



ENVIRONMENTAL SAMPLING AND ANALYSIS

WASTEWATER & SOLID/HAZARDOUS WASTE

Alloway is a full-service environmental laboratory.

- ◇ Our customers know they can count on data we provide.
- ◇ We have a proven track record for analytical performance.
- ◇ We follow strict standards and protocols.
- ◇ We keep your data confidential.
- ◇ We meet our obligations and promise only what we can deliver.
- ◇ In emergency situations, your deadline is our deadline.
- ◇ Our facilities and staff are accredited, certified, and approved by various programs.
- ◇ We know the standards and uphold them to generate defensible data for your success and for the well being of our mutual customer—the public.

SCOPE OF SERVICES

Wastewater Analysis

- NPDES Permit Requirement Analysis
- Priority Pollutants
- Bioassay and Toxicity Studies
- Inorganic and Organic Characterization
- 503 Sludge Analysis
- Low-Level Mercury Analysis

Solid/Hazardous Waste Analysis

- RCRA Permit Requirement Analysis
- Toxicity Characteristic Leaching Procedure (TCLP)
- Flashpoint / Ignitability
- Reactivity
- Corrosivity
- PCBs
- Inorganic and Organic Characterization

ANALYTICAL CAPABILITIES

Biomonitoring/Bioassay

- NPDES Monitoring (C. dubia, P. promelas)
- Toxicity Reduction Evaluation Studies
- Toxicity Identification Evaluations

Organic Characterizations

- Gas Chromatography
- Gas Chromatography/Mass Spectroscopy
- Total Organic Carbon
- Total Organic Halogens

Inorganic Characterizations

- Heavy Metals (ICP, FAA, GFAA, IC/HPLC)
- Low-Level Mercury Analysis
- Spectrophotometric and Specific Ion Determinations
- Gravimetric and General Chemistry Measurements

FIELD & ENVIRONMENTAL SAMPLING

- NPDES Sampling
- Grab and 24-Hour Composite Sampling
- Priority Pollutant Sampling
- Flow Monitoring
- Solid/Hazardous Waste Sampling
- River and Stream Monitoring
- Low-Level Mercury Sampling
- Method 9 Visual Emissions Observations
- Ground Water Sampling
- Routine Sample Pick-Up Service

"I just wanted to let you know how great it has been working with your staff at the various labs over the past several months...they could not have been more helpful. I have had to call with very little advance notice for sample bottles and sample pick-up, and they have come through for me each time. I know sometimes you only hear from the customer when something goes wrong, but I think it's also important to let you know when things are going right. And I could not be more pleased!"

*Dawn M. Coleman, Geologist III
Bowser-Morner, Inc.*



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DRINKING WATER

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SCOPE OF SERVICES

- SDWA Analysis
- Bacteriological Analysis
- Chemical Analysis

ANALYTICAL CAPABILITIES

Disinfectant By-Products

- Bromate
- Bromide
- Chlorate
- Chlorite
- Formation Potentials
- Trihalomethanes (THMs)
- Haloacetic Acids (HAA5)

Microbiological Analysis

- E. coli-Colilert-MMO/MUG
- LT2 E. coli
- E. coli by Quanti-Tray (9223 B)
- Total Coliform-Colilert-MMO/ MUG

Organic Analysis

- Volatiles
- Microextractables
- Pesticides
- Herbicides
- Semivolatiles
- Carbamates
- Glyphosate
- Endothall
- Diquat

Inorganic and Metals Analysis

- Low-Level Hexavalent Chromium (218.6)
- IOC Parameters
- Cyanide
- Nitrate/Nitrite, Nitrite
- Lead and Copper
- Perchlorate
- Sulfate

UCMR3 -List 1 and List 2

ACCREDITATIONS

State Certifications

AR, DE, HI, IN, KY, LA, MD, MS, NY, OH, PA, TN, WV

National Certifications

- NELAP
- U.S. Coast Guard

FIELD & ENVIRONMENTAL SAMPLING

- Online Bottle Ordering
- Monthly Bottle Shipping Program
- Routine Sample Pick-Up and Collection Service

"We rely on Alloway for all our 'outside laboratory' MCL Monitoring. The sample bottles are delivered ready for sampling. The courier service is reliable and on schedule. Analyses results are received from the Alloway staff promptly, which enables us to complete our EPA Monthly Operating Reports ahead of schedule. Alloway electronically submits results to the Ohio EPA. The Alloway staff is knowledgeable and determined to provide customer service whatever the need."

*Ron Fauls, Water Treatment Plant Chief
Fostoria (Ohio) Water Treatment Plant*

www.alloway.com

800-436-1243 • support@alloway.com



STAFF TRAINING

Alloway's strategic training solutions will prepare your laboratory staff to achieve compliance and generate defensible data. We offer training on a range of topics—from analytical procedures to quality control. Regular training sessions are scheduled throughout the year, or we can develop customized programs to meet your needs. Let Alloway put our experience to work for you.

TRAINING OPTIONS

Seminars

Alloway's seminars and workshops are applicable for a range of disciplines. Presentations are based on up-to-date methods and regulations. These courses are taught by guest presenters and Alloway's knowledgeable staff. Alloway is an approved contact-hour provider. Topics include quality control/quality assurance, environmental sampling and analysis, using Microsoft® Excel, general chemistry, microbiology, and laboratory techniques. Visit www.alloway.com/lab-development-training/seminars for a list of currently scheduled seminars.

Customized On-Site Courses

Make the most of your time and money with customized on-site training courses tailored for your needs. We bring the instructors and the materials; you provide the students. Planning a workshop or event? Alloway can be a guest speaker or host seminars on behalf of your laboratory organization. Alloway can present an existing course or design customized presentations on a number of topics, including:

- o Chemistry
- o Biology
- o Microbiology
- o Instrumentation
- o Quality Control and Quality Assurance

Online Training Courses

Training expertise at your fingertips. Alloway's online training courses are a practical option for brushing up on a technique or advancing your knowledge. Depending on your state, you may receive water or wastewater contact hours for participating. These courses incorporate video clips, photographs, EPA reference materials, and telephone support. All you need is an Internet connection. Visit www.alloway.com/lab-development-training/staff-training for a complete list of training courses available.

