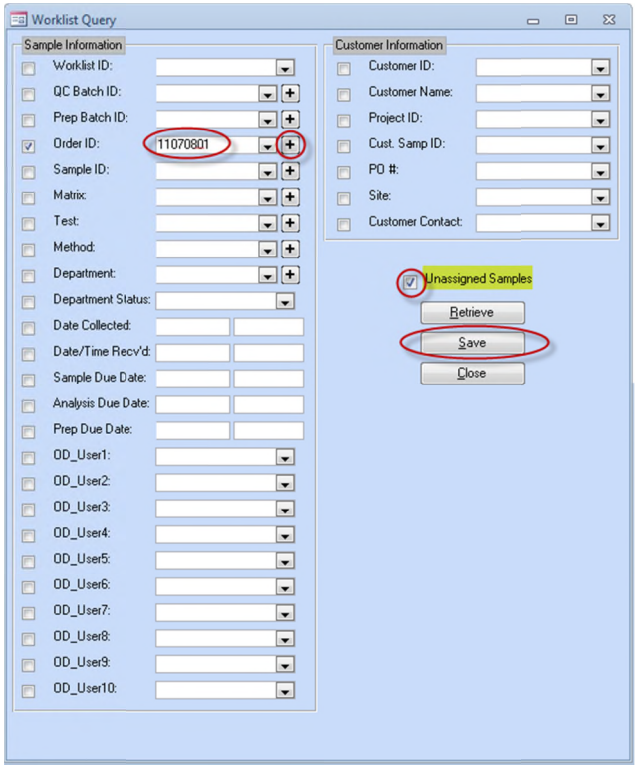
Sample #: 10020601-02 **Customer Sample #:**

Collector:
Quantity: 1
Site: Denite 2 Effluent
Comment:

Date Collected: 2/6/10 7:46 AM
Date Received: 2/6/10 7:46 AM
Matrix: Waste Water

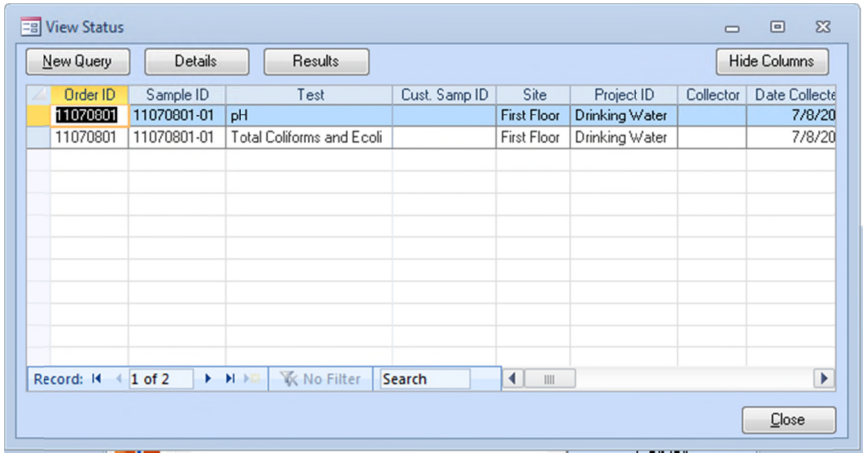
Test	Test Group	Method	Due Date
DO		SM 4500-O G	2/6/2010
NO2		EPA 353.2	2/8/2010
NO2+NO3		EPA 353.2	2/11/2010
NO3		EPA 353.2	2/8/2010
OP		SM 4500-P E	2/8/2010

