



An Emergency is NOT the time to Exchange Business Cards: Preparedness and Response Tools from EPA's Water Laboratory Alliance (WLA)

Latisha P. Mapp, Team Leader
Water Laboratory Alliance
U.S. EPA Office of Water

S,

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Agenda

- Background & Implementation
- Enhancing Water Sector Preparedness
- Tools and Resources
- Benefits





WLA Background & Implementation

Authority

Homeland Security Presidential Directive 9 (HSPD-9) Directs the EPA to:

- “develop *nationwide laboratory networks for . . . water quality* that integrate existing Federal and State laboratory resources, are interconnected, and utilize standardized diagnostic protocols and procedures”
 - EPA Response:
Water Laboratory Alliance



Integrated Consortium of Laboratory Networks



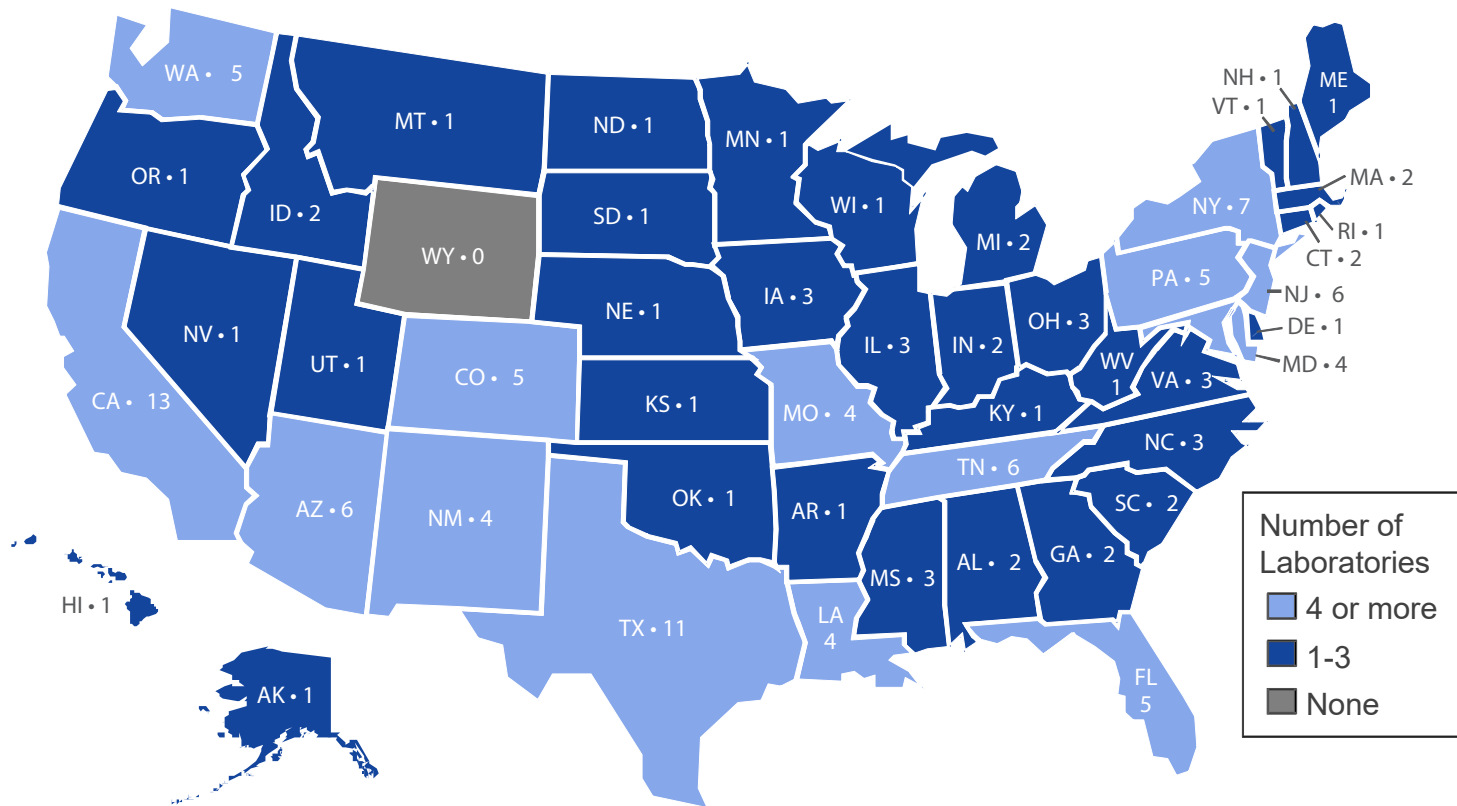
WLA Current Status

WLA Member laboratories fall into a number of categories:



- Commercial
- EPA
- State Government
- Local/Municipal
- Utility
- Government Owned Contractor Operated (GOCO)
- Other Federal Laboratories
- College/University

WLA Membership: 140 Laboratories



Incidents that Required Analytical Support



Boston, Massachusetts Water Main Break, 2010

New England Regional Laboratory requested in-kind support of laboratory supplies for analysis

Fukushima, Japan Daiichi Nuclear Power Plant, 2011

ERLN/WLA laboratory analyzed drinking water samples for Cesium 134 and 137 by gamma spectroscopy



Incidents, continued



Eden, North Carolina - Coal Ash Spill, 2014

ERLN/WLA laboratory provided particle size distribution (PSD) analysis of water samples

Toledo, Ohio - Microcystin Contamination, 2014 (no WLA involvement)

Communication between all organizations involved





WLA Tools and Resources

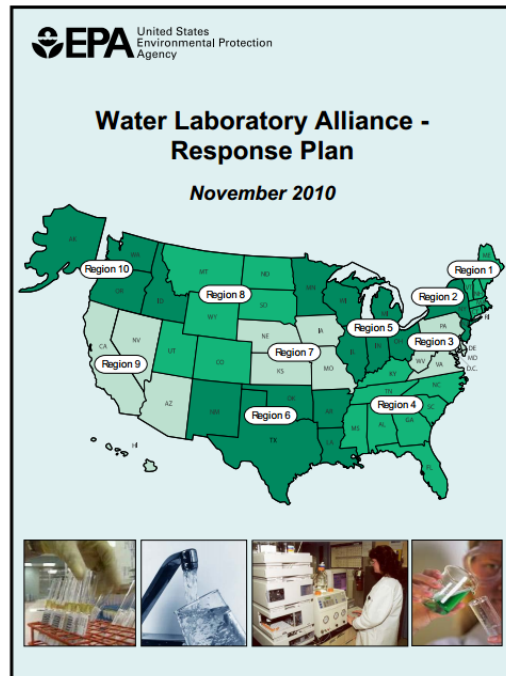
Laboratory Black Box

Often during emergency response, laboratories are treated as a “black box” for data generation:

Samples go in and data comes out.



WLA Response Plan (WLA-RP)



- Establishes a comprehensive, national approach to laboratory response to intentional or unintentional water contamination incidents
- Can be used to coordinate laboratory response for multi-regional and smaller scale incidents
- Provides guidance on communication, sample analyses and data reporting issues

WLA-RP Roles and Responsibilities

Analytical Service Requester (ASR)

- Primary point of contact who requests analytical assistance
- Primary decision maker regarding analyses needed, data turnaround times, etc.

Primary Responding Laboratory (PRL)

- Initial laboratory contacted by the ASR
- Help coordinate activities of other support laboratories

Mutual Support Laboratory (MSL)

- Additional laboratory engaged by ASR or PRL to provide resources to meet the analytical needs of an incident

Appendix C: Help Sheet for Requesting Analytical Support

Appendix C Help Sheet for Requesting Analytical Support during an Emergency Response

Purpose: This sheet is designed to help discussions between the Analytical Services Requester (ASR) and the laboratory. The ASR may be either the Incident Commander/representative or the Primary Responding Laboratory (PRL). The Laboratory may be either the PRL or a Mutual Support Laboratory. The Laboratory should use this help sheet to ensure that all critical information is exchanged. The information should be recorded in a logbook or notebook dedicated to the incident, the laboratory's standard forms, or the forms that follow.

For each analytical request, to the extent practical, the ASR should record any information provided in writing and send to the laboratory, e.g., via fax, e-mail, etc.

COMMUNICATION INFORMATION

During the initial call with a requestor, record the following information:

- Date and time of the call
- Incident primary point-of-contact (POC)
- POC phone number, cell number, fax number, and email address
- Other relevant contact information

SITE CHARACTERIZATION INFORMATION

Ensure that the following information is documented with the sample paperwork shipped to the laboratory:

- General background of the incident
- Available field data – environmental and clinical
- Specific hazards associated with the site
- Samples collected from the site

GENERAL INFORMATION FOR LAB SERVICE REQUESTERS

Record the following information regarding the analytical request:

- Analytes of interest
- Matrix
- Analytical method(s) preferred
- Number of samples
- Reporting limit(s)
- Background levels (if data is available)
- Quantitative (standard QC or reduced QC) or semi-quantitative/screening (estimated; presence/absence)
- Data validation (preliminary or full validation)
- Turn around time

Review/Confirm sample volume, container and preservation requirements with requestor.