Training DVDs

These self-paced courses cover laboratory procedures and instrumentation for beginners and advanced students.

- Receive up-to-date training in a user-friendly format
- Participate and review lessons at your convenience
- Low-cost, reusable training tool
- Courses incorporate video clips, photographs, EPA reference materials, and telephone support
- Purchase individual DVDs or the full set
- Videos Available:
 - o Chemicals, Reagents and Supplies
 - o Data Handling
 - o Laboratory Equipment
 - o Proper Procedures for Cleaning Laboratory Glassware
 - o Quality Assurance
 - o Sampling
 - o Use of Laboratory Measuring Devices–Glassware

For a complete list of available courses and training options, request a copy of the Alloway Course Catalog.

"Alloway has proven to be the most knowledgeable resource for both consulting and training. There is nowhere else to go for rock-solid guidance and direction like Alloway provides. Confidence soars when you have good information and training. Thanks to all at Alloway!"

*C.D. Prescott, Senior Chemist
Memphis Valero Refinery*



MAXIMUM ADVANTAGE SOFTWARE SOLUTIONS

Alloway's Maximum Advantage Software Solutions meet the challenges of laboratory operations and guide your analysts through the maze of regulatory compliance. Save time and money with these proven software solutions. Each of these products makes laboratory work more efficient and more accurate—and they're all backed by Alloway's superior technical support.

SOFTWARE SOLUTIONS

Maximum Advantage Quality Control Software

Take control of your quality control data with Maximum Advantage Quality Control Software (MAQCS). MAQCS tracks quality control data, generates control charts, and much more. MAQCS confirms that your blanks, spikes, duplicates, laboratory control standards, and continuous calibration verifications are within control limits. This flexible system can be adapted for environmental, commercial, municipal, or industrial laboratories. A basic Microsoft Excel® version is available for smaller laboratories.

- Microsoft Access® based
- Tracks 20 activities concurrently
- Flags out-of-control data
- Add any number of analytes to the system

Maximum Advantage Reagent Traceability Software

Maximum Advantage Reagent Traceability Software (MARTS) is a high-performance database for tracking purchased reagents and solutions prepared in your laboratory. MARTS maintains a list of all the chemicals in your facility, tracks location and quantity of reagents, monitors expiration dates, generates reports listing chemicals close to expiration date, and quickly accesses Material Safety Data Sheets (MSDS). MARTS combines ease of use with powerful features for editing, searching, and retrieving information.

- Microsoft Access® based
- Calculates expiration dates
- Produces several management reports for tracking in-house reagents and solutions
- Eliminates the need for numerous paper logbooks.


Maximum Advantage MDL Software

Method Detection Limit (MDL) calculation and management is made easy with the Maximum Advantage Method Detection Limit Software (MAMDLS). MAMDLS is a high-performance database that calculates MDLs and quickly generates several useful reports. MAMDLS tracks MDLs in your laboratory and maintains a list of MDLs that are expired, that will expire within the month, and that are invalid due to unfulfilled EPA criteria. A basic Microsoft Excel® version is available for smaller laboratories.

- Microsoft Access® based
- Automatically calculates and verifies MDLs and PQLs
- Alerts you when MDLs when expire or are invalid
- Produces several management reports for tracking MDLs

Maximum Advantage Standard Operating Procedures

Alloway develops SOPs that follow NELAP and GLP Guidelines. SOPs are only useful if they are customized to meet your operation's needs, and if they incorporate the necessary forms to assist you with document control. Alloway provides customized SOPs and superior support. With your purchase, you receive interactive Web-Ex training and toll-free phone support. Your purchase also includes any necessary lab worksheets, built-in calculators, data-handling software, and document-control forms. Choose from Quality Assurance, Analytical Process or Custom-Designed SOPs.



"Products and services from Alloway have provided us complete confidence in responding to any audits. As a result of Alloway's assistance, we now have a manageable quality system. Also, their software has been exceptional for tracking and graphing QC data. Alloway has been a great partner with very affordable prices. They really care about our lab's success."

*David Beach, Assistant Superintendent
Findlay (Ohio) Water Pollution Control Center*

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INDUSTRIAL LABORATORY STAFFING

You set the staffing standard—we meet it.

Alloway's industrial laboratory staffing services can support your company's in-house laboratory needs. Whether you're seeking occasional laboratory support or a full-time staff, we can tailor a cost-effective solution to fit your company. Put your laboratory in our capable hands and focus on what you do best.

CAPABILITIES

Alloway has more than 25 years of experience operating our laboratories. Our people know how to adapt to meet the challenge at hand. Quality control, method development, routine testing, advanced instrumental analysis—you name it, we can handle it. Our laboratory services support your industry's production goals. If your company requires a specialized test or capability, we will meet your needs.

Our laboratory staffing experience includes:

- Quality Control
- Nondestructive Testing
- Metallurgical Analysis
- Mechanical Process Analysis
- Metal-Working Fluids Testing
- Wastewater Treatment

ADVANTAGES

- Keep your laboratory in-house by partnering with a company you trust.
- Alleviate staffing and scheduling worries because we work on your schedule.
- Work with highly trained professionals who adapt to your workflow and maintain your standards.
- Leverage your resources and save money, time, and energy.
- Receive fast, reliable results that allow you to focus on your core business.
- Mitigate risk by choosing a staffing company that makes proactive risk-management choices. Alloway carries general liability, professional liability, and umbrella liability insurance.
- Support your community by working with a local business.

Staffing services are available throughout Ohio.

Contact Alloway to learn more about our Industrial Laboratory Staffing options.



FREQUENTLY ASKED QUESTIONS

WHAT IS BEACON?

Beacon is foundational system for municipal laboratory development that integrates quality assurance, analytical processes, process-control software, and service and support into one concise package. Beacon includes documents, software, worksheets, and training, so you can successfully develop your quality system and generate defensible data. In addition, you join a resource network of other Beacon users, allowing you to share questions and concerns with other municipalities. Beacon is the ultimate municipal laboratory package.

