



# **ESS Laboratory**

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## **Statement of Qualifications**

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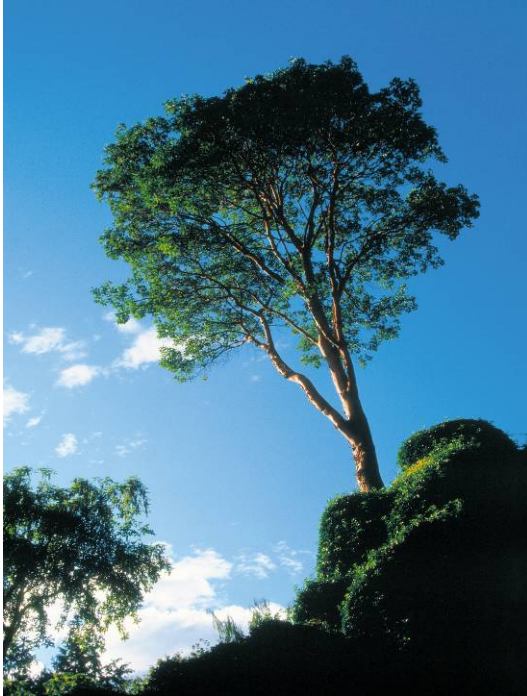
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[www.esslaboratory.com](http://www.esslaboratory.com)

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# Introduction



ESS Laboratory is a full service analytical laboratory dedicated to providing engineering consultants, industry and government with high quality analytical data and superior customer service. We pride ourselves on our reputation for providing accurate data and meeting the expectations of our customers. ESS Laboratory maintains numerous State and Federal certifications and approvals. Our 18,000 square foot laboratory facility is designed for maximum production efficiency and safety. ESS Laboratory is equipped with state of the art automated instrumentation and offers online access to analytical data. Our technical staff is a highly skilled team of chemists and scientists with extensive experience in environmental analysis. They are managed by a team of professionals who are dedicated to quality and customer satisfaction.

Analytical services are mandated by Federal, State, and Local regulations. Compliance with these Regulations can become a costly and complicated process. It is the philosophy of ESS Laboratory to make the purchase of these services as cost effective as possible for our clients. ESS Laboratory achieves this by adhering to the following:

- Highest level of quality
- Outstanding performance without compromise
- A customer service program that focuses on meeting our clients' expectations the first time and every time
- A working environment conducive to quality work and employee health and safety
- Competitive pricing

ESS Laboratory is proud of the reputation we have established. Our data is scientifically valid, legally defensible, accurate and precise. Our comprehensive QA/QC program meets, and often exceeds, the strict requirements established by NELAC, Federal and State Agencies. Extensive laboratory facilities and technical expertise allows ESS Laboratory to offer Dependability, Quality and Service... Matching Our Experience with Your Analytical Needs.

This document provides an overview of our organization and capabilities. As you read, you will discover our commitment to quality and our ability to provide accurate and timely analytical services.

## Capabilities

ESS Laboratory is a NELAC certified Laboratory with multiple State certifications for drinking water, ground and surface water, industrial effluents and wastewater, contaminated soil and solid/hazardous waste analysis.

To meet the needs of our clients, ESS Laboratory provides an extensive selection of analytical tests and services. Capabilities include:

- Volatile Organics
- Semi-Volatile Organics, Including Low Level 1,4-Dioxane and SIM
- Pesticides and PCBs
- Metals
- Classical Chemistry, Including TOC
- Herbicides
- Microbiology
- Field Sampling/Permit Sampling
- Bench Studies
- Customizable Electronic Data Deliverables

Our laboratory is available 24 hours a day, 7 days a week to meet our clients' needs.

ESS Laboratory's Value Added Services include:

- Project Management
- Web Access to Data and services
- Reporting and Electronic Data Deliverables (various formats available)
- Sampling Kits
- Courier Service

## Analytical and Field Services



Our analytical testing capabilities include organic, inorganic and microbiological analyses. The following is a brief synopsis of the types of instrumentation and analytical techniques we employ at ESS Laboratory. A detailed listing of our instrumentation can be found on page 11.

### **Inorganic Analysis:**

**Cold Vapor Atomic Absorption Spectrometry** is primarily used for mercury analysis.

**Inductively Coupled Argon Plasma Spectroscopy (ICP & ICP/MS)** is primarily use as a rapid means of determining multiple elements in a single analysis. Typically an ICP analysis can simultaneously determine up to 25 metals in a single analysis. Mass Spectrometry capabilities have been added for lower detection limits.