CHAIN OF CUSTODY REQUIREMENTS

Determine requirements for chain of custody:

- Routine chain of custody or law enforcement sensitive?
- Internal chain of custody required (if law enforcement sensitive)?
- Other special conditions or instructions

SAMPLE SHIPMENTS

Inform the requestor of the laboratory's shipping address and record the following:


- Transport method

The WLA has developed tools and resources to aid in an analytical response

- WLA Analytical Preparedness Full-Scale Exercise (AP-FSE) Toolkit
- Analytical Preparedness Self-Assessment (APS)
- *Sampling Guidance for Unknown Contaminants*
- Water Contaminant Information Tool (WCIT)
- Laboratory Compendium
- Continuity of Operations Plan (COOP) Template
- Accessing Laboratory Support



WLA Analytical Preparedness Full-Scale Exercise (AP-FSE) Toolkit

 U.S. Environmental Protection Agency (EPA)
WATER LABORATORY ALLIANCE (WLA) Office of Water (4608-T) EPA 810-B-20-001 | August 2018

Home	Welcome & Overview	Introduction	Step 1: Initiate	Step 2: Participants	Step 3: Objectives	Step 4: Scenario	Step 5: Schedule
	Step 6: Documentation	Step 7: Training	Step 8: Exercise	Step 9: Hot Wash	Step 10: Follow-Up	Resources	Glossary


Analytical Preparedness

FULL-SCALE

Exercise Toolkit


CLICK HERE TO CONTINUE TO WELCOME and OVERVIEW

The Analytical Preparedness Full-Scale Exercise (AP-FSE) Toolkit provides the necessary guidance and examples for organizations to plan and conduct their own exercise.



https://www.epa.gov/sites/production/files/2018-09/documents/ap_fse_toolkit_0.pdf

Intro: WLA Analytical Preparedness Full-Scale Exercise (AP-FSE) Toolkit



U.S. Environmental Protection Agency (EPA)

WATER LABORATORY ALLIANCE (WLA)

Analytical Preparedness
Full-Scale Exercise (AP-FSE) Toolkit

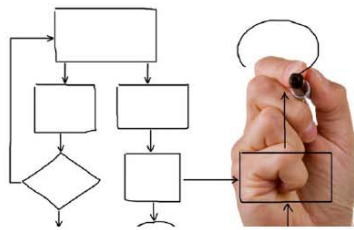

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Introduction: 10-Step Process for Planning and Conducting an AP-FSE

Process

There are 10 steps to developing, conducting and evaluating AP-FSEs, as listed on the right. Before planning your exercise, please read through the entire 10-step process presented in this toolkit. It is critical to be aware of activities and resources in each section before designing and conducting your exercise. To access the glossary and find definitions of acronyms, click the "Glossary" button located at the top of each page of this guide.

Generally, 6 to 12 months should be allowed for planning an AP-FSE depending on the complexity of the exercise. Sufficient time will be needed to recruit exercise participants, develop and review exercise documentation and obtain the necessary laboratory supplies for sample analyses. An example planning schedule is provided in [Step 5.1](#).

	Homeland Security Exercise and Evaluation Program (HSEEP)	AP-FSE 10-Step Process
Exercise Evaluation	Exercise Design and Development	1. Initiate the Exercise Planning Process
		2. Identify and Recruit Potential Participants
		3. Identify Objectives
		4. Develop the Scenario and Expected Actions
		5. Schedule the Exercise
		6. Prepare Exercise Documents
	Exercise Conduct	7. Conduct Pre-Exercise Training Sessions, Briefings and Laboratory Practice
		8. Conduct the Exercise
		9. Conduct the Hot Wash
	Improvement Planning	10. Perform Exercise Follow-Up Activities

PRINT ALL
 PRINT THIS SECTION

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NEXT →

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WLA Analytical Preparedness Self-Assessment (APS)

Purpose: Increase stakeholder preparedness to respond to analytical needs arising from water contamination events by enhancing awareness of EPA water security tools and resources

- Easy-to-use starting place to assess preparedness for water contamination incidents
- APS is a Toolbox that:
 - Provides a customized checklist of recommendations to improve preparedness
 - Identifies and guides users to existing analytical preparedness tools and resources