WHY WAS BEACON DEVELOPED?

Many state regulatory agencies have begun to require that laboratories reporting data for environmental monitoring be accredited. Preparing for accreditation can be daunting when added to the rigors of day-to-day operations. Laboratory procedures are becoming more sophisticated with the advent of better technology, and assistance is needed to stay current. The bar has been raised for data **and** for analysts. It is no longer acceptable to train an individual to repeat steps in a test robotically without understanding data objectives. Laboratory professionals need to be able to produce defensible data that can withstand ever-increasing legal review. That's where Beacon can help. Alloway has parlayed its 25 years of experience into a viable solution for today's environmental laboratory.

WILL MY LABORATORY NEED ACCREDITATION?

It depends on your state. Accreditation is a national trend that is gaining momentum. Several states are requiring accreditation and many more are auditing laboratories for compliance to national standards. Regulators and legal professionals scrutinize data for inconsistencies and weaknesses during litigation. Data that falls short will be highly publicized. Furthermore, data generated by laboratories are used by states to assign discharge limits, levy fines, evaluate water criteria, and set future water-quality goals. In other words: the status of accreditation requirements in your state **will not** prevent the critical review of your data.

HOW WILL BEACON HELP ME OBTAIN ACCREDITATION?

Beacon cannot guarantee that your laboratory will receive accreditation, but it will put your lab on the right track. Beacon was designed to follow national and state-recognized program requirements. Beacon contains the tools and training you will need, but you must commit to using these tools and responding to updates in order to obtain accreditation.

CAN I OBTAIN ACCREDITATION WITHOUT BEACON?

Yes, you can do all the work to obtain accreditation – provided you have the necessary time and resources. Not leaving enough time to implement a sound program before your next audit may compromise your ability to generate defensible data. Most accreditation programs specify goals to be attained, not processes to achieve goals. Beacon is a turnkey approach that can make the difference between attempting accreditation and becoming accredited.

CAN I DEVELOP THE TOOLS IN BEACON ON MY OWN?

Yes, you can develop your own tools. You will need to review the standards and develop an integrated quality system. The system will need to address document control, measurement traceability, method compliance, responses to out-of-control quality control, corrective actions, writing of method manuals, determination of detection limits, method validation, and more. But why reinvent the wheel? Beacon has been tested and proven successful.

HOW MUCH TIME WOULD IT TAKE ME TO DEVELOP THE TOOLS IN BEACON?

Beacon has been developed over a period of several years. Standard Operating Procedures (SOPs) must be written for each analytical test and for all other laboratory activities that impact laboratory operations or data quality. All of this must be done in context of an overarching quality system. Without a trained quality-assurance professional at the helm, developing a program similar to Beacon would be a vast undertaking.

FREQUENTLY ASKED QUESTIONS

IS IT REALISTIC TO EXPECT PLANT OPERATORS TO DEVELOP THEIR OWN SYSTEM?

Operators are focused on performing tasks to meet immediate needs. A quality assurance system requires a great deal of time to prepare and implement. The training and experiences of plant operators are not good preparation for developing a quality system.

ARE THERE ALTERNATIVES TO BEACON?

Yes and no. There are always different ways to resolve a problem. Beacon is the most complete option for municipal laboratory development. You could purchase templates for manuals or procedures, but these templates will leave you with extensive work to do on your own, and they may not be part of a complete system. Consultants are available to design a custom package, but a consultant will come at a premium cost far greater than the price of Beacon. Only Beacon provides a fully integrated system and in-depth training for a flat fee. Beacon is simply the best value for your money and the best use of your time.

DOES A STATE AGENCY ENDORSE BEACON?

State agencies have **not** endorsed Beacon or any similar products or services. However, Beacon has been introduced to regulatory personnel in various states so they can be familiar with our product and goals. It is our responsibility to keep abreast of state and federal requirements. We listen to public comments, read published guidelines, and respond with changes. This program was introduced in Pennsylvania when it was undergoing statewide accreditation. All the municipalities that purchased this program passed their audits on the first try.

WHY NOT SEND ALL MY SAMPLES TO ANOTHER LABORATORY?

There is always a risk associated with accepting results from outside laboratories. Data generated by your laboratory are vital to the operation of your facility. Outsourcing samples can lead to delays, which can, in turn, delay plant operations. These delays can impact water quality, which may lead to permit violations. If your facility has the resources to do its testing in-house, it should. Beacon can help produce quality data and eliminate the headache of outsourcing samples.

HOW WILL BEACON ADAPT TO CHANGES IN REGULATIONS?

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WHY NOT WAIT UNTIL I HAVE AN ORDER FROM THE REGULATOR TO DO SOMETHING?

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CAN I BUY ONLY CERTAIN COMPONENTS OF BEACON?

Yes, components of Beacon can be purchased individually on our Web site: www.alloway.com

This is an option for facilities with access to individual(s) who may be able to develop their own quality system. Before selecting this option, be sure you can commit to completing the project. Once you have selected certain components, you will be expected to complete the project on your own.

HOW DOES THE COST OF BEACON COMPARE TO OTHER EXPENSES AT A TREATMENT PLANT?

The cost of Beacon is a function of the time expended on its development. Beacon's cost is less than the price of a good refrigerated auto sampler. While equipment will depreciate and need to be replaced, Beacon is designed to adapt to changes and remain viable for years to come. Beacon will also serve as a tool for training new personnel and as a model for system design throughout the plant. Some facilities have even found that Beacon has led to efficiencies of scale, as unnecessary activities have been eliminated.



BEACON COMPONENTS

QUALITY ASSURANCE SYSTEM

- Quality Assurance Manual Template
- Standard Operating Procedures for:
 - Corrective Action
 - SOP Control
 - Documentation and Labeling of Standards & Reagents
 - Sample Tracking
 - QC Performance Requirements – General
 - Training of Lab Personnel
 - Ethical Conduct
 - QA Assignments

ANALYTICAL PROCESS SYSTEM

- Standard Operating Procedures for:
 - pH Determination
 - Solids, Total Suspended
 - BOD
 - **SIX** additional SOPs of your choice

All SOPs include appropriate forms, logs, calculators, and training necessary to maintain your quality program.