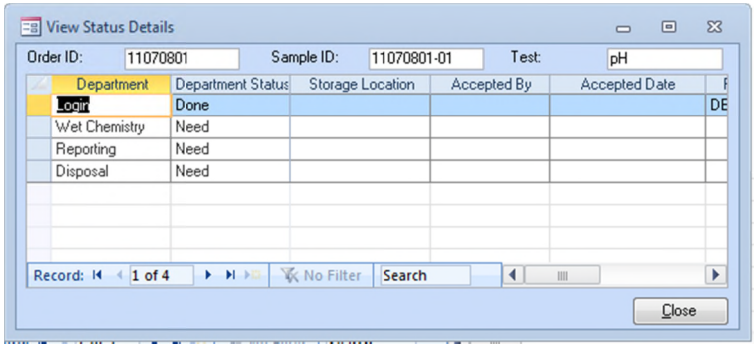
DATA EXCHANGE The LIMS application software shall have the ability to electronically exchange data with other databases (e.g. ELEXNET). The tasks may include, but are not limited to, the following list.		**16-DATA EXCHANGE** In addition to a narrative description of DATA EXCHANGE, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to automatically or manually, electronically exchange all chemical and microbiological data related to food safety that is generated by the laboratory with the FDA's eLEXNET (Electronic Laboratory Exchange Network) database.	3	Sample Master® can easily be integrated with systems that are ODBC compliant (this is required for bi-directional integration).Many databases are based on SQL Server and as a result, direct linking can occur, or automated import tasks can be configured with Excel. Sample Master® has a task manager that runs in the background and imports data at user definable times. Once triggered, a screen of the data to be imported can be reviewed prior to final import. The import is also date and time stamped and it is noted that the data was received via electronic import of the task manager. Sample Master® has a LIMS Task Manager that allows users to schedule tasks such as data exports to other systems (accounting systems, SCADA, SAP, etc.), and XML exports (EDDs). Clients are able to configure data imports and exports based on specific requirements. Data may be imported or exported in TXT, XLS, XML, etc.
Ability to import any relevant sample information from internal and external agency databases (CPS ARID, CPS PID, CAFO, and OCC) for pre-logging samples. Once imported, the information may be added to or changed as needed in the LIMS.	1	
Ability to allow user to define and customize imports and exports via customer configuration.	3	
Ability to import files of different types, including but not limited to, CSV, XLS, and TXT formats.	3	
Ability to export files of different types, including but not limited to, CSV, XLS, and TXT formats.	3	

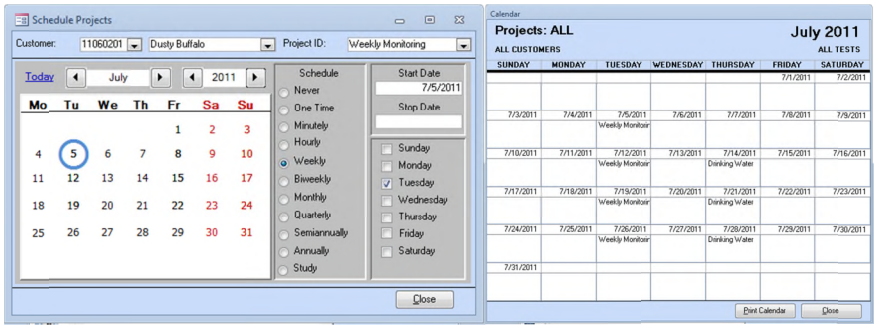
WORKFLOWS The LIMS application software shall manage workflows. The tasks may include, but are not limited to, the following list.		**17-WORKFLOWS** In addition to a narrative description of WORKFLOWS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to filter workflow views for samples by LIMS user, role, and/or laboratory section and must be able to be prioritized by holding time.	3	Users can filter workflow views across a variety of fields using the Master Query function. Sample lists may be ordered by holding time.  Sample Master® allows the user to define departments for sample workflow which among others may include: 1.Login, 2.Sample Preparation, 3.Analysis, 4.Data Review (QA/QC), 5.Disposal. Status codes exist against each sample within a department to indicate when the sample/test/approval is needed, when the sample/test/approval is work-in-progress and when the sample/test/approval is completed and status codes are automatically updated as samples move through the workflow.
Ability to filter workflow views for samples by sample category, type, matrix, regulatory compliance, test, and/or parameter and should be able to be prioritized by a user-designated priority status (e.g., “urgent”).	3	
Ability to filter workflow view based on the status of a project, sample, or test and should include stages (when appropriate) of: received, assigned, in progress, in review, approved, reported, retuned/discarded, and cancelled (or however so named).	3	
Ability to automatically assign work based on user roles.	3	
Ability to manually override work assignment (ability limited by user role).	3	
Ability to set due dates and prioritize samples close to or past the due date.	3	
Ability to track the status of a project, samples within the project, and tests assigned to those samples.	3	
Ability to track the project status through, at minimum, the following stages: project pre-logged/scheduled (when applicable) and completion of all samples grouped in the project.	3	
Ability to track the sample status through, at minimum, the following stages: receipt at laboratory, sample condition upon receipt verification, customer report authorization, customer report sent.	3	
Ability to track the test status through, at minimum, the following stages: preparation/extraction (when applicable), analysis, result entry into LIMS, each level of verification of results, test result authorization (which may be synonymous with the last level of result verification).	3	