WLA Analytical Preparedness Self-Assessment

Introduction

Welcome to the Water Laboratory Alliance (WLA) Analytical Preparedness Self-Assessment (APS). The APS aims to increase stakeholder preparedness to respond to analytical needs arising from water contamination events by enhancing awareness of EPA water security tools and resources. The following stakeholders will particularly benefit from taking this analytical preparedness self-assessment:

- WLA Member and Non-member laboratories
- Drinking Water Utilities and Wastewater Utilities
- Emergency Managers, On-Scene Coordinators and First Responders
- State/Local Government Officials
- Public Health Officials
- Other

To complete the APS, select the most appropriate answer for your organization from each dropdown list. The APS will generate a series of customized recommendations to enhance your organization's preparedness. The final recommendation list may be printed using your browser's print function.

Please note this exercise will take approximately 25 minutes to complete. Use the progress bar in the top right to track your progress toward completion. You will be able to export your answers to a Word document at the end. If you close out of your browser during the process, your selections will not be saved.

NEXT SECTION

<https://www.epa.gov/waterlabnetwork/wla-analytical-preparedness-self-assessment>

Sampling Guidance for Unknown Contaminants in Drinking Water

- Integrates sample collection, preservation and transport procedures
- Provides an example of what is required for a comprehensive sampling program
- Supplements emergency response plans
- Includes helpful resources, including approaches to collaborate with other agencies

Table 7-2: Chemical and Toxin Collection Guidelines

Contaminant Class/Type	Container Volume and Type	No. of Containers	Disinfection Reducing Agent	Preservative	Holding Time	Analytical Technique
Toxin	100 mL - 1 L; refer to analytical method and/or SCID for toxin-specific requirements	Method-specific	None	Transport on ice or at (-) 20°C (on dry ice); refer to SCID for toxin specific requirements	Minimize transport and storage time. If feasible, analyze or extract immediately upon receipt at the laboratory.	Varies
Volatiles (Methods 502.2, 8021B, 524.3, 8260B)	40 mL, Glass w/ PTFE-lined septa	5	Ascorbic acid (0.25-0.5 g)	1:1 HCl to pH ≤2 Store at <4°C	14 days	P&T - GC/MS P&T - GC/PID/ELCD
Carbamate Pesticides (Methods 531.1, 531.2)	40 mL, Glass w/ PTFE-lined septa	4	Sodium thiosulfate (12.5 mg)	Potassium dihydrogen citrate; adjust sample pH to ~3.8 Store at ≤4°C	28 days	HPLC-fluorescence
Unknown organics (volatile)	40 mL, Glass w/ PTFE-lined septa	5	None	None - mark samples not preserved Store at <4°C	7 days	P&T - GC/MS
Metals/ Elements (Methods 200.7, 200.8, 200.9)	500 mL, Plastic (i.e., HDPE)	2	None	Trace metal grade nitric acid to pH ≤2	6 months	ICP-MS ICP-AES AA
Organometallic compounds	125 mL, Plastic (i.e., HDPE)	2	None	Nitric acid to pH ≤2	30 days	AA - cold vapor manual
Toxicity	125 mL, Glass	2	Consult manufacturer's instructions	Consult manufacturer's instructions	Consult manufacturer's instructions	Refer to assay (several vendors)

<https://www.epa.gov/waterlabnetwork/sampling-guidance-unknown-contaminants-drinking-water>

Water Contaminant Information Tool (WCIT)

- Released in 2005
- Describes 811 contaminants that pose a serious threat if accidentally or intentionally introduced into water systems
- Data are reviewed by experts and regularly updated
- Data are specific to the needs of drinking water and wastewater systems



<https://www.epa.gov/waterlabnetwork/access-water-contaminant-information-tool>

ERLN Laboratory Compendium



EPA's Compendium of Environmental Testing Laboratories (Laboratory Compendium)

- Environmental Response Laboratory Network (ERLN) tool housed on a secure web-based server
- An online database of nationwide environmental laboratories available to:
 - EPA, Federal, State and local emergency responders
 - Laboratory personnel
 - Water utilities
- Contains records of laboratories with the capability and capacity to analyze a variety of agents:
 - Chemical, biological and radiochemical

<https://cfext.epa.gov/cet/>

COOP: Value to Laboratories



Continuity of Operations Plan Template for Drinking Water and Wastewater Laboratories

[Department/Agency/Laboratory Name]
[Month Day, Year]