PROCESS-CONTROL SOFTWARE

- Microsoft Access®-based Advanced MDL Calculator
- Microsoft Excel®-based QC System

SERVICE AND SUPPORT

- Three full days of on-site training.
- One year of toll-free telephone and e-mail support with annual renewal option.
- Access to a resource network of other Beacon users.

When laboratory development is on the horizon, let Beacon be your guiding light. Beacon is a complete laboratory and analyst development program by Alloway.



CONTACT ALLOWAY FOR A QUOTE

800-436-1243 • www.alloway.com



Alloway
Your Resource for Defensible Data

If your laboratory is looking for a solution to accreditation preparation, or you simply want to be a better laboratory, Beacon can be your guiding light. Beacon is a turnkey approach that will revitalize your laboratory. You owe it to the people who depend on your data to see how Beacon can guide your laboratory to excellence.



Beacon was developed by Alloway, a trusted environmental laboratory with more than 25 years' experience. We know how to prepare your laboratory for accreditation, and we care about doing it right.

We invite you to learn more about Beacon. Please visit our Web site or contact us directly.

800-436-1243

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support@alloway.com



BEACON
Guiding Your Laboratory to Excellence

BEACON COMPONENTS

THE BAR HAS BEEN RAISED FOR DATA AND FOR ANALYSTS

Is your laboratory up to the challenge?

Several states have mandated accreditation—and others are expected to follow suit—yet many laboratories are not prepared to meet accreditation standards. Laboratories are expected to have an established quality system, controlled documents and procedures, and defensible data output. Without help, laboratory development can be daunting. Laboratories can get on the right track, but they do not have to do the work alone:

Beacon can illuminate the path to excellence.

Alloway's Beacon addresses the core issues of laboratory development. Beacon provides the documents, forms, software, and training necessary for laboratories to pass audits and regulatory visits, and generate defensible data. **Beacon includes four integrated components: Quality Assurance System, Analytical Process System, Process-Control Software, and Service and Support.** Beacon functions as a total laboratory solution, enabling laboratories to meet the challenges of accreditation and move forward with greater confidence in their operations.

QUALITY ASSURANCE SYSTEM

Beacon's Quality Assurance Manual and corresponding Standard Operating Procedures (SOPs) outline everything a laboratory needs for a quality system: corrective action, sample tracking, document control, and training. Beacon's Quality Assurance System meets regulatory expectations and establishes a foundation for laboratory development.

ANALYTICAL PROCESS SYSTEM

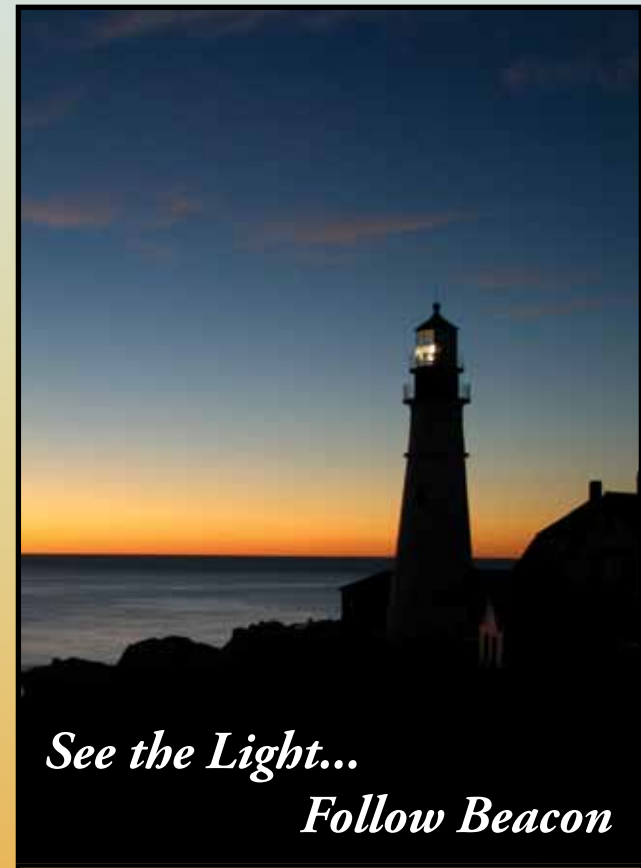
Beacon's Analytical Process System standardizes sample handling, analysis, documenting, evaluating, and reporting. Beacon includes customizable SOPs that present the entire analytical process. These SOPs are accompanied by forms, logs, calculators, and software that streamline data collection. With Beacon's expert guidance, a laboratory will generate accurate and defensible results for every test, every time.

PROCESS-CONTROL SOFTWARE

Process control includes the supporting activities that ensure the analytical process is in control. Beacon process-control software reduces the tedium of handling, graphing, and evaluating data, ultimately improving the defensibility of test results. Beacon includes two process-control software products: Microsoft Access®-based Advanced Method Detection Limit Calculator and Microsoft Excel®-based Quality Control System.

SERVICE & SUPPORT

Beacon provides qualified support when a laboratory needs it most. The Beacon Support Staff is comprised of experienced laboratory analysts and quality-assurance experts. A laboratory receives two consecutive days of on-site training, one year of toll-free telephone and e-mail support, and access to a resource network of other Beacon users.



See the Light...

Follow Beacon

- Beacon is a complete package.
- Even if accreditation is not mandatory in your state, your data must be right.
- Beacon is designed to comply with national and state regulation programs.
- When an audit arises, it is better to have been proactive than to be reactive.
- Beacon is fully customizable.
- Beacon is a model system that will serve your laboratory for years to come.



