United States
Environmental Protection
Agency

EPA Regions 7 and 8 Laboratory Emergency Response Full-Scale Exercise After-Action Report: Chemical Environmental and Food Scenario

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We would like to thank the exercise design team and laboratory participants for their investment of time, effort, and experience in this exercise.

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Colorado Department of Public Health and Environment State Laboratory
Johnson County Environmental Water Quality Laboratory
Kansas Health & Environmental Laboratories
KCMO Water Services Department, Division of Laboratory Services
Missouri Department of Natural Resources, Environmental Services Program Laboratory
Missouri State Public Health Laboratory
Montana Department of Public Health and Human Services Environmental Laboratory
Nebraska Public Health Environmental Laboratory
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South Dakota Department of Health Laboratory Services
State Hygienic Laboratory, Ankeny Laboratory
Test America – Cedar Falls
Test America – Denver

Test America – St. Louis
FDA, Kansas City District
U.S. EPA National Enforcement Investigations Center (NEIC) Laboratory
U.S. EPA Region 7 Science and Technology Center
U.S. EPA Region 8 Laboratory
Utah Department of Health, Unified State Laboratory: Public Health
WaterOne Laboratory
Wyoming Department of Agriculture Analytical Services Laboratory

Executive Summary

The U.S. Environmental Protection Agency (EPA), Centers for Disease Control and Prevention (CDC), and Food and Drug Administration (FDA) collaborated with EPA Regions 7 and 8 to plan and conduct a full-scale laboratory response exercise. The goals of the exercise were to test EPA's Water Laboratory Alliance (WLA) Response Plan (WLA-RP) and Environmental Response Laboratory Network (ERLN) emergency response procedures during a large-scale, multi-region incident. Other goals included identifying opportunities for enhancement and improvement of collaboration, communication, and coordination between three networks from the Integrated Consortium of Laboratory Networks (ICLN):

- EPA's ERLN
- CDC's Laboratory Response Network (LRN)
- FDA and the United States Department of Agriculture's (USDA's) Food Emergency Response Network (FERN)

The full-scale exercise (FSE) assessed the effectiveness of laboratory response to simultaneous chemical and biological contamination incidents.

The FSE in EPA Regions 7 and 8 was conducted during the week of October 17, 2011, with key initial steps starting on Friday, October 14, 2011. The FSE was divided into three major scenarios which are described as follows:

- *Chemical Environmental, Food, and Clinical*: Intentional introduction of a chemical into a drinking water storage tank. Drinking water, soil, and root beer samples were analyzed for the environmental and food portion of the exercise and urine specimens from patients exposed to contaminated drinking water were analyzed for the clinical portion of the exercise.
- *Biological Non-Select Agent:* Contamination of the distribution system and in-ground finished water reservoir as a result of agricultural flooding. Drinking water, surface water, and food samples were analyzed for this portion of the exercise.
- *Biological Select Agent:* Intentional introduction of a select agent directly into a drinking water distribution system. Drinking water samples were analyzed for this portion of the exercise.

This After-Action Report (AAR) addresses the findings and input related to analysis of environmental and food samples for the chemical scenario. Findings related to analysis of the clinical specimens for the chemical scenario will be addressed elsewhere. Separate AARs present the findings from the Biological Select Agent and Biological Non-Select Agent Scenarios.

The FSE involved participants from EPA Regions 7 and 8; EPA Headquarters; CDC; FDA; Federal Bureau of Investigation (FBI); public health, environmental, and commercial laboratories; drinking water utilities; state public health departments; and federal first responders. This multi-region exercise provided a venue for participants to practice procedures related to providing support to an environmental and public health incident that includes actual sample analyses, communication, coordination, and data reporting. Many of the steps and issues covered in the scenario were taken from lessons learned and corrections to plans and procedures derived from previous FSEs.

The Chemical Environmental and Food Scenario was designed to meet the following objectives:

- **Objective 1**: Test the procedures of the WLA-RP
- **Objective 2**: Practice ERLN/WLA environmental laboratory procedures integration, including use of the Incident Management Team (IMT) according to EPA's *Incident Management Handbook*
- **Objective 3**: Practice coordination among three ICLN networks (ERLN/WLA, LRN, and FERN) responding to a combined public health and environmental emergency

- **Objective 4**: Provide the EPA regions and laboratories with an opportunity to practice multi-regional coordination during a large-scale contamination incident, including data review and reporting using Web-based Electronic Data Review (WebEDR).
- **Objective 5**: Identify additional systems, operations, and mechanisms for the continued improvement of sample transport, data management, data transfer, and analytical support in response to a major contamination incident

Exercise Findings and Key Lessons Learned

In general, the participants rated the exercise as successful and stated that they enjoyed the interaction between the laboratories and EPA and FDA analytical coordinators, implementation of the WLA-RP, and the opportunity to work with real samples. Since many of the participants within this component have worked and participated in exercises together, they were well accustomed to the implementation and activation of response activities.

Significant Findings

- Laboratories were able to successfully analyze the exercise samples.
- The laboratories communicated and coordinated effectively throughout the exercise.
- Laboratories identified internal issues that warrant review and update of their own processes and procedures.
- Most of the laboratories were able to successfully upload their data to Web-based Electronic Data Review (WebEDR); however, most laboratories indicated they had issues initially due to lack of familiarity with the software and some formatting issues with their electronic data deliverable (EDD) files. The WebEDR hotline established for the exercise significantly helped laboratories with their data submissions.

Key Lessons Learned

- In the case of a large incident, the analytical services requestor (ASR)/laboratory coordinator should not be limited to a single individual, as the demands may be overwhelming.
- Multiple people should be familiar with laboratory operations to serve as Analytical Coordinators (*Incident Management Handbook*, pgs. 10–15) during an emergency response.
- Laboratories should establish command centers during an emergency response that will serve as the laboratories' headquarters to coordinate communication and their response activities.
- Forms for requesting analytical services should be completed electronically and sent to potential support laboratories to facilitate exchange of information.
- Additional training and exercises focusing specifically on laboratory/field data reporting using WebEDR are needed.
- Ways to facilitate data submission using WebEDR need to be evaluated, including pre-population of some fields, providing additional guidance on valid values, and acceptance of various date and time formats.

Section 1.0 General Full-Scale Exercise Design Summary

The multi-regional full-scale exercise (FSE) was designed to exercise and evaluate the Water Laboratory Alliance (WLA) Response Plan (WLA-RP) and other Environmental Response Laboratory Network (ERLN), Laboratory Response Network (LRN), and Food Emergency Response Network (FERN) emergency response procedures, and identify opportunities for enhancement and improvement of collaboration, communication, and coordination. The FSE assessed the effectiveness of response to simultaneous chemical and biological contamination incidents.

1.1 Exercise Purpose

The U.S. Environmental Protection Agency (EPA), Centers for Disease Control and Prevention (CDC), and Food and Drug Administration (FDA) collaborated with EPA Regions 7 and 8 to plan and conduct a full-scale laboratory response exercise. One goal of the exercise was to evaluate EPA's WLA-RP and ERLN emergency response procedures. Other goals included identifying opportunities for enhancement and improvement of collaboration, communication, and coordination between three networks from the Integrated Consortium of Laboratory Networks (ICLN):

- EPA's ERLN
- CDC's LRN
- FDA and the United States Department of Agriculture (USDA's) FERN

The FSE in EPA Regions 7 and 8 was conducted primarily during the week of October 17, 2011, with several preliminary stages of the exercise notionally occurring Friday, October 14, 2011, through Sunday, October 16, 2011. The FSE was divided into the following three major components:

- *Chemical Environmental, Food, and Clinical*: Intentional introduction of a chemical into a drinking water storage tank. Drinking water, soil, and root beer samples were analyzed for the environmental and food portion of the exercise and urine specimens from patients exposed to contaminated drinking water were analyzed for the clinical portion of the exercise.
- *Biological Non-Select Agent*: Contamination of the distribution system and in-ground finished water reservoir as a result of agricultural flooding. Drinking water, surface water, and food samples were analyzed for this portion of the exercise.
- *Biological Select Agent*: Intentional introduction of a select agent directly into a drinking water distribution system. Drinking water samples were analyzed for this portion of the exercise.

This After-Action Report (AAR) addresses the findings for the Chemical Environmental and Food scenario. Findings from the Biological Select Agent and Biological Non-Select Agent Scenarios are presented in separate AARs.

The FSE involved participants from EPA Regions 7 and 8; EPA Headquarters; CDC; FDA; Federal Bureau of Investigation (FBI); public health, environmental, and commercial laboratories; drinking water utilities; state public health departments; and federal first responders. This multi-regional exercise provided a venue for participants to practice procedures related to providing support to an environmental and public health incident that included actual sample analyses, communication, coordination, and data reporting. Many of the steps and issues covered in the scenario were taken from lessons learned and corrections to plans and procedures derived from previous FSEs. While the exercise was designed to evaluate and practice multi-regional response procedures, the exercise also provided the opportunity for participants to review their internal operations and procedures. However, those issues are not included as part of the purpose of the exercise, and observations for correction and enhancement are to be determined by the participants themselves.

The FSE provided an opportunity to evaluate multi-regional laboratory coordination and communication against existing plans and procedures as well as the WLA-RP. In support of these goals, the Chemical Environmental and Food Scenario component of the FSE focused on the following objectives:

- **Objective 1**: Test the procedures of the WLA-RP
- **Objective 2**: Practice ERLN/WLA environmental laboratory procedures integration, including use of the Incident Management Team (IMT) according to EPA's *Incident Management Handbook*
- **Objective 3**: Practice coordination among three ICLN networks (ERLN/WLA, LRN, and FERN) responding to a combined public health and environmental emergency
- **Objective 4**: Provide the EPA regions and laboratories with an opportunity to practice multi-regional coordination during a large-scale contamination incident, including data review and reporting using Web-based Electronic Data Review (WebEDR).
- **Objective 5**: Identify additional systems, operations, and mechanisms for the continued improvement of sample transport, data management, data transfer, and analytical support in response to a major contamination incident

1.2 Exercise Design

The FSE was designed to include three scenarios (Chemical Environmental, Food, and Clinical; Biological Non-Select Agent; and Biological Select Agent) to address the particular area of effort for each group of participants. The Exercise Design Team was composed of EPA, CDC, FDA, FBI, Missouri Public Health Laboratory, Kansas City, Missouri (KCMO) Water Services Department, KCMO Health Department, Missouri 7th Civil Support Team (CST) and contractor staff to develop and implement the exercise.

The exercise was designed to be flexible and allow for multiple laboratories from across various regions to participate from their respective locations. This design allowed participants to address the geographical and time zone issues that may affect response actions and interactions during a real-world incident. The documentation for this exercise includes a Master Scenario Events Lists (MSELs) and Exercise Evaluation Guides (EEGs), which were created to meet the Department of Homeland Security's Homeland Security Exercise and Evaluation Program (HSEEP) guidelines.

The FSE was coordinated by controllers located at the EPA Region 7 Training and Logistics Center who directed activities and provided injects to ensure the continuity and flow of the exercise. The evaluators were present at each participating laboratory, the Region 7 IMT, and the site for collection of drinking water samples. Their responsibility was to observe and document exercise activities and to provide updates to the controllers. The evaluators underwent training in exercise evaluation techniques and use of the MSELs and EEGs.

The FSE took place over an 8-day period starting on a Friday (Day 1) and ending on the following Friday (Day 8). Information on the background scenario for the exercise is provided in Section 2.1. As each participating group completed their exercise activities, they were given the opportunity to discuss their findings during a half-hour debrief. Hot washes were conducted 3 days following the exercise (i.e., on Monday, October 24, 2011) for each exercise scenario to allow the participants to share their findings with the other participants.