**Graphite Furnace Atomic Absorption Spectrophotometer (GFAAS)** is primarily used for discrete metals determination when a more sensitive (lower detection limit) is required.

**Classical Chemistry** encompasses a wide variety of tests and methodologies. At ESS Laboratory we routinely perform: BOD, COD, TOC, Cyanide, Phenols, Nitrates, Anions, Formaldehyde, Solids and a multitude of other Classical Chemistry tests. Analyses are typically performed using: automated equipment such as Auto Analyzers, Spectrophotometers, HPLC and Ion Chromatography.

### **Microbiological Analysis:**

**Microbiology** Our sister company, BAL Laboratory performs Bacteria and Fungi analyses, including Mold identification and investigations.

## Organic Analysis:

**Gas Chromatography/Mass Spectrometry (GC/MS)** is used for the identification and quantification of complex mixtures of organic compounds. Common tests performed by GC/MS include:

- Volatile Organics
- Semi-Volatile Organics
- Identification of non target compounds, Tentatively Identified Compounds (TICs)
- Selected Ion Monitoring (SIM)

**Gas Chromatography (GC)** when coupled with a wide range of detectors such as Conductivity, Electron Capture, Flame Ionization and Photoionization, is capable of performing analysis for specific compounds or groups of compounds. Common tests performed by Gas Chromatography include:

- Haloacetic acids
- Pesticides and PCBs
- PCB Congeners
- Chlorinated Herbicides
- Gasoline Range Organics
- Diesel Range Organics
- EPH – MA, CT, NJ
- VPH – MA, CT
- Petroleum Hydrocarbons
- Petroleum Hydrocarbon Fingerprinting

## Field Services:

ESS Laboratory's field personnel are available to collect or assist in the collection of environmental samples. Our staff is OSHA 40-hr HazWoper trained including Confined Space Certified. The field personnel are experienced in the proper collection techniques, sample handling, and decontamination procedures in compliance with State and Federal regulations. ESS Laboratory's field services include:

- Ground Water Sampling
- Influent and Effluent Sampling – Including MWRA Sampling
- Soil/Waste Pile Sampling and Compositing
- Stream Sampling
- Potable Water Sampling
- Surficial Sampling: Wipes, Chips and Sweepings
- Field Measurement: pH, Temperature, Specific Conductance, ORP, %LEL, O<sub>2</sub>, CO and H<sub>2</sub>S
- Field Screening of soils for petroleum contamination.

## **Value Added Services**

### **Project Management**

Understanding and meeting our client's expectations is paramount at ESS Laboratory. We believe a business relationship should be a partnership. This partnership will ultimately result in a successful analytical project. One of the ways we meet this expectation is to assign each client a Project Manager. A single point of contact facilitates communications and logistics. Our Project Managers become familiar with your objectives and requirements and work with our laboratory staff to communicate those requirements. This ensures that we meet or exceed your requirements. Our Project Managers can e-mail our clients a confirmation of receipt of samples upon request.

### **Web Access**

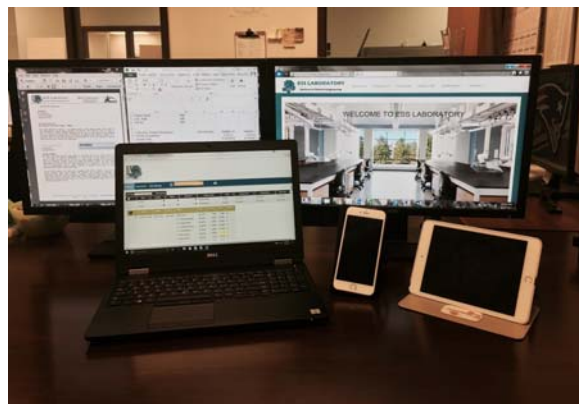
At our website clients can interface with our Laboratory Information Management System to determine sample status and access analytical data. Upon completion of a project, any data packages and EDDs which have been requested can be downloaded.