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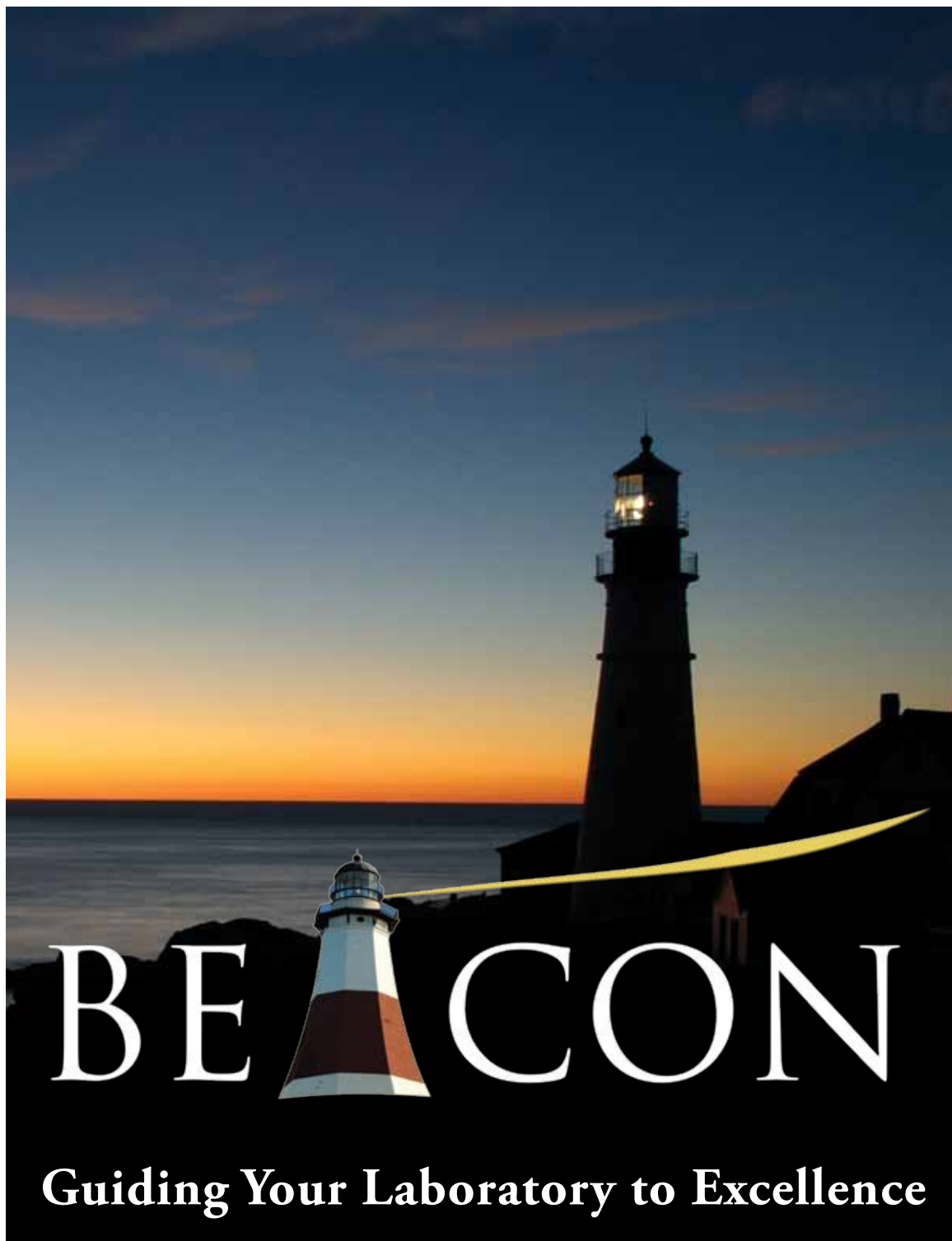
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A LABORATORY & ANALYST DEVELOPMENT PROGRAM BY ALLOWAY





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INTRODUCTION TO BEACON

Laboratories are held to rigorous standards, whether those standards come from increased review of data or full-scale accreditation requirements. Regardless of the motive, laboratories must strive for continuous improvement. Although several states have implemented mandatory accreditation, and others are expected to follow suit, many laboratories are not prepared to meet (and continue to meet) accreditation standards. Accrediting bodies expect laboratories to have an established quality system, controlled documents and procedures, and legally defensible data output. The accreditation process is meant to ensure defensible data generation, as well as to inspire competence, confidence, and professional growth in a laboratory. Without a helping hand, accreditation can be a daunting task. But laboratories can seize this opportunity to get on the right track, and they do not have to do the work alone: Beacon can illuminate the path to accreditation and laboratory excellence.

Alloway's Beacon addresses the core issues of accreditation. Beacon provides the documents, forms, software, and training necessary for a laboratory to successfully obtain and maintain accreditation status, pass audits and regulatory visits, and generate defensible data. Beacon was originally developed for internal use in an environmental laboratory; however, Beacon has been implemented in municipal laboratories with great success. Designed to comply with national and state-recognized program requirements, Beacon is comprised of four integrated sets of products and services: Quality Assurance System, Analytical Process System, Process-Control Software, and Service and Support. When implemented, Beacon functions as a total laboratory solution, enabling a laboratory to meet the challenges of accreditation and move forward with greater confidence in its operations.

If your laboratory is facing accreditation, or if you simply want to be a better laboratory, let Beacon be your guiding light. This reference guide will outline the Beacon system and show you how easy it is to put your laboratory on the path to excellence.

BEACON COMPONENTS

Quality Assurance System
Analytical Process System
Process-Control Software
Service & Support





QUALITY ASSURANCE SYSTEM

The goals of any quality assurance system are continuous improvement, compliance with standards, and defensible data output. Beacon supports these key objectives by incorporating a fully functioning Quality Assurance System.

The data generated by a municipal laboratory must meet environmental laws and regulations. A quality assurance system sets a precedent of excellence for a laboratory, helping the laboratory to consistently produce high-quality data, meet the requirements of accreditation, and measure up to public health and environmental standards.

Beacon provides the necessary components of a quality assurance system in an integrated offering. Beacon comes with a Quality Assurance Manual and corresponding Standard Operating Procedures (SOPs) that outline everything a laboratory needs for a quality system, from corrective action to sample tracking, document control, and training. These documents will be configured for your laboratory's unique needs.