The Chemical Scenario included an environmental component involving analysis of drinking water and soil samples and a food component involving analysis of root beer samples. For the environmental component, the IMT was located at the EPA Region 7 Training and Logistics Center in Kansas City, Missouri. Laboratory participants in the Chemistry Environmental portion of the exercise were located within Regions 7 and 8. The EPA Region 7 IMT took the lead in coordinating laboratory activities with support from EPA Region 8. For the food component, FDA coordinated the participating laboratory. KCMO Water Services Department, KCMO Health Department, EPA and Computer Sciences Corporation (CSC) staff provided injects to represent activities that might be undertaken by members of

the media, public, etc., and provided additional exercise injects to mimic real life complications that may be encountered during such incidents.

EPA's Office of Emergency Management (OEM) provided the soil, water, and food samples for the Chemical Environmental and Food portion of the exercise. The chemical samples were prepared by the EPA Quality Assurance Technical Support (QATS) contractor and were shipped along with sample documentation to each of the participating laboratories the week prior to the exercise. Laboratories were asked to hold these samples until exercise play began.

Section 2.0 Chemical Environmental Regions 7 and 8 FSE Overview

Exercise Name: Chemical Environmental EPA Region 7 and Region 8 FSE

Type of Exercise: Full-Scale Exercise with live samples

Exercise Start Date: Friday, October 14, 2011

Exercise End Date: Friday, October 21, 2011

Duration: 8 days with staggered sessions for different roles

Location: EPA Region 7 and Region 8

Sponsor: EPA, CDC, and FDA

Mission: Regional and agency laboratory integration and coordination

Table 1. Participating Laboratories

Laboratory Participant	Analyses	Point of Contact	Exercise Evaluator
ALS Laboratory Group	Water	Amy Wolf and Ken Campbell	Jeff Kujawa
City of Olathe Municipal Water/Wastewater Laboratory	Water	DeWayne McAllister	Melissa Krayca
Colorado Department of Public Health and Environment State Laboratory	Water	Laurie Peterson-Wright	Jennifer Kresl
Johnson County Environmental Water Quality Laboratory	Water	Tony Holt	David Becker
Kansas Health & Environmental Laboratories	Water	Shannon Gabel	Michael McNulty
KCMO Water Services Department, Division of Laboratory Services	Water	David Greene	Thomas Sanders
Missouri Department of Natural Resources, Environmental Services Program Laboratory	Water	Chris Boldt	Deana Cash
Missouri State Public Health Laboratory	Water	Steve Hynes	Mike Massman
Montana Department of Public Health and Human Services Environmental Laboratory	Water	Russel Leu	Jill Cohenour Adam Powers
Nebraska Public Health Environmental Laboratory	Water	Laurie Wieting	Mary Boden
North Dakota Department of Health Division of Laboratory Services	Water	Myra Kosse	Errol Erickson
South Dakota Department of Health Laboratory Services	Water	Mike Smith	Jerry Hofer Alternate: Mike Smith
State Hygienic Laboratory, Ankeny Laboratory	Water	Michael D. Wichman	Lee Friell and Marcia Valbracht
Test America – Cedar Falls	Water	Mike McGee	Tom Tjaden
Test America – Denver	Water	Bob Hanisch	Brett Vandelinder

Laboratory Participant	Analyses	Point of Contact	Exercise Evaluator
Test America – St. Louis	Soil	Elaine Wild	Marti Ward
FDA, Kansas City District	Food	Neal Adams and Ann Adams	Rachel Dietzel
U.S. EPA NEIC Laboratory	Water	Dan Hurlbut	Eric Nottingham
U.S. EPA Region 7 Science and Technology Center	Water and Soil	Michael F. Davis and Daksha P. Dalal	Dale Bates: Lab Don Lininger: IMT
U.S. EPA Region 8 Laboratory	Water	Art Wake	Mark Burkhardt
Utah Department of Health, Unified State Laboratory: Public Health	Water	Jack Oman	David Fredrickson
WaterOne Laboratory	Water	Dale Tapp	Brent Fulton
Wyoming Dept of Agriculture Analytical Services Laboratory	Water	Michael Leath	Deborah Sanchez

2.1 Chemistry Environmental and Food FSE Summary

Prior to the exercise, the following pre-exercise trainings and briefings were held for the participants of the chemical environmental and food scenario:

- Laboratory Pre-exercise Briefing to discuss exercise goals, logistics, safety, and address any issues or questions
- Evaluator Training was provided to the evaluators via webcast
- WebEDR Training was provided to the laboratories via webcast
- IMT Briefing

Evaluators and laboratory participants were provided with exercise documentation including forms that were used to capture feedback and corrective changes. The exercise was facilitated from a control center established and hosted by EPA Region 7 in Kansas City, Missouri.

Chemical Environmental and Food Scenario
Days 1 (Friday) – 3 (Sunday); limited exercise play

Background Scenario

On Friday (Day 1) during the morning hours, patients trickled into the emergency room with complaints of nausea, vomiting, abdominal pain, and profuse diarrhea. The emergency room workers noticed that some patients' breaths smelled of garlic. Throughout the day the number of patients reporting to local emergency rooms continued to increase. Most of the patients were from the northwest area of Kansas City, Missouri. The hospital personnel were concerned that the cases may be related and contacted the state health department. The hospitals collected urine samples from several patients and delivered the samples to the Missouri Department of Health. Initial interviews with the patients indicated that they began experiencing symptoms within 30 to 60 minutes after drinking tap water or showering. The KCMO Health Department notifies the KCMO Water Services Department that the illness may be linked to consuming contaminated drinking water. Throughout the day, the number of patients reporting to local

emergency rooms increased and the hospitals were overwhelmed. Some patients experienced more severe symptoms, including circulatory failure, renal failure, and coma.

Limited Exercise Play

During the first 3 days of the exercise, most activities were notional with limited exercise play. The timeline for the notional events was designed in order that the laboratory portion of the exercise could be completed in a four day period (Monday - Thursday). The first communication with the participant laboratories occurred Monday morning (Day 4).

Friday afternoon (Day 1), KCMO Water Services Department dispatched a crew to inspect the water storage tank near the neighborhood where most of the illnesses were reported. Upon arrival at the underground storage tank, they noticed that the perimeter fence for the storage tank had been cut. Upon closer examination, they saw that the water storage tank's hatch had been damaged. The KCMO Water Services Department notified the KCMO Health Department of the tampering and the KCMO Health Department notified the Federal Bureau of Investigation (FBI).

Friday evening (Day 1), shortly after KCMO Water Services Department noticed the damage hatch, hazardous materials (HazMat) teams arrived at the underground storage tank to collect samples. The storage tank was shut off from the distribution system. Field-screening was conducted for a variety of potential contaminants. By Friday evening, the drinking water utility had begun flushing the local water mains. In addition, the utility issued a "do not use" order to residents impacted by the contamination and instructed them to run their taps to flush out contamination.

On Saturday (Day 2), drinking water samples were collected from the storage tank and surrounding distribution system and soil samples were collected around the underground drinking water storage tank where there was a security breach. Additional drinking water samples were collected on Sunday (Day 3). Initial laboratory analyses identify the contaminant as arsenic.

On Saturday (Day 2), a local beverage manufacturer contacted the KCMO Water Services Department to determine the likelihood that water they used to produce their root beer was contaminated with arsenic. KCMO Water Services Department contacted KCMO Health Department to inform them of this development.

Days 4 (Monday) – 8 (Friday): Exercise Play

Monday – Day 4

- Root beer samples were collected from the local beverage manufacturer [Note: Sample collection is notional].
- The FDA, Kansas City laboratory received the root beer samples and began sample analyses.
- The Environmental Unit (EU) received notional data from samples collected and analyzed over the weekend.
- The participating laboratories received environmental samples collected on Saturday and began analysis for arsenic. [Note: Sample collection is notional].

Tuesday – Day 5

- The participating laboratories received environmental samples collected on Sunday and began analysis for arsenic. [Note: Sample collection is notional].

Wednesday – Friday: Days 6 - 8

- Environmental analysis of samples continued.
- Debrief calls were held with the exercise participants as each laboratory completed their analyses.

Section 3.0 Summary of Comments and Recommendations

The following sections present a summary of the comments received from the exercise evaluators and participants. These comments were compiled from the debriefing meetings, Hot Wash conference calls, exercise evaluation forms, and feedback forms. Action items to address these comments are presented, as appropriate. A list of all comments collected from the laboratory participants and evaluators on the exercise feedback forms is compiled in Appendix B and comments from the EEGs are compiled in Appendix C.

3.1 Roles and Responsibilities

Overall, the participants were able to successfully fulfill their roles during the FSE. The EPA Region 7 Training and Logistics Center served as the location of the IMT that coordinated the activities related to analysis of environmental samples for arsenic. EPA Region 8 assisted Region 7 by coordinating support from laboratories located within Region 8. Laboratory coordination support from Region 8 greatly reduced the workload of the Region 7 Analytical Services Requestor (ASR). In addition to support from Region 8, the Environmental Unit (EU) leader requested and received from the Region 7 laboratory an additional person to assist with laboratory coordination.

The laboratories reported that there was confusion regarding who was serving as the ASR, Incident Commander (IC), and Public Information Officer (PIO). One of the laboratories commented that it would be helpful to have one POC for all media inquiries rather than a POC for each agency. During a real event involving multiple agencies, a unified command would be established with a single PIO serving all agencies.

FDA coordinated the efforts of the laboratory that analyzed food samples for arsenic. The KCMO Health Department, KCMO Water Services Department, and the FBI provided exercise injects.

Action Items for Consideration

- A coordinated team of ASRs may be needed during a larger emergency response in order to quickly procure laboratory support and provide laboratories with the required information.
- Contact information for the ASR, PIO, and other relevant IMT staff members that laboratories may need to interact with during an emergency response should be provided during the initial briefing and followed up in an email.

3.2 Communications and Logistics

Overall, communications between the participant laboratories and the Region 7 ASR/IMT were effective, and all necessary information was received. The Region 8 IMT sent email follow-ups to phone conversations with Region 8 laboratories which helped facilitate communications. Issues regarding communication include:

- Some of the laboratories indicated that it would have been helpful to be provided more information during the initial phone call received from the ASR/IMT.
- Notification for the initial conference call was sent to the laboratories via email 20 minutes prior to the call. As a result, some laboratories did not receive the notification in time and missed the initial briefing. However, follow-up calls were made to these laboratories.
- Several laboratories commented that daily briefings in addition to the initial briefing would have been helpful to keep all participants informed during the exercise.
- In several cases, the ASR could not reach the laboratory POC and left a message on voicemail, resulting in information not reaching the laboratory POC until much later.

In general, the laboratories followed the chain of command outlined in the WLA-RP. In general, laboratories did not provide information to outside callers (media, government officials, etc.) and referred the caller to the appropriate contact in the IMT. The Region 7 IMT notified the exercise participants via email that some laboratories were receiving calls from someone in the media posing as a laboratory requesting assistance. A few issues of note regarding handling of information from outside callers include:

- One laboratory did provide information to a controller playing as someone from the governor's office. The laboratory commented that they would normally provide information to someone confirmed to be from their governor's office, but in this case it may have been more appropriate to refer the caller to the IMT.
- One laboratory received a phone call from someone claiming to be from another laboratory that needed assistance with analysis of their samples. The laboratory receiving the call was not sure who to contact regarding this request. They ultimately contacted three different parties and received three different responses regarding how to handle the situation.
- Not all laboratories notified the IMT that they received requests for information about the incident from outside callers.

Laboratories used a combination of the forms provided in the WLA-RP and their own forms and logbooks to facilitate and track communications. The WLA-RP forms are discussed in detail in Section 3.2.1, below. The laboratories also used emails, internal briefings, blogs, etc. to keep their staff informed of exercise related information and activities. Several laboratories set up command centers during the exercise and felt that this facilitated communication and recommended this approach.