Data access is not the only advantage to the ESS Laboratory website. Other conveniences include:

- Bottle Orders
- Scheduling of Courier Services
- Directions
- Client Surveys
- Downloads including Chains of Custody and Sampling Instructions
- Helpful links to Environmental Information websites, State and Federal Agencies

## Reporting and Electronic Data Deliverables

ESS Laboratory utilizes a Laboratory Information Management System (LIMS). The LIMS interfaces with the laboratory instrumentation to produce paperless analytical reports with extensive quality control and to generate electronic deliverables. This promotes data integrity, speed, and ease of use. ESS Laboratory has the tools and systems available to provide data electronically to our clients. We offer a variety of electronic data deliverables (EDDs), which facilitate:



- Regulatory (State and Permit) Comparison
- Data Storgew
- Sorting and Querying of Data
- Data Transfer to programs such as GIS Key, EQulS, MWRA, NPDES, EnviroData and others

ESS Laboratory also offers customized EDDs based upon client or project specific requirements. Contact your Project Manager for pricing and details.

## Sampling Kits



Our Sample Kits include pre-preserved sample containers, chains of custody, and coolers to help you meet your regulatory requirements. Methanol kits and/or Encore samplers are also available upon request.

## Courier Service

ESS Laboratory maintains a fleet of vehicles and trained couriers to ensure prompt assistance with logistical requirements. Our couriers can deliver Sample Kits to clients upon request. Deliveries and pickups can be provided on site or at the client's office.



## Management Staff

Our senior management staff provides leadership, experience and the business insight necessary to make ESS Laboratory succeed and grow. Our laboratory is staffed with a highly skilled group of chemists and scientists with extensive experience in environmental analysis. They are managed by a knowledgeable team of professionals dedicated to quality and client satisfaction. To complement our laboratory staff, we maintain a support group that includes; couriers, field samplers, project managers and information technology personnel.

**Laurel Stoddard**, our Laboratory Director, is responsible for the overall management of the laboratory, in addition to ensuring that client concerns and expectations are met in a timely manner. She has a BS in Chemistry and over 30 years of laboratory experience which makes her an effective client resource. Ms. Stoddard has the ability to assist with the documentation of your project requirements and the translation of technical terminology.

**Eric Baanante**, our Operations Manager, is an integral part of the management team. Mr. Baanante is responsible for the operation, technical performance and data quality of the laboratory. He has a BS in Chemistry and extensive knowledge of analytical methodologies as well as 'hands on' experience with all phases of analysis. Mr. Baanante ensures that the analytical procedures are performed in strict compliance with our Standard Operating Procedures and QA Manual.

**Jim Badger**, our QA/QC Officer, is responsible for ensuring and maintaining ESS Laboratory's commitment to total quality management and continuous quality improvement. He is also responsible for the data review and laboratory report compliance with government and client specifications. Mr. Badger has a BS in Applied Chemistry and has implemented an effective Quality Assurance/Quality Control program in the laboratory which includes quality systems and monitoring quality objectives. He ensures that the laboratory complies with appropriate regulations and coordinates performance evaluation analyses for state and federal certifications and accreditations. It is this QA/QC program that contributes to the high standards and integrity at ESS Laboratory.

**Ines Bauer Moreno**, our Operations Specialist, is an integral member of the operations group. Ms. Moreno is responsible for method development, methods optimization, training and instrument repair and maintenance. Ms. Moreno has a Ph.D. in Chemistry and over 12 years of laboratory management and operations experience. Her experience in organic chemistry, analytical methods and instrumentation, is a vital asset to ESS laboratory.



## **Quality Assurance Overview**

At ESS Laboratory, we make a concerted effort to maintain our high quality standards while always striving to improve our operations through innovation and new technology.

ESS Laboratory is proud of the reputation we have established for scientifically valid and legally defensible, accurate and precise analytical information.

To ensure that our laboratory can constantly achieve our clients' expectations we have implemented a comprehensive Quality Assurance/Quality Control program.

Our Quality Program has been uniquely designed and modeled to exceed NELAC, and Federal and State quality standards. This Program establishes a "Continuous Process Improvement" atmosphere and maintains a quality standard which is unsurpassed in the industry. Our QA/QC department continuously monitors quality to ensure legally defensible, quality data.

Our Quality Systems are clearly documented in our Quality Assurance Plan and are utilized by all ESS Laboratory employees. Standard Operating Procedures for all tests and procedures performed by ESS Laboratory are developed in accordance with the guidelines set forth in our Quality Assurance Plan.

For detailed documentation regarding our Quality System, please contact ESS Laboratory and request a copy of our Quality Assurance Plan.

## Instrumentation and Equipment

ESS Laboratory is equipped with the instrumentation and equipment necessary to perform testing in compliance with Federal and State Regulations. Prior to each use instrumentation is calibrated according to the appropriate analytical method requirements. The calibration is then verified by an independently prepared standard. Validation of calibration and verification is recorded. A maintenance schedule and log are maintained for each instrument. A summary of our major instrumentation is provided in the table below.