Accrediting bodies expect laboratories to have established quality assurance systems. If your laboratory does not have a quality assurance system, starting from scratch – particularly if an audit is impending – is sure to cause undue stress and chaos. Beacon's Quality Assurance System meets regulatory expectations and establishes a foundation for laboratory development, and the system works seamlessly with the other components of Beacon.

QUALITY ASSURANCE SYSTEM



QUALITY ASSURANCE MANUAL

The Quality Assurance Manual defines the scope and elements of the Quality Assurance System. Accrediting bodies require a laboratory to create and maintain the standard elements of a quality assurance manual and to assign responsibility for these elements. During your on-site training, Beacon's Quality Assurance Manual will be tailored to your laboratory, allowing you to comply with your accreditation requirements while maintaining a controlled document. Listed below are the required elements of a quality assurance manual, all of which are provided by Beacon's Quality Assurance Manual.

- 1.0 City of (name) WPC Laboratory Quality Policy
- 2.0 Organization and Management Structure
- 3.0 Document Control
- 4.0 Critical Staff Positions
- 5.0 Traceability of Analytical Measurements
- 6.0 Methods
- 7.0 Capabilities Review
- 8.0 Traceability of Calibration and Verification of Test Procedures
- 9.0 Sample Receipt and Handling
- 10.0 Facility and Equipment
- 11.0 Equipment Calibration and Maintenance
- 12.0 Data Verification and Internal Quality-Control Activities
- 13.0 Corrective Actions
- 14.0 Control of Data Generated from Non-Conforming Activities
- 15.0 Complaints
- 16.0 Confidentiality and Public Access
- 17.0 Data Review and Audits
- 18.0 Training and Demonstration of Capability
- 19.0 Ethical Conduct
- 20.0 Reporting of Data

QUALITY ASSURANCE STANDARD OPERATING PROCEDURES

Accreditation requirements specify the use of quality assurance standard operating procedures. Standard Operating Procedures (SOPs) are documents that give detailed, written instructions for performing a specific task. Quality Assurance SOPs address support activities necessary to achieve the requirements outlined in the Quality Assurance Manual.

Beacon provides the Quality Assurance Manual and the corresponding SOPs. These SOPs are completed documents that will be customized for your laboratory and issued as controlled documents. Accrediting bodies look for SOPs as evidence that a laboratory has established procedures and that these procedures correspond with the Quality Assurance Manual.

The following is a partial example of a Quality Assurance SOP:

(City) SOP No:	Revision: 0	Title:	Effective Date:
(Title #1):		Date:	
(Title #2):		Date:	
(Title #3):		Date:	

1.0 Scope and Application

- 1.1 This document defines the format for Standard Operating Procedures (SOPs) and Forms.
- 1.2 This procedure defines the procedure for the approval of an SOP or Form.
- 1.3 This procedure defines the distribution of SOPs and Forms.
- 1.4 This procedure defines the activities required in order to control copies of SOPs and Forms.

2.0 Summary of Method

- 2.1 Documents are formatted to ensure that documents address regulatory requirements.
- 2.2 Documents are reviewed and approved prior to release.
- 2.3 Affected personnel are notified of a new issue or revision so that it may be put into use.
- 2.4 Controls are in place to allow only one revision of each document to be active.
- 2.5 Obsolete documents and revisions are archived for future reference.

3.0 Definitions

- 3.1 SOP – detailed written work instructions to be followed in order to complete an assigned task. SOPs are to supply sufficient detail that individuals of competence can duplicate activities.
- 3.2 Form – documents used for recording data and activities. Forms may also contain limited instructions.
- 3.3 QA – quality assurance
- 3.4 QC – quality control



AVAILABLE QUALITY ASSURANCE SOPs

Listed below are the Quality Assurance Standard Operating Procedures (SOPs) provided with Beacon. These are completed documents that have withstood the challenges of many audits in an environmental laboratory setting. They will be configured to your unique laboratory operations. When combined with the Beacon Quality Assurance Manual, these SOPs support the quality system accreditation requirement.

- Corrective Action
- SOP Control
- Documentation and Labeling of Standards and Reagents
- Sample Tracking
- QC Performance Requirements – General
- Training of Lab Personnel
- Ethical Conduct
- QA Assignments



ANALYTICAL PROCESS SYSTEM

Just as Beacon's Quality Assurance System establishes guidelines and procedures for its overall performance and response to events, Beacon's Analytical Process System is an integrated sequence of actions that ensures accuracy and consistency of laboratory tests. The Analytical Process System standardizes the procedure for sample handling, data generation, documentation, data evaluation, and reporting. In order to create accurate and defensible test results, it is necessary that the entire process – from sample handling through analysis – be developed as an integrated system. Beacon provides a complete Analytical Process System that works hand-in-hand with the Quality Assurance System.

Beacon begins with Standard Operating Procedures (SOPs) that present, in detail, the entire analytical process. These SOPs are written in clear language that is directed at trained laboratory professionals. These SOPs are accompanied by forms, logs, calculators, and software that make accurate data calculation as streamlined as possible. These SOPs are completed documents that will be customized for your laboratory. They are, however, controlled documents and should be treated accordingly once issued.

Included in Beacon are:

- SOPs with step-by-step instructions for method compliance
- Forms for collecting necessary information and data
- Software calculators that process data according to the SOP's directions
- Integrated Process-Control SOPs for data validation
- Process-Control Software for tracking required quality-control activities

With Beacon's expert guidance, your laboratory will generate accurate and defensible results for every test, every time.

ANALYTICAL STANDARD OPERATING PROCEDURES

All accrediting bodies mandate the use of analytical standard operating procedures (SOPs) when performing laboratory tests. Analytical SOPs are detailed documents that provide precise instructions for performing specific analytical tests. Creating an analytical SOP is a lengthy process that requires a focused and experienced analyst performing significant research to generate the detailed document. Beacon has done all the hard work so you can receive a fully functional and understandable SOP for each analytical test you perform. These SOPs will be configured for your unique laboratory operations. Beacon's SOPs are proven documents that allow your laboratory personnel to effectively perform their tests and generate accreditation-worthy data.