Action Items for Consideration

- The ASR/IMT should hold initial and daily briefings via conference call with all laboratories providing support to an incident to facilitate information exchange (e.g., preliminary screening information, sample preparation and analytical issues, etc.) between laboratories.
- The ASR/IMT should call laboratories rather than send emails for short turnaround requests.
- The ASR/IMT and laboratories should request confirmation of receipt of all emails sent to the participating laboratories.
- The laboratories should provide a cell phone or other alternate number(s) for each POC to the ASR/IMT.
- Laboratory contacts should update their voicemails to inform callers when they will be out and provide alternate contacts for emergencies.
- The ASR/IMT should avoid leaving messages for the laboratories on voicemail and attempt to contact the POC using an alternate number or leaving a message with an alternate contact at the laboratory.
- During an emergency response, laboratories should establish a command center with a dedicated phone line.
- Multiple people should be available in the command center to answer calls and take notes to ensure critical information is not missed.
- Verbal instructions and understandings between the ASR/IMT and laboratories should be followed up with written instructions via email.

3.2.1 Use of WLA-RP Forms

The WLA-RP provides several forms to assist in communication and the tracking of information during a contamination incident. A few laboratories used the Help Sheet for Requesting Analytical Support During Water Emergency Response (WLA-RP Appendix C) to facilitate the exchange of information. However, this form was not used by the Region 7 IMT. All necessary information was transmitted, but the form would have made communication more efficient. Several laboratories used their own forms, logbooks, and Laboratory Information Management Systems (LIMS) to record and track information.

Action Items for Consideration

- Encourage the ASR/IMT and laboratories to complete the electronic version of the forms in the WLA-RP to facilitate and supplement phone conversations between laboratories. Forms should be emailed to reduce phone traffic and increase the accuracy and completeness of communications.
- Make the WLA-RP available to all laboratory staff and encourage staff members to review the plan and the WLA-RP online training module http://water.epa.gov/infrastructure/watersecurity/wla/training.cfm.

3.3 Sample Receipt and Tracking

Sample collection and shipping were not directly tested as part of the exercise. The samples were prepared by the QATS contractor and sent to the participant laboratories prior to the start of the exercise. The laboratories were asked to hold the samples until they were instructed during the exercise to "receive" the samples. Overall, the laboratories were able to successfully receive and track the samples. Several evaluators noted that the laboratories had strong procedures in place for sample receipt and tracking that included detailed standard operating procedures (SOPs) and sample receipt checklists. Some specific issues with sample shipment and receipt included:

- No signature lines were included on the chain-of-custody (COC) form for relinquishing custody of the samples.
- The COC form did not include information on sample preservation, container type, analyses required, etc.
- Not all information required for reporting results in WebEDR was included on the COC form.

Action Items for Consideration

- Exercise planners should have provided field documentation that captures all required sample information, including information needed for reporting data using WebEDR (see WLA-RP Appendix G).
- When laboratories have a question about information on the COC form or if information is missing, the ASR/IMT should be contacted for clarification.

3.4 Criminal Investigation Samples

There were no specific instructions provided to the laboratories participating in the exercise regarding whether samples needed to be handled to maintain evidentiary integrity. At least one laboratory photographed the samples and created their own COC to track samples in the laboratory. Normally, the FBI would be involved in instances where criminal investigation samples are involved. FBI requirements may be difficult for some laboratories to meet.

Action Items for Consideration

- Guidance should be provided to the laboratories prior to sample receipt regarding handling the samples to maintain evidentiary integrity.
- Laboratories should review their procedures for handling criminal investigation samples against the guidelines provided in the WLA-RP.
- Laboratories should also consider taking the *Handling of Criminal Investigation Samples: Maintaining Chain of Custody* courses from the WLA Training Center: http://water.epa.gov/infrastructure/watersecurity/wla/training.cfm

3.5 Analysis

Overall, laboratory performance of the analytical portion of the exercise was successful and the laboratories are commended for their efforts. The laboratories were able to successfully analyze samples

for arsenic. The exercise was not conducted to test the analytical capabilities of the laboratories, but analyzing samples as part of the exercise allowed participants to identify areas for improving coordination of sample analyses. Since the number of samples analyzed by each laboratory was small (10 samples per laboratory), the surge capacity of the laboratories was not tested. Field screening data was provided to the laboratories receiving samples. Issues that did arise during sample analyses included:

- One laboratory was delayed in completion of the analyses due to a lack of argon gas.
- One laboratory experienced a power outage that disabled the cooling system for the inductively coupled plasma mass spectrometer (ICP/MS).

Action Items for Consideration

- Laboratories should include all reagents, supplies, and consumables on their inventory checklists and use the checklist to confirm that they have everything required to support the emergency response prior to receiving the samples.
- If possible, laboratories should include alarms on their equipment to ensure prompt notification of equipment failures and/or have backup equipment options.

3.6 Quality Assurance

The laboratories followed the quality assurance/quality control (QA/QC) requirements specified in the methods. No additional QA/QC instructions were provided. Several laboratories commented that there was insufficient sample volume to perform matrix spike/matrix spike duplicates or reanalyze the samples if there were any problems.

Action Items for Consideration

- Ensure that sufficient sample volume is provided for QC samples and to reanalyze samples, if needed.

3.7 Data Reporting – WebEDR

The laboratories were provided instructions and Web-based training on the use of WebEDR for reporting environmental data. Most laboratories were able to successfully create a Type 1t EDD and upload their data into WebEDR. WebEDR contractor support was provided to the laboratories during the exercise, and several laboratories reported that this support was essential to them being able to successfully upload their data. However, several laboratories reported difficulty uploading their EDDs into WebEDR. The Region 7 IMT then uploaded the electronically reviewed data into Scribe to develop geographic information system (GIS) maps. The one laboratory performing food analyses submitted their data using the Electronic Laboratory Exchange Network (eLEXNET), FERN's electronic data reporting system. Specific data reporting issues identified by the participating laboratories and IMT include the following:

- Several laboratories reported that they felt that data reporting instructions were given "on the fly" during the exercise, but this is expected during an emergency response.
- Laboratories that were not able to attend the WebEDR training prior to the exercise reported problems with data submission.
- Manual data entry and proper data formatting were very time consuming and delayed reporting data through WebEDR by a significant amount of time (4 to 16 hours) in some cases.
- Overall, many of the laboratories found that the required EDD was not user-friendly.
- Several laboratories requested that generic fields such as the Project ID be prepopulated in the EDD to save time.

Action Items for Consideration

- Conduct a data reporting exercise to provide laboratories with an additional opportunity to practice generating and uploading EDDs into WebEDR and identify further improvements to the process.
- Conduct additional training on the use of WebEDR for reporting environmental data.

- Prepopulate data fields such as Project ID in the EDD and provide the prepopulated template to the laboratories.
- Provide laboratories with the staged electronic data deliverable (SEDD) valid values lists or a link to the list.
- Program WebEDR to accept date and time in multiple formats.
- Develop relevant examples of completed EDDs for different sample types.
- Laboratories should be sure to involve their information technology (IT) staff in support of data reporting.
- Any updates to the required EDD formats and WebEDR should be conveyed to the ERLN/WLA laboratories on a regular basis.
- Develop a plan for providing WebEDR support to incidents during off hours.

Section 4.0 Conclusions

The EPA Regions 7 and 8 FSE provided the opportunity to exercise and evaluate WLA-RP and ERLN, and FERN emergency response procedures. This exercise scenario emphasized the complexity of integration, coordination, and communication across multiple agencies and ICLN networks at the state, regional, and federal levels. The exercise was not designed to address all possible permutations and roles that might be involved in such a situation; for example, true field sampling and field operations were not included and were considered outside the scope of the exercise design. The FSE identified improvements to existing and draft plans, as well as coordination and communication across regions and agencies. Moreover, the exercise provided the opportunity for the participating laboratories to practice and work together across regional settings. In addition to identifying improvements to plans and procedures, participants leveraged the exercise to practice and enhance their own internal operating procedures. Overall, the exercise was considered a great success due to the performance of the system and laboratories. Thirty-two laboratories analyzed more than 1200 samples within the week, and reported the data in the required electronic data deliverables. The vast majority of the data were received within 48 hours of sample receipt.

4.1 Objectives

The following summary provides the findings for each of the objectives identified as goals of the exercise.

Objective 1: Test the procedures of the WLA-RP.

The Regions 7 and 8 FSE provided an opportunity to practice the procedures of the WLA-RP through a scenario that required analyses of samples at multiple laboratories from multiple EPA regions. The exercise participants were able to successfully deploy the WLA-RP procedures within the context of the scenarios. Laboratories received and analyzed samples and reported data according to the procedures in the WLA-RP. Communication within each laboratory and between the laboratories and the IMT/ASR was also tested. Routine laboratory procedures meshed very well with the plan's operations and procedures.

Objective 2: Practice ERLN/WLA environmental laboratory procedures integration, including the use of the IMT according to the EPA *Incident Management Handbook*.

A full IMT was mobilized for the Regions 7 and 8 FSE, which provided an opportunity to practice coordination of laboratory support as well as activities related to laboratory data evaluation, such as results mapping. Incident Command (IC) was established at the EPA Region 7 Training and Logistics Center with support from EPA Region 8. The IMT/ASR was able to successfully coordinate laboratory analyses including identifying capable laboratories, communicating sample analyses, QA/QC and data reporting requirements, and coordinating data reporting. Overall, WLA-RP procedures integrated well with the use of the IMT/ASR. However, the laboratories did comment on the need for additional communication from the IMT/ASR and the importance of using the tools provided in the WLA-RP including the Help Sheet for Requesting Analytical Support During an Emergency Response (WLA-RP Appendix C) to facilitate and track communications.

It should be noted that the desire for more communication was an overarching comment from the laboratories for every single laboratory scenario. This exercise is designed to have some chaos at the beginning, since the participants are given almost no up-front information (much like a real response event). During the early phases of laboratory emergency response, it is not possible to have too much communication.

Objective 3: Practice coordination among three ICLN networks (ERLN/WLA, LRN, and FERN) to respond to a combined public health and environmental emergency

The EPA Regions 7 and 8 FSE provided an opportunity to practice and improve coordination between the ERLN, LRN, and FERN. Several laboratories that are part of the ERLN, LRN, and FERN were able to participate in multiple portions of the exercise. This opportunity allowed the laboratories to test their capability to utilize common staff and resources to support the analyses of environmental, food, and clinical samples for chemical and biological contamination incidents that occurred at the same time. Specific instructions were not provided to the laboratories regarding the prioritization of analyses of environmental, clinical, and food samples. The laboratories that participated in multiple scenarios did not report any issues with completing the analysis of multiple types of samples at the same time. However, the environmental and food portions of the exercise did not test laboratory surge capacity. There may have been more issues with competing priorities and resource overlap, if the number of environmental and food samples had been greater. At least one laboratory commented that analyzing greater numbers of samples could require help from other laboratory sections, cross-training of laboratory staff, and better communication in order to achieve the turnaround times needed to successfully provide the analytical data needed to support emergency response. WLA-RP training and outreach needs to place greater emphasis on sharing resources and information between personnel supporting different networks at the same laboratory.

The ICLN Portal was used to post Situation Reports (SitReps) for the laboratory networks that are part of the ICLN including the ERLN, LRN, and FERN. There was also sharing of preliminary and final results between the ICs for the environmental, clinical, and food portions of the exercise. Otherwise, there was limited communication and coordination between the Region 7 IMT and the ICs for the clinical and food portions of the exercise. This may be in part due to the artificiality of the exercise because no unified command was established. Coordination between ICLN member networks during an event will be critical to ensuring that laboratory resources are being utilized effectively and information necessary to support decision making is available to all agencies and organizations involved in the response. Additional guidance on sharing response information (e.g., sample location and modeling data) and analytical results between laboratory networks and other organizations during an emergency response is needed.

Objective 4: Provide the EPA regions with an opportunity to practice multi-regional coordination during a large-scale contamination incident.

The exercise provided an opportunity to practice coordination between multiple EPA regions. Laboratory support was primarily provided by laboratories from EPA Regions 7 and 8. EPA Region 7 took the lead and served as the laboratory coordinator for the environmental portion of the exercise. EPA Region 8 provided backup support and assisted Region 7 by coordinating support from laboratories in Region 8. Laboratory coordination support from Region 8 greatly reduced the workload of the Region 7 ASR.

Objective 5: Identify additional systems, operations, and mechanisms for the continued improvement of sample transport, data management, data transfer, and analytical support in response to a major contamination incident.