Instrumentation Summary	
Instrumentation Type	Number of Instruments
Semi-Volatile Gas Chromatographs/Mass Spectrometers (GC/MS)	5
Volatile Gas Chromatographs/Mass Spectrometers with Archon Auto Samplers (GC/MS)	6
Gas Chromatograph with FID/PID detector (GC)	2
Gas Chromatograph with ECD detectors (GC)	6
Gas Chromatograph with FID detectors (GC)	4
Spectrophotometer	1
High Pressure Liquid Chromatography (HPLC)	2
Inductively Coupled Plasma Spectrophotometer (ICP and ICP MS)	4
Mercury Cold Vapor Spectrophotometer (CVAA)	2
Graphite Furnace Atomic Absorption Spectrophotometer (GFAAS)	1
Wet Chemistry Auto Analyzer	2
Automated Soxhlet Extractor	2
Block Digestor	7
Midi Distillation Unit	2
Manual Soxhlet Setups	100
Microwave Digestion Unit	1
<b><i>ESS Laboratory also maintains an array of other laboratory instrumentation necessary to perform classical Wet Chemistry Tests</i></b>	

## Project Experience

ESS Laboratory has performed numerous projects to determine compliance with regulatory requirements or to assess potential environmental liabilities.

The following is a summary of some of those projects

<b>Client Name</b>	<b>Contract Description</b>	<b>Project Description</b>
Consulting Firm Marion, MA	Site Investigation of Former Mill Site	Performed sampling and analysis of soil, water, and waste samples, in support of a site investigation utilizing US EPA SW-846 and MA DEP methods. The analyses include waste disposable parameters and field screening analysis for Total Petroleum Hydrocarbons.
Consulting Firm Sandwich, MA	Site Investigation for Airport	Performed analysis of soil, water, and waste samples in support of a site investigation, utilizing US EPA SW-846 and MA DEP Protocol. The analyses included Organic and Inorganic tests.
Consulting Firm Providence, RI	Suspected MGP Waste Disposal Site	Performed analysis of samples from a suspected waste disposal site, in support of an investigation, utilizing US EPA protocols and provided full data deliverable packages with over a 99.5 % acceptance rate by an independent data validator.
Consulting Firm Providence, RI	Emergency Response for Gasoline Release	Provided one (1) hour turnaround for the analysis of Volatile Organic Compounds associated with a gasoline line that was breached during a weekend construction project
Consulting Firm East Providence RI	Superfund Site	Performed a 12 hour rapid turnaround analysis of groundwater samples to delineate screening levels for monitoring well installations
Consulting Firm Providence, RI	Emergency Response for Mercury Release	Provided personnel to perform field air monitoring and analysis for Mercury in private homes, vehicles, hospital, schools, in response to a Mercury release.
Consulting Firm Northern MA	Site Investigation of Semi-conductor Facility	Performed analysis of soils and groundwater samples for Volatile & Semi-volatile Organics, Metals, PCBs, Perchlorates, and Total Petroleum Hydrocarbons, in support of a Site Investigation
Consulting Firm Newport, RI	Dredge Spoil Analysis at a Marina	Performed sampling of dredge spoils from a floating drill platform for over a three week period. The samples were analyzed for Volatile Organics, PCBs, and Metals.
Utility Providence, RI	Wastewater Discharge	Provided Operation and Maintenance including Confined Space Sampling for compliance with a POTW requirement. The analysis included Volatile, Semi-Volatile organics, Metals and various Wet Chemistry Parameters.
Utility Providence, RI	Emergency Response	Performed PCB analysis on a rapid turn around, with results provided in 5 hours in support of a transformer oil spill