Work may be assigned based on roles inside departments, and users with appropriate permissions are able to override work assignments.

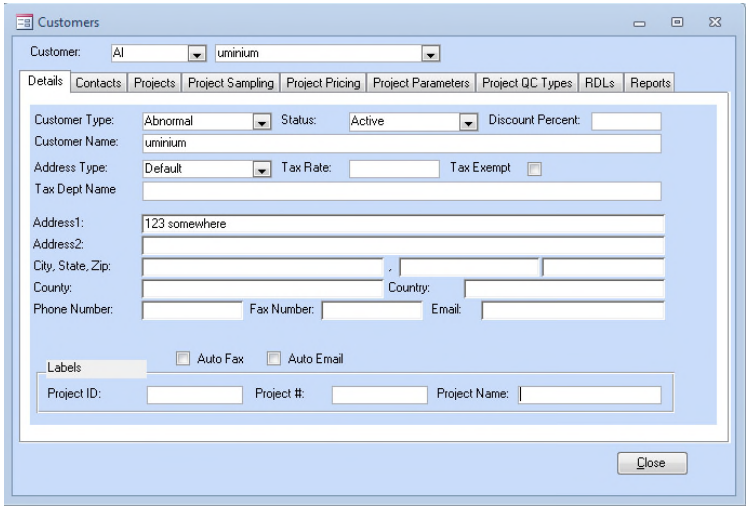
Sample and test status may be viewed at any time via the Master Query function.



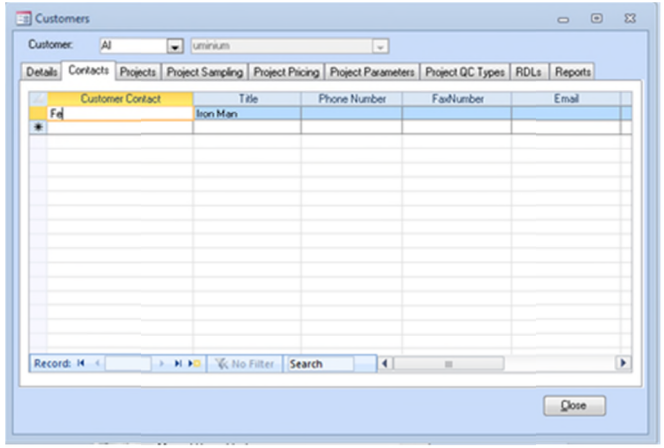


SCHEDULER The LIMS application software shall manage scheduling. The tasks may include, but are not limited to, the following list.		**18-SCHEDULER** In addition to a narrative description of SCHEDULER, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to schedule one-time and reoccurring events with choice of frequency (e.g., daily, weekly, monthly, etc.).	3	Sample scheduling is used to automatically Prelogin samples and assign the required tests to the samples for projects on a routine collection frequency. The samples can be Prelogged in on a daily or weekly basis. Frequency — Description Annually — Once a year Semi-annually — Once every six months Quarterly — Once every three months Monthly — Once a month (by date or by day in week) Bi-weekly — Once every two weeks Weekly — Once a week (including multiple days) Daily — Once a day Hourly — Once every hour Minutely — Once every minute Study — Specific calendar dates may be chosen to create pre-scheduled samples which do not follow a regular recurrence pattern.  With the Scheduler Task Setup option of the Sample Scheduling module, users can set schedules for instrument maintenance, training, and document review. Scheduled events for instrument maintenance and personnel training may be found in Sample Master®'s Resource Management module. DOCs

		for analysts must be in place for analysts to conduct testing. Internal reports documenting upcoming training requirements may be generated on the task scheduler, and emailed automatically to the appropriate personnel.