[Department/Agency/Laboratory Name]
[Street Address]
[City, State Zip Code]
[Department/Agency/Laboratory Symbol/Logo]

Office of Water (4608T) EPA 817-B-13-004 November 2013

Continuity of Operations Plan (COOP)

- Establishes policies and procedures to ensure a laboratory **can perform critical and essential functions** during a wide range of emergencies
- The COOP Template
 - Allows laboratories to develop a COOP specific to their laboratory in a stepwise fashion
 - Provides the framework and guidance to prepare a comprehensive COOP
 - Makes it easy to update the COOP
 - Includes supplemental resources such as the *COOP Instructions* and fact sheet

Accessing Laboratory Support Interactive Training: Summary Resource

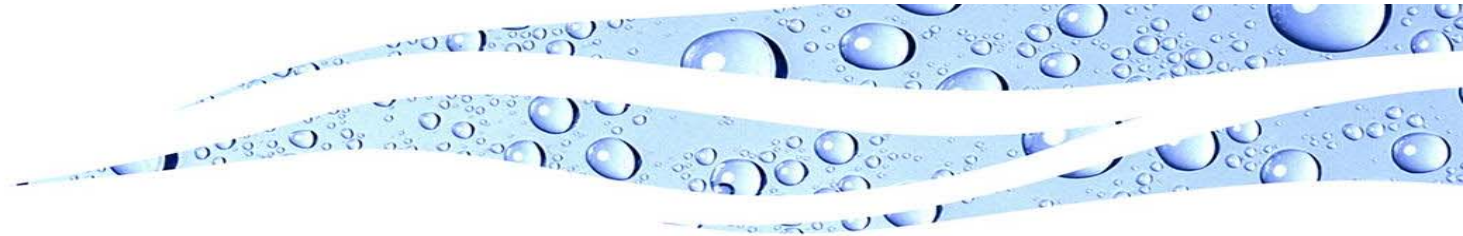
Would you know where to find analytical support if:

- Your laboratory was expecting a large number of samples and a key staff member had an emergency?
- Your supply of a critical reagent was on backorder and you received unexpected samples?
- After a major flood, a huge surge of *Cryptosporidium* samples was received?

https://www.epa.gov/sites/production/files/2017-07/documents/accessing_laboratory_support.pdf

The screenshot shows the top portion of a web page titled "WLA Resource for Accessing Laboratory Support". At the top right, it features the EPA logo and the text "U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) ENVIRONMENTAL RESPONSE LABORATORY NETWORK (ERLN) WATER LABORATORY ALLIANCE (WLA)". The main heading is "WLA Resource for Accessing Laboratory Support". Below this, a paragraph states: "This WLA resource can be used to identify analytical support through five routes." A "Key Resources" box lists "WLA Web Page & WLA Training Center" and "WLA Response Plan (WLA-RP)", with a note: "When negotiating terms for analytical support, or providing situational updates during a response, use Appendix C in the Appendix forms (Word file) found at the WLA-RP Web Page." Three main sections are visible: "Local Laboratories" (Check with local laboratories...), "State Resources" (Check with state agency, laboratory or your state Water/Wastewater Agency Response Network (WARN)...), and "Laboratory Compendium" (Search the Laboratory Compendium...).

The cover features a blue background with a water splash. The title "ACCESSING LABORATORY SUPPORT" is prominently displayed in white, with the subtitle "A WLA INTERACTIVE TRAINING RESOURCE" below it. At the bottom, it includes the EPA logo and the text "U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) ENVIRONMENTAL RESPONSE LABORATORY NETWORK (ERLN) WATER LABORATORY ALLIANCE (WLA)". A "BEGIN" button is located in the bottom right corner.



How can WLA benefit your organization?

WLA Training Opportunities: Live Events



**WLA Response
Plan Tabletop
Exercise (TTX)**



**Continuity of
Operations (COOP)
Template**



**Analytical
Preparedness
Full-Scale
Exercise Toolkit**



**Sampling
Guidance for
Unknown
Contaminants**



**Water Contaminant
Information Tool
(WCIT)**



**Decontamination
Strategies**

To learn more these training opportunities and how to register, please visit <https://www.eventbrite.com/o/epa-office-of-water-water-security-division-water-laboratory-alliance-8453004715> or email the WLA Team at WLA@epa.gov