Opportunities for enhancement of data reporting, transfer, and compilation were explored as a key objective of the exercise. Many laboratories reported difficulties with generating the required EDD for data reporting using WebEDR. Many laboratories could not use their LIMS system to generate the required data deliverable and manual data entry and formatting was time consuming, which resulted in data reporting delays. Additional training on the use of WebEDR and exercises that specifically test data reporting and compilation could further reduce potential issues with data reporting during real emergencies. Overall, the laboratories were able to successfully analyze the exercise samples; however, the laboratories analyzed a very limited number of samples. During a real incident, the number of samples would likely be much higher, potentially overwhelming some laboratories.

4.2 Next Steps

The WLA-RP is currently being updated to include all environmental matrices. The lessons learned and suggestions for improvement will be evaluated for inclusion in future versions of this all matrices response plan titled the Environmental Response Laboratory Network – Response Plan (ERLN-RP). Individual laboratories will be encouraged to implement any changes to their own plans and procedures that were identified during the exercise. Suggestions for improvements and enhancements to the exercise will be evaluated for implementation to the program, especially during the upcoming laboratory full scale exercises.

Suggestions and comments received from exercise participants and evaluators are located in Appendices B and C of this report.

Appendix A List of Acronyms

AAR	After-Action Report
ASR	Analytical services requester
CDC	Centers for Disease Control and Prevention
COC	Chain of custody
CST	Civil Support Team
EDD	Electronic data deliverable
EEG	Exercise Evaluation Guide
eLEXNET	Electronic Laboratory Exchange Network
EU	Environmental Unit
EPA	U.S. Environmental Protection Agency
ERLN	Environmental Response Laboratory Network
ERLN-RP	Environmental Response Laboratory Network – Response Plan
FBI	Federal Bureau of Investigation
FDA	Food and Drug Administration
FERN	Food Emergency Response Network
FSE	Full-scale exercise
GIS	Geographic Information System
HazMat	Hazardous materials
HSEEP	Homeland Security Exercise and Evaluation Program
IC	Incident Commander
ICS	Incident Command System
ICP/MS	Inductively coupled plasma mass spectrometer
ICLN	Integrated Consortium of Laboratory Networks
ID	Identifier
IMT	Incident Management Team
IT	Information technology
KCMO	Kansas City, Missouri
LIMS	Laboratory information management system
LRN	Laboratory Response Network
MSEL	Master Scenario Events List
NEIC	National Enforcement Investigations Center
OEM	Office of Emergency Management
PIO	Public information officer
POC	Point of contact
QATS	Quality Assurance Technical Support
QA/QC	Quality assurance/quality control
SEDD	Staged Electronic Data Deliverable
SitRep	Situation Report
SOP	Standard operating procedure
USDA	United States Department of Agriculture
WebEDR	Web-Based Electronic Data Review
WLA	Water Laboratory Alliance
WLA-RP	Water Laboratory Alliance Response Plan

Appendix B Exercise Feedback

Feedback on the exercise was collected from the participants and evaluators to identify opportunities for improvement to the exercise and its implementation. Overall, the exercise was rated highly, with most participants and evaluators rating that they strongly agreed that the goals of the exercise were met as outlined in the feedback form. Additionally, the participants and evaluators provided excellent recommendations for changes to improve the exercise. The following summarizes the findings collected from the feedback forms, as well as the comments of the participants: Table B-1 provides a summary of the ratings provided by the participants and evaluators, and Table B-2 provides a summary of the responses from the feedback form questions.

Table B-1. EPA Region 7 and Region 8 Full Scale Exercise Feedback Form

EXERCISE EVALUATION	(Strongly Disagree)---------- (Strongly Agree)					
PARTICIPANT ROLES	**1**	**2**	**3**	**4**	**5**	**N/A**
1. There were sufficient introductory briefings and participant handouts to prepare for the exercise						
Evaluator	0	0	1	5	1	0
Participant	0	0	0	7	3	0
Total	0	0	1	12	4	0
2. The exercise controllers were knowledgeable, presented the materials effectively, and were helpful						
Evaluator	0	0	1	4	2	0
Participant	0	0	0	6	4	0
Total	0	0	1	10	6	0
3. The exercise was well-coordinated and organized						
Evaluator	0	0	1	4	2	1
Participant	0	0	3	5	2	0
Total	0	0	4	9	4	**1**
4. Within the constraints of not releasing information about the exercise scenario, all of my questions were answered						
Evaluator	0	0	0	4	2	1
Participant	0	2	3	3	2	0
Total	0	2	3	7	4	1
5. The exercise allowed an opportunity to practice and implement our process and plans						
Evaluator	0	0	0	3	4	0
Participant	0	0	0	3	7	0
Total	0	0	0	6	11	0
6. For lab leadership, the exercise allowed an opportunity to practice coordination and communication with other laboratories.						
Evaluator	0	0	0	2	5	0
Participant	1	0	0	0	6	3

EXERCISE EVALUATION	(Strongly Disagree)---------- (Strongly Agree)					
PARTICIPANT ROLES	**1**	**2**	**3**	**4**	**5**	**N/A**
Total	1	0	0	2	11	3
7. The exercise provided the opportunity to consider potential issues and problems within the context of the scenario						
Evaluator	0	0	0	5	5	0
Participant	0	0	1	4	5	0
Total	0	0	1	9	10	0
8. Through the practice of our plans and procedures, I am more knowledgeable and confident in our operations.						
Evaluator	0	0	1	3	3	0
Participant	0	0	1	5	4	0
Total	0	0	2	8	7	0
9. I was given the opportunity to voice my observations either through documentation or through the "Hot Wash" debriefing.						
Evaluator	0	0	0	4	2	1
Participant	0	0	0	0	10	0
Total	0	0	0	4	12	1
10. The exercise allowed an opportunity to identify strengths and weaknesses of operations in response to the exercise scenario						
Evaluator	0	0	0	3	4	0
Participant	0	0	1	3	6	0
Total	0	0	1	6	10	0
11. Overall, I was satisfied with the functional exercise						
Evaluator	0	0	0	3	4	0
Participant	0	0	0	5	5	0
Total	0	0	0	8	9	0

Table B-2. Response to Questions from the Participant Feedback Form

Role	Comment
Question 1. What specifically did you find most valuable about the exercise?	
Participant	Getting to learn the WebEDR data upload
Participant	Unanticipated challenges and questions that arose internally. Actually running the tests - not hard, but gave a sense of realism. It was good to have staff have to adapt normal data reporting procedures to the WebEDR format.
Participant	Communication among our own laboratory as well as other laboratories
Participant	The scenarios were well planned and thought out. The opportunity to test our protocols and to learn from others how they do things.

Role	Comment
Participant	Participating was very valuable to me. I have not worked in my position long enough to have participated in any previous exercises so getting to experience how our lab functions in situations like the one that was presented to us was very beneficial to me.
Participant	The experience
Participant	Actually running entirely from start to finish through an event.
Participant	The opportunity to expose staff to an emergency situation.
Participant	The exercise gave us the opportunity to evaluate our in-house procedures for handling an emergency response incident.
Participant	The opportunity to work with other labs in a combined effort.
Participant	Communication and contacts with others to define roles as well as areas of expertise
Participant	Having the opportunity to provide feedback to the exercise controllers during the FSE laboratory debrief teleconference, as we discussed "lessons learned" and areas for improvement within our own laboratory.
Participant	The pre-exercise trainings. Especially the course in going over how to use the WebEDR.
Participant	A quick sample process upon receiving by a sample custodian. A quick sample analysis and data transfer to our electronic format, working together is important in the exercise.
Participant	Able to see how we would set up incident command and deal with issues associated with an event.
Participant	This allowed our Lab chance to practice an emergency response situation.
Participant	Having to gear up to do rush samples. Testing our communication plan. Coordinating three different scenarios.
Participant	Setting up the command center. We did have a room designated for such a purpose, but it wasn't used until this exercise. We found out what modifications needed to be done, and they were made. The room will be ready for the next exercise, or real incident, should it occur.
Participant	Setting up the command center and using it. We realized which numbers to give out and several issues were addressed for phone calls, computer use, email accounts and back-ups. This was also a great exercise for using our new LIMS.
Participant	The testing of our lab procedures and flexibility as analytical needs were clarified.
Participant	Useful to see the internal teamwork with the time constraints. Also interesting when instrument issues arose and the analysts had to resolve them quickly (change of instruments; deduced facilities problem affecting instrumentation.
Participant	Having to gear up to do rush samples. Testing our communication plan. Coordinating three different scenarios.
Participant	Close to "real life" scenario allowed for a critical review of our capabilities & revealed areas for (internal) improvement related to interactions with the direction agencies.
Participant	Opportunity to learn more about ERLN and introduction to the WLA. Further opportunity to get familiar with WebEDR.
Participant	Being able to test our process and know that we have a good system.
Participant	Anytime our lab can practice our ability to respond to this type of need should it arise is of value to us. Though the data upload to WebEDR was a struggle, the systematic and uniform delivery of data is a huge step forward for this type of exercise (over 2008's exercise). By working through most the difficulties this time and implementing some of the suggestions it will become even better in the future.

Role	Comment
Evaluator	An opportunity to experience an environmental - chemical incident and exercising applicable laboratory functions.
Evaluator	The opportunity to evaluate laboratory processes for handling an emergency situation.
Evaluator	The opportunity for the Lab to communicate with partners and practice with RM.
Evaluator	Some thing our lab could improve on.
Evaluator	Most valuable when there is emergency situation like this how to coordinate the sample analysis, data reporting
Evaluator	Insight into local and state interaction and communication; better understanding of challenges involved with coordination of analytical support
Evaluator	Was able to identify strengths and weaknesses in our lab. Definitely opened conversation about areas we need to improve.
Evaluator	Real samples w/real sample issues
Evaluator	As this is our first exercise it was very informative concerning the water laboratory alliance - response plan.
Evaluator	1) The multiple agency response scenario - tested surge capacity, regional cooperation and communication plans/skills 2) "Wild Cards" - calls from the press and unsolicited specimen testing requests.
Evaluator	Learned that most participants are not very familiar with the WLA-RP and that the WLA-RP is too complex and detailed to be practical in a real event.
Evaluator	Learning what is good about our processes and what can be worked on for improvement.
Evaluator	Receiving calls and contacts from potential media organizations and appropriately directing those contacts through the communication chain.
Evaluator	This exercise was the laboratory's first opportunity to practice responding to a realistic, live emergency situation.
Question 2. Least valuable?	
Participant	Overall, I think each part of the exercise was valuable. It tested various areas of our laboratory. It helped us to determine areas we need to improve on.
Participant	There didn't seem to be much coordination amongst the different Federal Agencies in the scenario.
Participant	Nothing
Participant	It was good
Participant	Nothing - we actually need to do this more often!
Participant	The conference call scheduled for 10/17/2011 at 2:30 PM MPT. Due to late notification, we missed the meeting entirely, so the conference call had no value for us.
Participant	There was not anything that was not valuable in some way.
Participant	Issues/problems encountered during the analysis (i.e. insufficient sample volume for drinking water QC - MS/MSD and lack of R7 equipment for turbidity testing.
Participant	N/A
Participant	The numerous contacts that we needed to keep track of related to the various scenarios.
Participant	EPA data entry

Role	Comment
Participant	Having to learn WebEDR when we may never have to use it again.
Participant	Nothing. The entire exercise was a valuable learning experience
Participant	The sample receiving/custody portion since we get plenty of real experience with our litigation support focus.
Participant	Having to learn WebEDR when we may never have to use it again.
Participant	Not sure we had any.
Participant	All aspects of the exercise were valuable.
Participant	None known.
Participant	Only one person (POC) gained the experience of communication and logistics outside of our lab.
Evaluator	All activities associated were necessary to complete the exercise
Evaluator	The "Hot Wash." The individual meeting with our lab was beneficial, but as a lab, the Hot Wash didn't really offer anything that an e-mailed summary of the event. For those running the event it was useful, not so much for the lab.
Evaluator	N/A
Evaluator	Lack of visibility of actions relating to scenarios after initial setup and analytical support coordination How the scenarios quickly elevated to the level of EPA control/oversight was somewhat unrealistic, but recognize that wasn't the intent
Evaluator	Having to write this eval.
Evaluator	Complex reporting systems and lack of practice using it
Evaluator	Pre-shipping specimens prior to the exercise. Really test the delivery systems by shipping within the time frame of the exercise.
Evaluator	WebEDR training prior to the exercise
Evaluator	The actual sample analysis did not provide any additional value to the lab. As a commercial production lab, the sample analysis did not present any challenges or situations that required any non-standard procedures.
Question 3a. How many similar exercises have you participated in previously? (Total number of exercises?)	
Participant	0
Participant	1
Participant	1
Participant	0
Participant	0
Participant	2
Participant	1