The following is a partial example of an Analytical SOP:

(City) SOP No.: 4500-PE	Revision: 0	Title: Phosphorus, Total	Effective Date:
(Title #1):		Date:	
(Title #2):		Date:	
(Title #3):		Date:	

1.0 Test Method for the Determination of Following Analyte(s)

1.1 Phosphorus, Total

2.0 Applicable Matrix (s)

2.1 Wastewater

2.2 Groundwater

2.3 Surface Waters

3.0 Method Detection Limit

3.1 Method Detection Limit (MDL) is determined annually.

3.2 Practical Quantitation Limit (PQL) for Phosphorus is 0.02 mg/L.

4.0 Scope and Application

4.1 Method covers the determination of phosphorus in the specified matrices.

4.2 Method is based on reactions that are specific for the orthophosphate ion.

Depending on the prescribed pretreatment of the sample, the various forms may be determined.

4.3 Method is usable in the 0.02 to approximately 1.0 mg/L range.



AVAILABLE ANALYTICAL SOPs

Listed below are the Analytical Standard Operating Procedures (SOPs) available through Beacon. These SOPs are complete, functional, and audit-tested documents. Depending on your laboratory, these SOPs will need only minor tailoring. Beacon comes with three default SOPs: pH determination; Solids, Total Suspended; and BOD. You can chose **six** additional instrumental or general chemistry SOPs and data-handling systems. All SOPs include appropriate forms, logs, calculators, and training necessary to maintain your quality program.

SOP Title
Conductivity
Hardness, Total Titrimetric
pH Determination
Solids, Total Dissolved
Solids, Total Suspended
Solids, Total
Solids, Volatile
Turbidity
ICP for Trace Element Analysis of Water
Alkalinity, Potentiometric
Chloride, Titrimetric
Cyanide, Total
Nitrogen, Ammonia
Nitrogen, Total Kjeldahl
Nitrogen, Nitrate-Nitrite
Oxygen, Dissolved
Phosphorus, Total
Sulfate, Turbidimetric
Sulfide
Biochemical Oxygen Demand
Chemical Oxygen Demand, Mid-Level
Chemical Oxygen Demand, Low-Level
Oil & Grease, Total Recoverable
Total Petroleum Hydrocarbons
Phenolics, Total Recoverable
Purgeable Aromatics
Organochlorine Pesticides and PCBs
Volatile Organic Compounds by GC/MS
Semi-Volatile Organics by GC/MS
TCLP/ZHE Extraction
Oil & Grease
Alkalinity, Color Change
Calcium Carbonate Saturation
Specific Gravity

ANALYTICAL PROCESS SYSTEM

AVAILABLE ANALYTICAL SOPs (CONTINUED)

SOP Title
Digestion for Total Metals for Analysis by FLAA or ICP
Digestion of Sediments, Sludges and Soils
Iron and Manganese in Drinking Water
Chromium, Hexavalent
Separatory Funnel Liquid-Liquid Extraction
Continuous Liquid-Liquid Extraction
Soxhlet Extraction
Pressurized Liquid Extraction
Cyanide, Weak Acid Dissociable
Chlorine, DPD
Fluoride
Metals by FLAA
Manual Peak Integration
Cyanide, Reactive
Sulfide Reactive
Mercury-Cold Vapor Technique (Liquid Waste or Semi-Solid Waste)
Mercury in Solids or Semi-Solids Waste
COD, Reactor Method
Acceptance/Rejection of Calibration Data Points
Manual Peak Integration
Volatile Organic Storage Monitoring
Cyanide, Total & Amenable
Total Organic Halides
Extractable Organic Halides
Sulfide
pH, Aqueous Waste
pH, Soil and Waste
Determination of Inorganic Anions
Total Organic Carbon
Phenolics, Total Recoverable
Oil & Grease Extraction
Paint Filter Liquids Test
Total Coliform Bacteria
Total Fecal Coliform Bacteria
Oil & Grease, Soxhlet
Diesel Range Organics/Gasoline Range Organics
BTEX Purgeable Aromatics
Organochlorine Pesticides and PCBs
Volatiles by GC/MS
Semi-Volatiles by GC/MS



PROCESS-CONTROL SOFTWARE

A fundamental tenet of an accreditation process is the assurance that all tests have been, and will continue to be, performed within specified control limits. Process control includes the supporting activities that ensure the analytical process is “in control” and operating within specified limits. Process control is an integrated sequence of actions that determines method performance. Beacon has developed automated process-control tools that meet process-control requirements in an accurate and timely way.

Typically, a laboratory will perform process-control tracking and evaluation manually. Process-control data can be voluminous, and the evaluation steps are tedious, making it easy for errors to occur. Beacon process-control software reduces the error factor and the tedium of data handling, graphing, and evaluating, ultimately improving the defensibility of your test results.

Beacon supplies the following process-control software products:

Microsoft Access®-based Advanced Method Detection Limit Calculator

This software calculates Method Detection Limits (MDLs) and generates management reports and historical information.

Microsoft Excel®-based Quality Control System

This system generates control charts and batch records.



ADVANCED METHOD DETECTION LIMIT CALCULATOR

Accrediting bodies require laboratories to properly perform analytical methods. An integral part of method success is to determine the Method Detection Limit (MDL). Beacon supplies Microsoft Access®-based software that automates timely MDL calculations, and generates management reports and historical information. The MDL calculator measures a laboratory's ability to produce accurate, defensible data within a specified confidence level.