<b>Client Name</b>	<b>Contract Description</b>	<b>Project Description</b>
Private Party	Drinking Water Analysis	Performed Volatile Organics Analysis of Drinking Water samples which ultimately prompted an investigation of the contamination by a State regulatory agency.
Construction Firm, Warwick RI	Emergency Response due to an Explosion	Performed sampling and analysis of aqueous sample for Volatile Organics compounds in support of an Explosion Investigation at a Construction Site
Consulting Firm Glastonbury, CT	MGP sites Scranton, PA	Performed analysis of soil, water, and waste samples in support of an investigation of various MGP sites owned by a national utility company. Samples were analyzed for various Organic and Inorganic compounds utilizing US EPA SW-846
Industrial Client Lynn, MA	Waste Characterization	Performed analytical services for a Multi-year contract to provide waste characterization analyses on a variety of materials for disposal. These included; Tyvek suits, oil, rags, batteries, paint, solvents, PCB wipes and floor sweepings.
Industrial Client Versailles, CT	Landfill Effluent analysis	Performed quarterly analysis of ground water samples including weekly effluent analysis for a variety of contaminants, in compliance with a permit requirement.
Consulting Firm Needham, MA	Brownfields Redevelopment Project	Performed a 3 year analytical program for an industrial site redevelopment project in Boston. Soil and water samples were analyzed using the MCP guidelines. Many of the disposal parameters of the excavated soils required a rapid turnaround of 24 to 48 hours.
Consulting Firm Merrimack, NH	Industrial Plant Closure Investigation	Performed analytical services in support of a closure investigation at a former electroplating facility. Soil, aqueous, concrete cores, oil and groundwater samples were analyzed for; Volatiles, PAH's, PCB's, Cyanide, Metals, Hexavalent Chromium, TPH and TCLP parameters.
Consulting Firm Warwick, RI	Providence RI Brownfields Redevelopment Project	Performed analytical services for an industrial site redevelopment project, in downtown Providence. Soil and groundwater samples were analyzed to determine the extent of remediation required to ensure public safety.
Consulting Firm Manchester, NH	Fort Devens MA	Provided analytical services in support of an investigation and demolition contract for the Army Corps of Engineers. Hundreds of samples were analyzed over a one month period for pesticides and disposal parameters.
Consulting Firm Newburgh, NY	USACE Groton, CT	Provided analytical services in support of a site investigation and remediation project. Samples were analyzed for various Organic and Inorganic compounds utilizing US EPA SW-846 protocols including providing USACE deliverables.
Consulting Firm Marlboro, MA	MMR AFCEE Cape Cod, MA F41264-01-D-8551	Provided analytical services for Organic and Inorganic compounds including physical parameters. The analyses were performed in accordance with US EPA SW846 and ASTM protocols including AFCEE ERPIRMS deliverables.
Consulting Firm Southborough,	Navy Contract RI Nike Test	Provided analytical services in support of a remediation site investigation Samples were analyzed for various Organic

<b>Client Name</b>	<b>Contract Description</b>	<b>Project Description</b>
MA	Pilot Site	and Inorganic compounds utilizing US EPA SW-846 protocols including providing full deliverable packages
Consulting Firm Lawrence, MA	Coast Guard Weymouth, MA	Provided analytical support for a site investigation in Weymouth. Samples were analyzed for various Organic and Inorganic compounds utilizing US EPA SW-846 protocols including providing full deliverable packages
Consulting Firm Manchester, NH	USACE Site Investigation and Remediation	Provided analytical services in support of a site investigation at the US Army Depot, Seneca, NY. Soil and water were analyzed for waste disposable parameters. Many samples required rapid turnaround.
Consulting Firm Southborough, Massachusetts	Investigation of a Naval Air Station	Performed analysis of soil, water, and waste samples for organic and inorganic compounds in support of a site investigation at the Brunswick Naval Air Station, Maine.
Consulting Firm Westford, Massachusetts	USACE NALF Site	Provided analytical services in support of a remedial investigation. Samples were analyzed for organic and inorganic compounds and included full data deliverable packages.
Consulting Firm Newburgh, NY	Remedial Investigation	Provided analytical support at the Naval Facility in Bloomfield, CT. The project included a large number of monitoring wells that were analyzed quarterly as well as ongoing soils investigation.
Consulting Firm Wakefield, MA	Wastewater Discharge Investigation	Provide analytical services for a four week investigation of twenty source locations that impacted a wastewater discharge. The data was used to determine sources and treatment for the wastewater discharged to the MWRA.
Consulting Firm Marlborough, MA	Ottati & Goss Superfund Site New Hampshire DACA27-99-D- 0018	Provided analytical services in support of an onsite thermal treatment plant project for the US EPA and Army Corps of Engineers. Several thousand samples over an 8 month period were analyzed on a 24 hour turn time. The primary contaminants of concern were PCB's and Volatile organics.

## ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

### ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

[http://datamine2.state.nj.us/DEP\\_OPRA/OpraMain/pi\\_main?mode=pi\\_by\\_site&sort\\_order=PI\\_NAMEA&Select+a+Site:=58715](http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715)

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

<http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>