Role	Comment
Participant	1
Participant	0
Participant	2
Participant	3
Participant	0
Participant	3
Participant	1
Participant	2
Participant	None
Participant	0
Participant	1
Participant	1
Participant	0
Participant	0
Participant	2
Participant	2
Participant	0
Participant	1
evaluator	1
evaluator	0 environmental, approx. 5 clinical chemistry
evaluator	0
evaluator	10
evaluator	0
evaluator	none
evaluator	None
evaluator	2
evaluator	3-Feb
evaluator	2

Role	Comment
evaluator	0
evaluator	2
evaluator	1
evaluator	7
evaluator	0
Question 3b. Of the total number of exercises, how many used live samples?	
Participant	1
Participant	1
Participant	0
Participant	2
Participant	1
Participant	1
Participant	0
Participant	1
Participant	2
Participant	2
Participant	1
Participant	2
Participant	N/A
Participant	1
Participant	1
Participant	none
Participant	1
Evaluator	0
Evaluator	0/5
Evaluator	3
Evaluator	0
Evaluator	N/A

Role	Comment
Evaluator	1
Evaluator	0 NA
Evaluator	1
Evaluator	0
Evaluator	0
Evaluator	1
Evaluator	7
Participant	2
Evaluator	N/A
Question 3c. Of the total number of exercises, how many included multiple agencies or organizations?	
Participant	1
Participant	1
Participant	0
Participant	2
Participant	1
Participant	1
Participant	0
Participant	2
Participant	2
Participant	2
Participant	1
Participant	2
Participant	N/A
Participant	1
Participant	1
Participant	1
Participant	1
Evaluator	1

Role	Comment
Evaluator	0/5
Evaluator	3
Evaluator	0
Evaluator	N/A
Evaluator	2
Evaluator	NA
Evaluator	2
Evaluator	2
Evaluator	2
Evaluator	2
Evaluator	0
Evaluator	7
Participant	2
Evaluator	N/A
Question 4.What other agencies would have been useful to have involved in this full-scale exercise.	
Participant	There were just the right amount/mix of agencies in the exercise - in fact more might have been confusing
Participant	None, I can think of now.
Participant	I thought the number of agencies was sufficient to test the system.
Participant	EPI, KOHE
Participant	Media (or more media-like correspondence)
Participant	No suggestions.
Participant	FBI - enforcement needs
Participant	Additional EPA Regional laboratories
Participant	N/A
Participant	FBI, Department of Natural Resources and Department of Health, County Health Departments
Participant	All of the agencies that we are associated with participated in this exercise
Participant	None that I can think of at this time.

Role	Comment
Participant	None that I can think of at this time.
Participant	Police haz mat?
Participant	FBI, Homeland Security, possibly, but they may have made it too crazy.
Participant	All of the agencies that we are associated with participated in this exercise
Participant	I believe the current agencies were involved. However (and I don't know all that were involved), involvement by local agencies should have involvement and probably were.
Participant	Local law enforcement or other government officials would add to the complexity - closer to real life. Though this would have involved a greater number of employees outside of the Laboratory & may make it very challenging to effectively engage all parties.
Participant	None known.
Participant	?? FBI, CID, DEA, HSD ???
Evaluator	None identified.
Evaluator	None would have affected the lab side of things
Evaluator	For the scope of this exercise I think the participants were just right
Evaluator	Can't think of any; mix and involvement seemed appropriate
Evaluator	Don't know
Evaluator	Homeland Security (?) - Public Safety
Evaluator	Law enforcement - more of a direct terrorist - linked
Evaluator	Don't know
Evaluator	Since this exercise simulated a potential act of terrorists, it may have been useful for law enforcement agencies to participate.
Question 5a. What would you change about the scenarios?	
Participant	Add more calls and emailed questions from the press and state government. - This would make the exercise more realistic.
Participant	Nothing
Participant	Upload data as it comes out and passes instead of all at once
Participant	The scenario was well-planned and executed. No suggestions for changes.
Participant	This was fine.
Participant	Make it more about the analytes. And don't say which ones.
Participant	Coordinate incident command into a joint command with same incident commander and public information officer. Also link the scenarios.
Participant	Acting as a surge capacity lab was good experience but if the event had occurred in our own state it would have been more valuable to us.

Role	Comment
Participant	Having more “planned” obstacles.
Participant	More interference during the day and follow-up on the results. It would be interesting to see how things would go without the 2 week prep time.
Participant	Acting as a surge capacity lab was good experience but if the event had occurred in our own state it would have been more valuable to us.
Participant	Scenarios – Probably nothing this time, there is always an opportunity to change something next time. I do think the WebEDR template and upload process could have been worked out before the exercise and could be practiced between exercises.
Participant	It might be informative to the individual labs (or other groups) to provide more "distractions" in the future to challenge each Laboratory's response plan as a way to assist in improving them, e.g., media reports, inaccurate reports due to rumors/panic, etc.
Participant	Data reporting format.
Participant	Test the staff on inappropriate external communication scenarios, and make the analysis step more complicated to stress the lab as a whole.
Evaluator	Additional MSL conference calls and communication.
Evaluator	Use a more difficult (real world) matrix. Running the clean sand didn't present any difficulties; real world "dirt" would be a more difficult (and likely) matrix.
Evaluator	Was not included in all scenarios so cannot comment
Evaluator	Scenario was good
Evaluator	Need more training on data transfer (chemical contaminant) Hot line for the WebEDR
Evaluator	Possibly outline or include process on how the response effort elevates to the federal level as a teaching mechanism
Evaluator	Nothing
Evaluator	Good choice
Evaluator	Increase the number of calls from the public, news, etc.
Evaluator	Don't know
Evaluator	I would not make any changes to the chemical and environmental scenario.
Question 5b. Is there a different scenario you believe would be useful?	
Participant	No - this was good, but a little too easy. I've worked with Sheriff's Dept. investigations where they consistently pestered me before we could get finished. More interference!
Participant	Perhaps a contaminant in a water supply which provides water to rural water system lines.
Participant	Maybe have a scenario that crosses a state line - multiple jurisdictions
Participant	No
Participant	Any method to practice is just as good as the next
Participant	Scenarios involving natural disasters (e.g., storms, flooding, etc.) and accidents/spills would be useful to practice since they are more likely to happen than intentional contamination events.

Role	Comment
Participant	No, the ideas behind the scenario are good
Participant	Don't know, but would be beneficial to show how related.
Participant	If some part of the exercise would have directly affected our state. The FERN part would have affected our state directly but we didn't participate in it.
Participant	The next step would be to add an organic analysis component.
Participant	Add an additional analysis or two and not define the method and analyte.
Participant	If some part of the exercise would have directly affected our state. The FERN part would have affected our state directly but we didn't participate in it.
Participant	A scenario involving a natural disaster such an earthquake where drinking water systems may have been contaminated or compromised would be one that is a real possibility. It could be as simple as an earthquake in southern Missouri (including affecting the city of St. Louis) and a number of "key" water testing labs losing capability to test water. This would then require testing form regional labs, not affected by the earthquake, to do testing ASAP.
Participant	We ran a scenario with JoCo Health Dept. that included private well cross-connected with DW system associated with disease outbreak, nearby Church & Church trip, hydraulic event, etc. Of course, it wasn't a "live" testing event, but did prove challenging.
Participant	Not at this time.
Participant	Have an "emergency" occur during the scenario.
Evaluator	No.
Evaluator	not for the laboratory as we were not "in the field."
Evaluator	NA
Evaluator	No; I think there needs to be continued interaction between public health and environmental entities, thus, like scenarios are appropriate, but possibly more visible interaction with public health officials.
Evaluator	Would like to be involved in exercise involving natural disaster.
Evaluator	Have some after-hours calls, to make it more realistic.
Evaluator	Someone putting a poison in a river/water body used as a water source for a large city.
Evaluator	I think all the different scenarios were very comprehensive in detail and scope.
Question 6. How can the exercise be improved?	
Participant	Work on reporting issues.
Participant	Coordinate Data reporting systems.
Participant	Feedback given to the labs about their performance (still ungraded to keep labs honest about experiences)
Participant	Provide more sample volume to allow for method required matrix spikes.
Participant	Since it took more than 3 - 4 hours to finish (pass) uploading data, the main problems 1) not enough info, such as customer's name, email address, 2) sample type, 3)

Role	Comment
	results basis, 4) reporting limit type 5) we called to get info of customer's name, never got phone call back.
Participant	N/A
Participant	Consolidate reporting to one template and to one site. Consolidate command.
Participant	More information on the chain of custody and sample labels.
Participant	Not sure what could be done differently?
Participant	Daily conference calls with the PRL or Incident Commander. This way, there would be regular updates about the incident, and people can convey any unusual events that may have occurred (media contact, unusual sample requests, etc.)
Participant	We had internal daily meetings, adding a conference call from the ASL and current updates would be helpful and more useful in a real incident.
Participant	Not sure what could be done differently?
Participant	That the comments about WebEDR and implementing where needed.
Participant	Provide "daily" briefings during exercise. This was our first live sample joint exercise with EPA, but I would like additional guidance on how support Labs can/should interact with each other (e.g., KCMO, City of Olathe, JoCo Environmental, etc.)
Participant	Better communication between ASR/IC and the lab.
Participant	Internally, allow for more staff to observe the POC's activities to enhance learning and training so more staff could step into the POC position if necessary.
Evaluator	EPA awareness of what information pertains to which agency/laboratory. Perhaps there could/should be a head of each division of testing type to control the flow of information to/from the controllers and the laboratories.
Evaluator	More communication between MSL. Not that it kept anything from being done, but would promote sharing information.
Evaluator	More difficult (real) matrix
Evaluator	Look at participant feedback, do a Hot Wash with planners, controllers, look at the improvement plan and use it when planning the next exercise.
Evaluator	More emphasis in following the WLA-RP plan
Evaluator	Need more communication to see if labs has problems like transferring data (Need to provide more help and support! (Chemical Environmental)
Evaluator	Since it is voluntary, it would be difficult to make it more testing. To minimize having participants available 8 hours a day, try to specify times when there will be activities for participant; e.g., 2 hours in am plus 2 hours in pm, or morning or afternoon, if possible.
Evaluator	Since it all voluntary, it would be difficult to make it more taxing. To minimize having participants available 8 hours each day, try to specify times when there will be activities for participants; e.g. 2 hours in the am and 2 hours in the pm, or morning or afternoon, if possible.
Evaluator	Process for data transmittal needs to be overhauled. This was the only part of the exercise that could be greatly improved.
Evaluator	More prior training for participating labs in use at Results Messenger for similar events.
Evaluator	Have trained and knowledgeable individuals on the incident management team carry out all of the events on the MSEL.