Date	1/2/2003	Points	
Department	Instrumental	MDL	0.0101
Analyte	Phosphorus, Total	Recovery	114.55
Method	265.3	Mean	0.1145
Analyst	JS	Std. Dev.	0.0034
Instrument	Milton Roy Spectronic 401	T Value	2.998
Free Value	0.1000	10 Times Rule	1.0
Units	mg/L		
PQL	0.0200		
Comments	Refer to Batch # 2655		
NEXT DUE DATE:	1/2/2004		
Archived:	<input type="checkbox"/>		

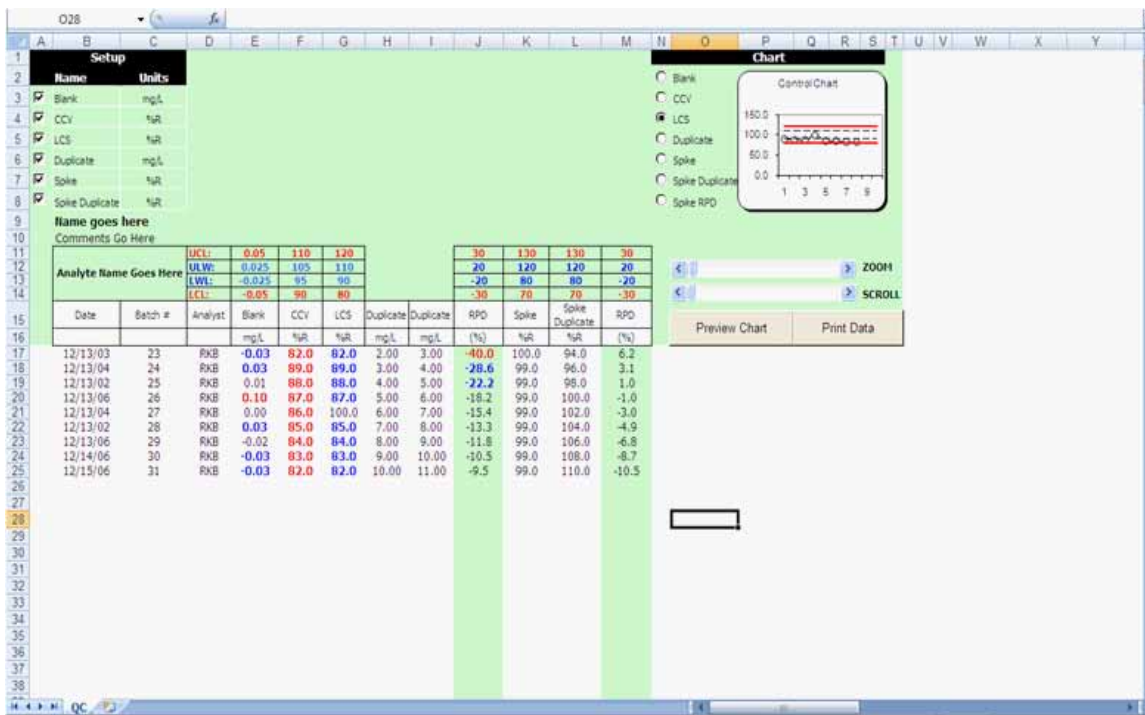
Data Points	
DATA	
	0.11300
	0.11500
	0.11800
	0.11000
	0.11800
	0.11400
	0.11800
	0.11000

PROCESS-CONTROL SOFTWARE



QUALITY CONTROL SYSTEM

Accrediting bodies mandate that environmental laboratories generate control charts and batch records to support their test data. Manual quality-control systems are labor intensive, difficult to interpret, and prone to error. Beacon supplies a Microsoft Excel®-based Quality Control System that automates and simplifies the process of meeting these requirements. Control charts are easily updated and can be traced back to specific batches. Your laboratory personnel will become more efficient and accurate, and they will generate data that can withstand the rigors of accreditation.



PROCESS-CONTROL SOFTWARE



SERVICE AND SUPPORT

Beacon supplies the tools you need to get your laboratory on the right path, but these products are ineffective without training. In keeping with Beacon's promise to be a comprehensive solution, your laboratory receives three full days of on-site training, one year of toll-free telephone and e-mail support, and access to a resource network of other Beacon users. You'll never be without qualified support from a trusted resource.

Beacon was developed by Alloway, a trusted commercial environmental laboratory with more than 25 years in the industry. We understand the requirements of accreditation. We know how to prepare your laboratory for accreditation, and we care about doing it right. We are well-versed in installing and operating Beacon's components. The Beacon Support Staff is comprised of experienced environmental laboratory analysts and trained quality-assurance experts. Become part of the Beacon family and you will see that accreditation is manageable when you partner with quality people.

SERVICE & SUPPORT



ON-SITE TRAINING

The Beacon Support Staff will come to your facility, personally install and train you to use Beacon, and configure Beacon to your specific laboratory operations.

These three days are filled with practical training that is guaranteed to introduce you to the key elements of Beacon, and to give you the skills to utilize Beacon in your laboratory. The Support Staff will cover the use of the Quality Assurance Manual; instituting document control; the provisions of SOPs; using calculators and worksheets, and operating the Process-Control Software. After the Beacon Staff has spent three days in your laboratory, you will be well on your way to accreditation and laboratory excellence.

If at any time you wish to have more on-site training, the Beacon Support Staff will return to your facility for an additional fee.

CONTINUOUS PHONE AND E-MAIL SUPPORT

Even after Alloway representatives leave your facility, they are still available to answer questions regarding Beacon. For one year after your initial purchase, you are entitled to continuous toll-free phone and e-mail support. The Beacon Support Staff will provide you with qualified advice whenever you need it. After one year, you have the option to renew your annual support contract for long-term Beacon support.

BEACON RESOURCE NETWORK

Sometimes knowing others are in a similar situation can be comforting and helpful. Beacon connects you to other facilities that use Beacon, enabling you to share information and develop professional relationships through Beacon's common bond.





If your laboratory is looking for an all-inclusive solution to accreditation preparation, or you simply want to be a better laboratory, Beacon can be your guiding light. Beacon provides excellent products and superior service. You will not find a more comprehensive solution to laboratory development. Other laboratory development programs tell you what to accomplish; Beacon tells you how to achieve goals. It is a turnkey approach that will revitalize your laboratory. You owe it to your personnel, your city, and the people who depend on your data to see how Beacon can guide your laboratory to excellence.

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