WLA Training Opportunities: On-Demand

The screenshot shows the EPA website page for the Drinking Water and Wastewater Laboratory Network. The page features a navigation bar with 'Environmental Topics', 'Laws & Regulations', and 'About EPA'. A search bar is located in the top right. The main heading is 'Drinking Water and Wastewater Laboratory Network'. Below the heading, there is a brief description of the WLA. The page is organized into several sections: 'WLA' with an image of lab equipment and links to learn about the WLA, become a member, and learn about the WLA Response Plan; 'Request Help Now' with an image of scientists and links to contact a lab, WLA program contacts, and request analytical services; 'Plan Ahead' with an image of a scientist and links to access the Water Contaminant Information Tool (WCIT), sample for unknown contaminants, create a Continuity of Operations Plan (COOP), find a laboratory method, and access laboratory support; 'Practice Response' with an image of a scientist and links to conduct analytical preparedness assessment, access the WLA Training Center, and plan a full-scale laboratory exercise. On the right side, there is a 'WLA Overview' section with links to the WLA Toolkit and Register for training, and a 'Related Information' section with links to Water Resilience, EPA's National Homeland Security Research Council (NHSRC), EPA's Environmental Response Laboratory Network (ERLN), and Association of Public Health Laboratories (APHL). A 'Join Our Email List' button is also present.

- **WLA Response Plan (WLA-RP) Training Module**
- Handling Criminal Investigation Samples: Maintaining Chain of Custody (Parts 1&2)
- Automated Ultrafiltration (UF) Device Videos
- Becoming a Water Laboratory Alliance Member
- Water Laboratory Alliance Overview for Members

<https://www.epa.gov/waterlabnetwork>

WLA Liaisons are an Important Part of Water Sector Security and Preparedness



WLA Liaisons play a central role.

WLA Liaisons include staff from:

- Drinking water utilities
- Wastewater utilities
- Emergency management agencies
- State public health laboratories
- State environmental laboratories
- Drinking water programs
- Water Sector associations

WLA Liaisons have direct access to:

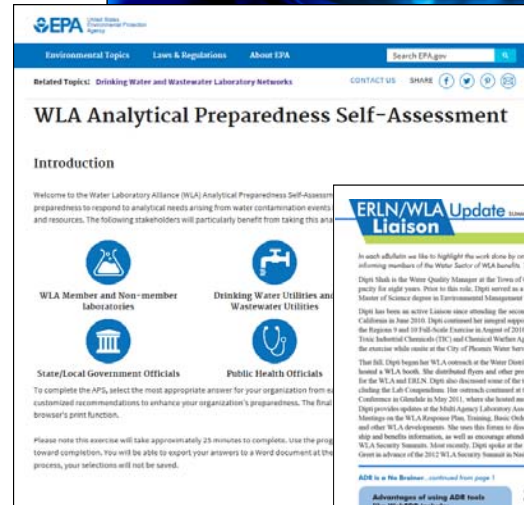
- Networking across sectors
- Reviewing and commenting on tools and resources that are under development
- Participating in tabletop and full-scale exercises
- Providing ideas and feedback for further collaboration and growth

Interested in becoming a WLA Liaison, or nominating a colleague?

Please contact us by email: WLA@epa.gov or phone: WLA Helpline (703)-461-2400.

Action Items

- Participate in an AP-FSE
- Complete the Analytical Preparedness Self Assessment for your organization
- Become a WLA Liaison
- Prepare sampling kits for unknowns in advance
- Participate in a webcast or take advantage of online training
- Share information on EPA tools and resources with your colleagues
- Have multiple staff sign up for WCIT
- Update your Laboratory Compendium profile



Utility and Laboratory: Potential Response Partners

- State drinking water agencies
- State Water/Wastewater Agency Response Network (WARN)
- Local and state elected officials
- Local and state emergency management agencies
- Local and state emergency operations centers (EOCs)
- Local and state health departments
- Drinking water associations (e.g., rural water associations)
- Federal government agencies (e.g., EPA, Centers for Disease Control and Prevention [CDC])
- First responders/emergency managers
- Hospitals, including emergency rooms
- Law enforcement (including the Federal Bureau of Investigation [FBI])
- Media
- Other water utilities
- Phone companies
- Poison Control Centers
- Power companies

We are Here to Help!

For information on joining ERLN/WLA visit:

<https://www.epa.gov/emergency-response/who-should-join-environmental-response-laboratory-network>



For assistance:

- Call the ERLN/WLA Helpline:
703-461-2400
- Email: ERLNHelpdesk@csra.com
or WLA@epa.gov

<https://www.epa.gov/waterlabnetwork>