Role	Comment
Evaluator	Don't know
Evaluator	Rather than having the samples to be analyzed arriving days prior to the event, the samples could arrive the day of the event and potentially over multiple days to simulate ongoing rush sample analysis and not a one-time event.
Evaluator	The laboratory was expected to communicate many things to the IMT, but there was not much communication from the IMT to the lab beyond the initial request for analysis.
Question 7. Please provide other comments or suggestions	
Participant	Fun! Make it harder next time…
Participant	One of the hard things was when our primary point of contact was not available, it was hard to coordinate internally and keep the back-up "in the loop." This confusion would be present in a real situation, too.
Participant	Overall, a good exercise. It was nice to see more than one section of the lab involved in the exercise.
Participant	Overall a very good exercise. A lot of good staff, great opportunity to practice. Thank you for all the hard work!
Participant	I thought this was a great exercise and a great learning experience. Our lab was able to note many strengths as well as a few weaknesses we need to look at. Very glad to have participated.
Participant	It was a good experience
Participant	There are too many forms and sections to fill out in the evaluation phase. One concise form would be appreciated.
Participant	Notification of important events such as conference calls by e-mail should be backed up with a phone call or text message for confirmation.
Participant	Is there a way to share lessons learned from other exercises?
Participant	…we called to get info on Customer's name, never got a phone call back.
Participant	The R7 sample receipt coordinator was not aware that the samples were ready for processing as soon as we were given instructions to proceed with the analysis (i.e., this delayed sample prep and analysis).
Participant	N/A
Participant	A lab meeting is necessary before an exercise begins.
Participant	Great exercise. We appreciate the opportunity to participate. Thank you!
Participant	more user friendly data input.
Participant	The exercise was a very valuable learning tool. One
Participant	Very valuable exercise. I would really like to see the different ways all of the data could be presented and used.
Participant	It's hard to know what to suggest for ideas or changes since it would be helpful to have a list of "intended happenings" and "diversionary happenings" and any changes would need to address goals behind those changes.
Participant	Thanks for the effort in putting this exercise together and the opportunity to participate.
Participant	None at this time.

Role	Comment
Participant	It is good experience to be tested and practice activities under pressure so that if a real emergency occurs, we can successfully respond with fluid process.
Evaluator	Reporting mechanisms were difficult and time consuming.
Evaluator	The WebEDR training information for the schedule of the training session was not received at our lab (and it sounded like others missed this as well. More notice and/or follow up would be appreciated. The exercise as a whole was well run and helpful to the participants. Thanks for the opportunity.
Evaluator	More practice with entering data into WebEDR
Evaluator	We tried to call hot line for the WebEDR. No responses back (chemical environmental)
Evaluator	WebEDR has not gotten universal acceptance and there still are a lot of questions; suggest having a mini-exercise/trial run for participants to use WebEDR following training session.
Evaluator	Enjoyed it! Learned a lot.
Evaluator	Some struggles with the reporting application likely related to limited training on application prior to exercise
Evaluator	Good preparation of documents and training for evaluators
Evaluator	Involve law enforcement (FBI, CST, etc.) in the exercise. Have them deliver some of the samples and check chain of custody procedures.
Evaluator	The WebEDR training provided prior to the exercise was not helpful. The WLA-RP is too complex and detailed to be practical for a real incident.
Evaluator	Thanks for letting me take part in this exercise. As an evaluator, I learned a great deal.
Evaluator	I think more training on participation in the EPA's ERLN/WLA would be beneficial for laboratories new to the ERLN/WLA. There was sufficient training for participation in the exercise, but the lab was left to figure how to implement the WLA RP on its own.
Evaluator	Overall, exercise revealed we have work to do regarding sample handling, internal communications, acquiring additional resources, need for more cross-training, etc. I need to learn more about the electronic data submissions to develop methods to convert our data packages into format(s) that meet requirements.

Appendix C Comments and Recommendations from the Exercise Evaluation Guides (EEGs) and Laboratory Participant Evaluation Forms

Category	Role	Comment
Chain of Custody	Evaluator	Contaminant of concern was communicated, but field information concerning samples was lacking. The CofC only listed sample numbers and matrix.
Chain of Custody	Evaluator	Some information that WebEDR wanted was not included in the chain-of-custody.
Chain of Custody	Evaluator	Water samples did not include documentation on what analysis to run and to whom and how to report results. Possibly cross train or have available other state's sample submission form to promote interstate surge ability.
Chain of Custody	Participant	The COC was not in a plastic bag and was damp. Paperwork should always be protected from moisture.
Chain of Custody	Participant	EPA - The CoC for the water samples (ten samples total) was difficult to read the collection date – also, no lines for signatures for relinquishing custody of samples. Add signature lines
Chain of Custody	Participant	Samples “arrived” from analytical services requestor, but insufficient information was provided on chain-of-custody & labels, e.g., PPE needed, % strength of preservative, analysis to be run, container type, etc. Perhaps developing standardized documents to handle such events would allow support labs to develop internal procedures, etc. to better utilize or acquire information.
Chain of Custody	Participant	No indication of what concentration of HNO3 was actually in the sample bottle; not on label or chain of custody. Add better preservative details to both label & COC
Communication and Coordination	Evaluator	We received only 11 minutes notice from EPA for the Q & A call regarding arsenic analysis. Contact participated but did not notify evaluator. Ultimately, the call did not apply to our analysis, and only caused confusion.
Communication and Coordination	Evaluator	Comments and suggestions: KAN-LAB was invited to the call by EPA with no information as to what was going to be discussed. We had not yet completed the exercise at this point and for both reasons were unprepared to discuss our formal feedback on the operation. I believe it would have been more appropriate to wait for the previously scheduled call to cover this information; to be held two work-days later.

Category	Role	Comment
Communication and Coordination	Evaluator	Our laboratory received copious amounts of information (mostly via email) which did not apply to the analyses we were performing (As in food). This led to confusion on our part as to which directions we were to be following (those of FERN or those of EPA?). Additionally, there were inconsistencies in how we were contacted at different points of the exercise. Originally, we had named Rachel Dietzel as primary contact. When prompted by EPA to name the exercise Evaluator, we communicated that Mr. Neal Adams would be the primary contact and Rachel Dietzel the evaluator. At that point the evaluator was no longer contacted or included on emails. Our laboratory director AND primary contact continue to receive all communications. This made it challenging for the evaluator to evaluate some steps of the exercise. FERN continued to contact both the evaluator and the primary contact.
Communication and Coordination	Evaluator	After the initial conference call to discuss the situation at hand, little to no information was received from the R7IMT. No additions conference calls were held. As a result, SD PHL looked to R8 personnel for guidance. R8 personnel provided SD PHL with the information needed in a timely and accurate manner. R8 provide excellent support during this event.
Communication and Coordination	Evaluator	During the initial conference call with R7 IMT, the appropriate methodology for sample analysis was fully discussed. Much of the discussion on the appropriate methodology was the result of support laboratory personnel asking questions to ensure they knew what was expected of them. A definite strength in the exercise was support laboratory personnel's willingness to ask the questions so they fully understood what was expected of them.
Communication and Coordination	Evaluator	On the initial conference calls with support laboratories to discuss the situation at hand and in the coming days, no Point of Contact information was given. The call ended without the support laboratories knowing who to contact if any issues or questions came up after the call.
Communication and Coordination	Evaluator	After the initial conference call held with all the support laboratories, no additional conference calls were held. Any situation updates received by the SD PHL were through R8 personnel.
Communication and Coordination	Evaluator	The management approval process within SDPHL was bypassed probably because the POC was aware of the laboratory's participation in the exercise.
Communication and Coordination	Evaluator	All phone calls to the Primary Responding Lab (PRL) and Analytical Services Requestor (ASR) were answered promptly. All e-mails to the Environmental Unit Coordinator were also answered quickly. If any of the participants in the full scale exercise experienced slow or inadequate communications, then the same communication procedures used by the PRL to coordinate the response with TestAmerica Denver should implemented for those participants for any future incidents.

Category	Role	Comment
Communication and Coordination	Evaluator	Complete and timely follow up emails were received to document the phone conversations between TestAmerica Denver and the POC, PRL, ASR and the Environmental Unit Coordinator. This prevented miscommunications and misunderstandings. The procedures described in Section 2.7.1 Communications Logistics in the WLA-RP regarding email follow up should be emphasized to all participants during the initial contact made at the beginning of an incident.
Communication and Coordination	Evaluator	A conference call was scheduled for 10/17/2011 at 14:30 MT via an email sent out at 14:15 MT. TestAmerica Denver had a period of slow email that day and did not receive the email until 14:50 MT and, therefore, missed the meeting. Email alone is not always a reliable means of communicating an event like a conference call in such a short time frame (15 minutes). If longer lead time is not an option then a phone call in addition to the email would help insure that the message is received. If individual phone calls are not feasible, then perhaps a broadcast text to a cell phone at each lab could be sent.
Communication and Coordination	Evaluator	The lab received a call from an individual identifying herself as a representative from a utility company and requesting TestAmerica Denver's help in analyzing samples that her lab could not handle. TestAmerica contacted 3 people for confirmation of the validity of this request and received three different instructions on how to proceed. The ASR/IC advised us to refer the utility company representative to the Public Information Officer (PIO). The POC with the PRL then contacted the PIO and got the impression that it was okay for TestAmerica Denver to accept the samples. The POC asked the lab to forward the details of our contact with the outside part to the Environmental Unit Coordinator (EUC) for confirmation. The EUC advised the lab that the outside party was not legitimate and that the lab should not accept the samples. The lab then contacted the outside party, declined to accept the samples, and referred the outside party to the IC and the Environmental Unit. Coordination between the IC, ADR, PRL and PIO should be improved so that the MSLs do not get mixed messages. A clear and consistent procedure for responding to contacts from outside parties should be established at the beginning of an incident and discussed with the labs.
Communication and Coordination	Evaluator	Lab initiated use of App C. PRL should use App C for all initial communications with the labs. TAL-Denver had a kick-off meeting with the appropriate lab staff. QA Manager, Project Manager, Chemistry Group Leaders. Operations Manager, Sample Login Supervisor and Lab Director.
Communication and Coordination	Evaluator	The conference calls were a good way to ensure everyone had the same information. However, I did notice that the same information was not always available from each entity. Some had more information than others. This may have been because they were held at different times and that information may not have been available to all. Was hard to tell.

Category	Role	Comment
Communication and Coordination	Evaluator	First email sent at 10:49 to FERN Microbiology and Chemistry Laboratories contained questions about whether SHL could furnish Chemical analysis on root beer (at bottom) went to FERN contact in Iowa City, not copied to contact person in Ankeny (since not participating in this part of the exercise). In real life scenario, Ankeny would be able to respond by analyzing root beer for arsenic. Our contact person was notified by SHL personnel and did respond to Chemical analysis part of email @ 11:14
Communication and Coordination	Evaluator	Multiple contacts by media representatives provided a real world experience for the lab as to how to handle and proceed with these details. Additional guidelines should be provided prior the any contacts as to how to deal with media contacts that properly address EPA expectations and lab policies.
Communication and Coordination	Evaluator	At the beginning of the exercise, very limited information was available which simulated real life situations where the initial incident response would be in ongoing with goals evolving and changing as situation developed. The lab could develop a more comprehensive plan as to what information would be needed if it is not readily available in an incident response situation.
Communication and Coordination	Evaluator	After the initial incident and the expected lack of information, limited additional information and communication was provided. Details regarding analysis expectations, sample concentration levels, data evaluation requirements, sample retention times, data retention times. The lab ended up processing the samples per standard protocols which may not be sufficient in an incident requiring law enforcement standards. Both the lab and the incident commanders can become more familiar with Appendix C of the WLA. The appendix provides prompts and questions that cover most of the necessary information for a real life incident. It is incumbent on the incident commander or their delegates to provide the necessary information to the labs as to what needs to be handled outside the labs standard protocols.
Communication and Coordination	Evaluator	The lab was contacted regarding the incident and was requested to assist the sample analysis. No discussion of POC, communication chain or other EPA/ERLN requirements
Communication and Coordination	Evaluator	The intent of Appendix C is to guide the discussion between appropriate parties when requesting analytical support. It was my impression that some participant labs used the help sheet, but I am not convinced that it was universally used. There are probably several reasons why it wasn't universally used, here are three that I can think of: 1) awareness that it exists; 2) extensive amount of information contained on the forms; and 3) the format of the content. Since the EU contacted each laboratory individually during the exercise, another factor that may have contributed to not using the Checklist is time. While all of the information is probably essential when coordinating for analytical support, an alternative to using the entire forms to cover all issues may be to limit the amount of information on the initial contact with a follow-up email with the more specific information. This would save time in the process of lining up labs initially and there could be a sample template to provide the supplemental information to be sent as an attachment to an email.