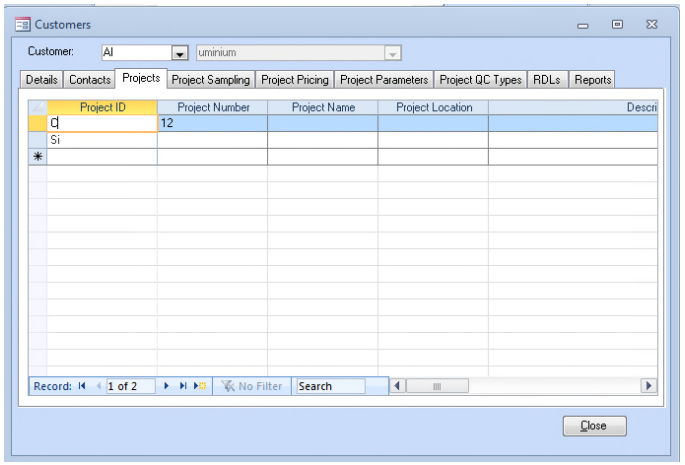
CUSTOMERS The LIMS application software shall manage customer information. The tasks may include, but are not limited to, the following list.		**19-CUSTOMERS** In addition to a narrative description of CUSTOMERS, for any line items that Contractor either cannot provide or provides a deviation from the line item please explain why and explain what the Contractor does provide that may meet the ability listed.
Ability to maintain a list of customers with lab assigned customer IDs.	3	The Customers form is found in the LIMS Maintenance module, and is used to enter or change the mailing and invoicing information for customers who are requesting that samples be tested. There is also the ability to track multiple varied types of addresses (i.e. billing, reporting, etc.) for each customer. Users can enter separate addresses for Default, Bill To, Copy To, and Ship To by selecting the type in the Address Type dropdown on the details tab. Additionally, for each Address Type new fields for Email address, County, Country, Address2 (second address line) have also been added. The ability to check for similar records in Sample Master® can be achieved utilizing the % sign in the Customer field of the Master Query to represent a partial or 'contains' name. This does not occur automatically. A customer ID will be created automatically; however, users have the option to change it at that time. Sample Master® will check for duplicates automatically, prior to adding a customer. 
Ability to maintain a list of customers with lab assigned customer IDs.	3	
System will natively provide the ability to add, edit, and remove customers from the list.	3	
Find customers and view customer information from various fields in the customer record.	3	
Ability to validate entered customer information (e.g. verifying that email addresses and phone numbers are in the correct format).	3	
Ability to automatically check for similar records when creating new customer records to prevent unintentional duplication.	0	
Ability to associate multiple contacts with each customer (billing, sample kits, reports may need to go to different people, or a customer may have multiple project managers, etc.)	3	
Ability to choose a customer from the list at sample login and have customer information automatically fill sample receiving information.	3	
Ability to choose one or multiple samples with which to have customer information automatically fill.	3	
Ability to add a customer at sample login ad-hoc.	3	
Ability to add customer information at any time in a sample's lifecycle.	3	
Ability to associate default customers with project or sample templates.	3	
Ability to change the default customer via customer configuration.	3	
Ability to log customer correspondence.	1	

Multiple contacts can be entered for a single customer.



Sample login allows users to select the customer and have all customer data populated automatically. Users may add customer information throughout the sample lifecycle.

Project and sample templates may be associated with a default customer.



Client correspondence may be tracked in the comments section or with the LIMS Customer Relationship Management (CRM) module.