Category	Role	Comment
Communication and Coordination	Evaluator	IMT didn't appear to utilize Appendix C. EU arranged a conference call for all participant labs, but the notice was sent out via email only about 20 minutes prior to call. Some labs did not get the notification. EU discussed analyte, analytical methods, QA, etc on conference call. R7 lab received notification of sample receipt at 1600
Communication and Coordination	Evaluator	Controller contacted R7 lab director pretending to be from the KDHE lab. After discussion with controller to verify identity, lab director agreed to accept samples. Not certain IMT was notified.
Communication and Coordination	Evaluator	Good communication between R7 IMT, MSPHL, Emergency Response people within MSPHL, and Chemistry Laboratory. Used Help Sheet. The WLA was not reviewed until prior to this exercise. Need routine review by MSPHL staff.
Communication and Coordination	Evaluator	Help sheet in WLA helped know protocol to match to necessary information given. It was a good reference to remind analysts what to look and listen for. Establish more routine review of WLA for Chemistry staff.
Communication and Coordination	Evaluator	Overall communication with national response was excellent. The combination of conference calls with email follow ups, Q&A sessions, and direct phone calls provided MT staff with the necessary information to understand the situation, request for assistance, and reporting procedures to match on a national basis. All laboratories responding had the same information and could follow-up on questions asked by others. The experience of our staff was invaluable to identify, question, and resolve variances in sample methodology utilized by other laboratories. There was a concern with important WebEDR information being "buried" through several forwarded emails to the point where level of significance was lost and could have been potentially ignored. As state above, forwarding email, relevant materials contained in the email should be extracted and placed before the listing of who has forwarded the information.
Communication and Coordination	Evaluator	Internal staff communications was based on individual preferences for their own documentation procedures, call logs, emails, and communications with management. While all documentation was not presented in a timely manner, high priority and pertinent information was relayed effectively to command and control and provided accurate and complete information to enhance situation awareness and a common operating picture.
Communication and Coordination	Evaluator	Although the lab always noted and wrote down pertinent information in a logbook, some steps in collecting information from the WLA-RP and Appendix C were missed. Some of the questions in this EEG were not addressed. If the WLA-RP and particularly Appendix C had been followed more closely some things might of not been missed. In one instance, the lab had trouble finding a name to enter in submitting the results, they had to look through old notes and emails to find the correct name. Had the sheet for requesting analytical support (Appendix C) been followed more closely it would have saved the lab some time and stress. Practice and review the WLA-RP better before the exercise started.

Category	Role	Comment
Communication and Coordination	Evaluator	The lab in house coordination and communication was very good. All personnel associated with the exercise from sample receiving, to sample analysis, to data entry, were kept well informed. The lab point of contact was sure to notify everyone involved of any new information or changes that arose. Also, for any clarification needed, the EPA region 8 representative was quick to respond with information to help the lab.
Communication and Coordination	Evaluator	Help sheet (Appendix C) was not used information was written down in a log book
Communication and Coordination	Evaluator	WDA has excellent in-house procedures in place for day-to-day operations. Most employees were familiar with the existence of the plan, but did not refer to it during the exercise. If the appendices had been used during the exercise, and communication channels used more effectively and frequently, the exercise would have gone more smoothly. Lastly, as an evaluator, I did not receive some communications necessary for making my observations. I had to repeatedly ask participants to make sure I was present when any activity involving the exercise was executed. All participants in the WLA should have regular training sessions regarding the RP.
Communication and Coordination	Evaluator	WDA missed a briefing on Monday because email notification was sent 16 minutes before the briefing was held.
Communication and Coordination	Evaluator	Lab manager took hand-written notes during call and transferred to lab electronic log form created in Excel. Using Appendix C would have helped to collect all pertinent information. This omission was the key reason most of the pertinent information needed was not obtained.
Communication and Coordination	Evaluator	This was the briefing where we were given only 16 minutes lead time by email. Notification was discovered after the briefing had taken place. The only way this could have been attended is if the lab had a constant monitoring presence of emails. I would suggest a phone call as well as email notification. If full-time command station had been in place and several persons assigned to monitor emails, notification may have been received.
Communication and Coordination	Evaluator	Internal communication with the metals department provided ample information about what to expect regarding sample type, analysis requested, and possible analytes. When samples were distributed to the lab, the lab was able to devote staff resources to efficiently analyze samples and meet the established turnaround time.
Communication and Coordination	Evaluator	There were not clear, direct lines of communication established early in the exercise. As the exercise went on, there was some confusion at the laboratory as to who was responsible for the roles established in the WLA RP (e.g. Analytical Services Requester, Incident Commander, Public Information Officer). Other elements were also missed that may affect data quality, such as proficiency/certification required, level of data review, and sample disposal. Recommend that the lab use the appendices in the WLA RP to document the exchange of information.

Category	Role	Comment
Communication and Coordination	Evaluator	In the exercise evaluation guide, several communication events to the R7 IMT were missed by the laboratory. The R7 IMT was not notified when the lab received samples, received communication from outside individuals (e.g. MO governor's office, newspaper reporter), and when data was submitted. Recommend a more robust training program for labs new to the EPA ERLN/WLA. Labs that already have well-established emergency response procedures could share best practices with new labs to make sure basic elements of communication and documentation are understood.
Communication and Coordination	Evaluator	Most of the sample brokerage information was recorded in a notebook. Use of the checklist in Appendix C would have ensured all relevant information was exchanged.
Communication and Coordination	Evaluator	A conference call was conducted after the initial request for analytical support to help bring all laboratories up to speed on the situation. On this call, QA/QC requirements were discussed, as well as expected reporting limits. Data was to be delivered via WebEDR. There was not a discussion about how specifically the data was to be reviewed and validated. WebEDR provides a certain level of data validation, but it was unclear if this was good enough.
Communication and Coordination	Evaluator	The lab referred the caller to the R7 IC, and did not release any information that could compromise the investigation. Lab did not report this call to the R7 IMT and did not record the discussion in a communications log.
Communication and Coordination	Evaluator	The NEIC laboratory set up a command center in a conference room and manned it throughout the exercise. E-mails were pinned to a wall and a sequence of happenings was recorded on a white board.
Communication and Coordination	Evaluator	Daily updates should be provided by the IMT.
Communication and Coordination	Evaluator	Many staff asked about other parts of the exercise due to use of normal incident management email system. Follow on discussion of a command center and meeting for incident response. Review and update guidelines as needed, continue training.
Communication and Coordination	Evaluator	The POC at the PRL (EPA Region 8 Lab in this case) sent email followups to telephone calls and teleconferences to the mutual support laboratories. Encourage this practice for all incident related telephone calls and teleconferences to provide written documentation.
Communication and Coordination	Evaluator	E-mails with information about WebEDR documents and contact information to get answers to WebEDR questions were sent to participants during the exercise. Use e-mail to communicate important information to participants during a real incident response.

Category	Role	Comment
Communication and Coordination	Evaluator	Not all information required by the analytical services requestor (incident commander) was communicated to the mutual support laboratories during the initial conference call at 1530 on 10/17/2011. Emails were sent later in the exercise. Review the checklist in appendix B, the helpsheet and form Part 1 and form Part 2 in appendix C and use them during the next exercise and actual incidents. The incident commander (ASR) needs to initiate discussion of the information required form the mutual support laboratories using the help sheet, forms, and checklist as a guide. The mutual support laboratories should follow along on the helpsheet, forms and the checklist during the discussion to ensure that nothing required is overlooked or left out.
Communication and Coordination	Evaluator	IMT situation updates and briefings were not conducted which resulted in lack of knowledge as to the progress of the response and lack of knowledge of problems and solutions especially related to results reporting. ASR-PRL-IMT need to conduct situation updates and briefings at least once per day or more often during the incident response so all involved parties are kept adequately informed and to discuss and resolve any common problems that come up.
Communication and Coordination	Evaluator	At various times thru out the exercise, the Incident Command team did not seem to be working from the same body of information. The barrier could have been negated if a bulletin board or an email with a running history was utilitized. Additional drills and training would enhance the communication process among team members. The laboratory should consider using a public information officer.
Communication and Coordination	Evaluator	Communication could have been better with regards to when each laboratory would receive their assigned samples.
Communication and Coordination	Evaluator	Someone from the Kansas governors office called requesting data results. POC stated no results were available yet and gave them the number to the ASR for them to contact for further information. The lab should implement the "Help Sheet for Requesting Analytical Support during an Emergency Response, Appendix C" to record ongoing contacts.
Communication and Coordination	Evaluator	Discussions between the ASR and POC were recorded in an incident notebook. The use of the help sheet may have been more helpful and informational. During an emergency response the lab should implement the use of the "Help Sheet for Requesting Analytical Support During and Emergency Response, Appendix C."

Category	Role	Comment
Communication and Coordination	Evaluator	The lab held a meeting of analysts within the hour that it received notice from MO requesting testing assistance. A site on lab network was established to record all notifications and actions associated with the event. Staff directed to review testing protocols for arsenic and check supply levels. Add a list for critical supplies needed for testing each analyte.
Communication and Coordination	Evaluator	Through staff meetings and internal event site, the lab and analysts involved with testing were able to keep track of response status and test results. A list was established on the computer network, complete with sample ID, testing status, and results.
Communication and Coordination	Evaluator	A conference call was missed by CO staff due to confusion regarding the call time. Controllers announced teleconference for 2 pm, but this was CDT, while CO lab was in MDT. More clarity in announcing meetings, hot washes, teleconferences. List times for all participating labs, noting local time zones.
Communication and Coordination	Evaluator	Lab staff fully exercised protocols regarding internal communications and followed chain of command notifications throughout the exercise. On several occasions event injects were received by secondary POCs. In every case the internal chain of command and notification procedures were enacted as described in agency chain-of-command protocols up to and including the time that the primary POC could be apprised of the situation. Reinforce current protocols with existing staff and ensure that new employees are fully aware of how to handle 'hot' phone calls.
Communication and Coordination	Evaluator	Although it may have been the direct result of the artificiality of the exercise, there was some initial confusion regarding the sender of the samples to be analyzed. A different (EPA) Chain of Custody form was being utilized and it was not initially logged (to my knowledge) that the samples were sent by the Kansas City Water Services Division. It should also be noted that the lab was unclear of the geographic location of the samples being analyzed and that the event was likely a criminal incident. WLA-RP Appendix C. Ensure that all staff are aware of the checklist in Appendix C and that all relevant information is recorded as appropriate during an emergency response.

Category	Role	Comment
Communication and Coordination	Evaluator	Again, due in large part to artificialities of the exercise, communication between the lab and the Incident Command could have been more expedient. Specifically, when the lab received the call from the 'Governor' requesting information this was not immediately relayed to the IC (it was a short time later). The ESP lab played the scenario as though the information requestor was credible and acted appropriately to notify the agency COCo Communication from the PRL to the MSL was lacking during the exercise compared to what would be expected in a real event (this observation is not critical of the ESP labs efforts. WLA-RP Section 2.5.1 (Incident Command System), Once the ICS is established any contacts, updates, or other developments should be communicated to the IC as described within the WLARP and the ICSINIMS structure as quickly as possible to ensure unified command of the situation.
Communication and Coordination	Evaluator	The lab contact was unavailable for several phone calls due to internal activities. The EPA IMT left messages in voice mail. In case of a real emergency, it would be better to request to speak to another person at the lab.
Communication and Coordination	Participant	The chemists in the Metals Section did not initially respond to the request for analysis in a priority manner. Manager intervention was required. It needs to be emphasized even more that emergency samples are handled at highest priority even if it means delaying breaks or mealtimes.
Communication and Coordination	Participant	EPA - Good communication via conference calls. Always felt in the loop. Very well done.
Communication and Coordination	Participant	Comment: There was some confusion on our part concerning if this was actually the start time. This was clarified quickly and no analytical work had begun. We then waited for the call to start sample analysis. I also talked with Larry Groner the Acting Director of the Environmental Services Program (ESP) about the call. He in turn notified Department management at their afternoon meeting the exercise had begun and we were awaiting the direction to begin sample analysis. This call occurred at 16:03. Improvement: We should have repeated our instructions/expectations back to the controller to ensure clear directions.

Category	Role	Comment
Communication and Coordination	Participant	Because this was an exercise we decided to "play" this as if it was a recognized contact from the Governor's office and provided answers to his questions including general results. Because we knew virtually knowing about the samples and where they came from we could not provide that type of information. I did tell him I could provide him with the coordinator's phone number. He declined. Accomplishment: We followed ESP protocol and responded to a Governor's contact and request for information. Our response was because we had already "mock informed" our upper management. If we would have "played" this call as someone we did not recognize, we would have taken contact information and vetted this through upper management for further direction. Improvement: Even though we "played" this call as a recognized person, it may have been more appropriate to refer him to the controller for results primarily because the exercise scenario may have been an event outside our state. If so, it may not have been appropriate to give even out Governor's office that type of information.
Communication and Coordination	Participant	Overall communication though limited was clear and helpful, especially when a request for clarification or direction was initiated by our lab.
Communication and Coordination	Participant	The PRL point of contact did not use Form Part 2 in Appendix C of the WLA-RP entitled "Requesting Analytical Support During Water Emergency Response (PRL – MSL)" even though it is a comprehensive and organized way to transmit information and requirements to the MSL during an emergency response. TestAmerica Denver used Form Part 2 during the initial telephone conversations with the PRL to gather the important information about the project. Use of Form Part 2 by the PRL during all initial contacts with the MSLs would provide consistency and would ensure that all important information is transmitted to all MSLs.
Communication and Coordination	Participant	All phone calls to the Primary Responding Lab (PRL) and Analytical Services Requester (ASR) were answered promptly. All e-mails to the Environmental Unit Coordinator were also answered quickly. If any of the participants in the full scale exercise experienced slow or inadequate communications, then the same communication procedures used by the PRL to coordinate the response with TestAmerica Denver should be implemented for those participants for any future incidents.
Communication and Coordination	Participant	Complete and timely follow-up e-mails were received to document the phone conversations between TestAmerica Denver and the POC, PRL, ASR, and the Environmental Unit Coordinator. This prevented miscommunications and misunderstandings. The procedures described in Section 2.7.1 Communications Logistics in the WLA-RP regarding e-mail follow-up should be emphasized to all participants during the initial contact made at the beginning of an incident response.

Category	Role	Comment
Communication and Coordination	Participant	A conference call was scheduled for 10/17/2011 at 2:30 pm MT via an e-mail sent out at 2:15 pm MT. TestAmerica Denver had a period of slow e-mail that day and did not get the e-mail until 2:50 pm MT and, therefore, missed the meeting. E-mail alone is not always a reliable means of communicating an event like a conference call in such a short time frame (i.e., 15 minutes). If longer lead time is not possible, then a phone call in addition to the e-mail would help ensure the message is received. If individual phone calls are not feasible, then perhaps a broadcast text to a cell phone at each lab could be sent.
Communication and Coordination	Participant	The lab received a call from an individual identifying herself as a representative from a utility company and requesting TestAmerica Denver's help in analyzing samples that her lab could not handle. TestAmerica contacted 3 people for confirmation of the validity of this request and received three different instructions on how to proceed. The ASR/IC advised us to refer the utility company representative to the Public Information Officer (PIO). The POC with the PRL then contacted the PIO and got the impression that it was okay for TestAmerica Denver to accept the samples. The POC asked the lab to forward the details of our contact with the outside party to the Environmental Unit Coordinator (EUC) for confirmation. The EUC advised the lab that the outside party was not legitimate and that the lab should not accept the samples. The lab then contacted the outside party, declined to accept the samples, and referred the outside party to the IC and the Environmental Unit. Coordination between the IC, ASR, PRL, and PIO should be improved so that the MSLs do not get mixed messages. A clear and consistent procedure for responding to contacts from outside parties should be established at the beginning of an incident and discussed with the labs.
Communication and Coordination	Participant	Laboratory received a call from someone claiming to be a reporter from a local station. No direct contact as call went to voicemail due to Lab Director being involved in other issues. Over an hour lapsed before anyone knew call came in. Then we were uncertain how to handle the call. As noted in example above, guidance would be beneficial to supporting utility. This also revealed internal issues to be resolved concerning who should know details of such events & where our internal crisis communication plan fits in.
Communication and Coordination	Participant	Giving a heads up about the conference call with information about what we would be analyzing for gave us time to have the affected lab staff present during the conference call.
Communication and Coordination	Participant	The labs were asking questions about analysis requirements, Most of the requirement questions I believe would be fairly standard (QC, minimum reporting limit) and could be given during the initial briefing with an e-mail follow up. This would help to make sure that there was no miscommunications about what the analysis requirements are.

Category	Role	Comment
Communication and Coordination	Participant	As previously discussed, we provided our R8 point of contact (POC), a contact hierarchy for our lab during the "request for support" phase of the exercise. However, when we got the "go ahead" call was left as a voice message on an office phone that was designated as our 3rd contact number, while the two other contact numbers, the incident command center (1st) and a cell phone (2nd), were available at this time. In addition, other phone calls that did come in during the exercise came to our 3rd contact number; no calls ever came in on the 1st or 2nd phone lines. Luckily, calls that came to the 3rd phone were forwarded to one of the newly installed digital phones in the command center. Otherwise, persons would have had to been stationed at the command center, and well as this office. In the handbook, there was a calling hierarchy for the exercise controllers, so a calling hierarchy seems to be important. Perhaps that might be one of items on Appendix C that needs to be conveyed between the PRL and the MSL or the ASR and the PRL.
Communication and Coordination	Participant	We realized for an incident we needed a group email account to help expedite response and to maintain security of individual email accounts. We contacted our IT group and found that they can easily setup a group email account.
Communication and Coordination	Participant	Communications were effectively logged so the team could read the logs on a shared drive. It was realized that a column for who had called and their contact information needed to be added to the log. Communication log was improved.
Communication and Coordination	Participant	Established an "Update" section on the bulletin board in the command center. Here, up to date copies of meeting notes, the phone log, as well as copies of all e-mails were posted. Having these posted allowed any team member to see what events had occurred at anytime.
Communication and Coordination	Participant	Had a mobile white board, which was used to record any incident event shortly after it had occurred. Having a bigger and permanent white board combined with the "Update" section would help with maintaining the communication lines both within NEIC, and with the PRL and ASR.

Category	Role	Comment
Communication and Coordination	Participant	First, page 10 of the WLA Response Plan talks about when an MSL can't provide the support requested by the PRL and what should happen between the MSL and PRL concerning sample transfers. However, nothing is mentioned about when two MSL labs talk about sample transfer. Perhaps some kind of guidance in the plan concerning this scenario would be beneficial, what needs to be done, who needs to be contacted, etc. Just mentioning it in the plan would make labs aware that this situation could happen in a real situation. Second, a write-up about Dr. Zane was sent to the R7 IC commander and copied our R8 POC as well. However, we did not receive any follow up or further information about this situation, until we had our debriefing with the controllers on 10/20/11.
Communication and Coordination	Participant	The initial call lacked detail that would help the lab respond to the incident. I as the MSL point of contact did not offer detail as to what the anticipated capacity of the lab was to handle the number of anticipated samples. Where possible it would help if the initial caller has more details in regards to the incident so the lab contact can better ascertain whether or not the lab is in the position to help.
Communication and Coordination	Participant	The meeting with all of the management staff allowed several points of views and observations that allowed us to ascertain how we would handle the situation. We were able to pin point important questions to direct to the ASR.
Communication and Coordination	Participant	The initial caller informed the lab of a conference with little notice (approximately 1400). I (primary point of contact) was at lunch at the time of the conference call notification. Prior to leaving the lab I had left information on the exercise with another project manager. The information included questions I had e-mailed to the initial caller. The project manager I left the information with was able to attend the conference call. The call provided additional details as to the analytical requirements (method, turnaround time, and required deliverables). The call was followed up with an e-mail from the ASR. Providing the information to another project manager allowed for a more seamless flow of information between the ASR and the lab.
Communication and Coordination	Participant	Public Information Officer contact information needed was not provided at the same time as the contact information for the PRL and IC contact information was provided. Provide all possible contact information (including Public Information Officer) at the beginning of an event to better help the labs respond to media contacts.
Communication and Coordination	Participant	The false media contacts to the laboratory was good practice for our laboratory. We had two contacts, one to me as the primary point of contact for the exercise and one to our laboratory director. In both cases we responded with "no comment". Familiarization with the above reference (WLA-RP) prepared me to respond to media contacts as "no comment". I did refer the reporter to the Incident Commander.

Category	Role	Comment
Communication and Coordination	Participant	The initial call regarding the exercise was received on 10/17/11 at 0900. The caller (Marcie Tidd) was only able to provide the contaminant of concern (arsenic) and that there could potentially be thousands of samples. Marcie did not have any information regarding the method required, the suspected level of contamination. However, these were the only questions I asked. I did not begin discussions regarding how many samples I anticipated the lab could handle, analytical limitation such as methods we could utilize, or required sample volume to perform the analysis. This information would have helped Marcie determine immediately whether our lab had the capability to respond had the event been a true emergency with thousands of samples. WLA-RP Appendix C, Form Part 2: Requesting Analytical Support during Water Emergency Response (PRL MSL). Had I had the above referenced form in front of me I could have asked more questions on the initial call pertinent to the incident: turnaround time required, deliverables required, report results to contact, etc. However, it seems that Marcie may not have had this information available at the time of the call. More applicable fields that could be added to the form in a separate section (or a separate form could be added to WLA-RP). The new section could have bullets prompting the MSL to discuss items with the PRL such as anticipated lab capacity, analytical methods the MSL can offer, required sample volume for the contaminant of concern, etc. These prompts would provide immediate information to the PRL to help them make decisions regarding which MSLs they can use.
Communication and Coordination	Participant	Communication with Missouri, EPA or CDC points of contact went very well. Conference calls were helpful, and gave opportunities for participating laboratories to ask questions and get clarification. Because we are a small public health laboratory, it was sometimes a little confusing for us to determine which scenario the received communication was in reference to. Issue: Too many scenarios with too many points of contact at the MTPHL In hindsight, having only one point of contact at the MTPHL who would then disseminate the information to the testers and other players would have better simulated a real live event in Montana, and given us a better chance to exercise parts of our Incident Command System structure.
Data Reporting	Evaluator	After testing was completed, the delivery of data through the WebEDR proved to be difficult. SD PHL had not previously installed or trained on the WebEDR system. About 4 hours was spent working to submit results through WebEDR and with support from the WebEDR support staff results data was successfully transferred. Make sure all laboratories have installed WebEDR and are adequately trained on using it
Data Reporting	Evaluator	SDPHL submitted their data using WebEDR but had not accessed it prior to the day of submission and had no training. Reporting using WebEDR was cumbersome and time consuming.

Category	Role	Comment
Data Reporting	Evaluator	the lab's interactions with the WebEDR Help Desk/Hotline were very successful. This exercise was TestAmerica Denver's first experience with the ERLN 1t format. The labs received timely responses to its questions and the support needed to process and upload the WebEDR on-time. A list of the most common WebEDR issues that the participants had during the exercise could be compiled and use to create additional guidance to help the labs prepare their WebEDRs more efficiently.
Data Reporting	Evaluator	Instructions for the WebEDR come to the labs "on the fly" and in several installments while the samples were being analyzed. The lack of a complete specification for the EDD prevented smooth and efficient processing of the analytical results. The fact that some of the labs were implementing the WebEDR process for the first time also contributed to the confusion. The lack of complete specifications and guidance prior to the incident is not unexpected. However, the goal should be to have more of the details worked out and distributed prior to the incident. This would reduce the time spent by the labs working out the issues with the Help Desk and IT.
Data Reporting	Evaluator	The WEB EDR upload was not an easy process. The lack of complete specifications and the fragmented transmittal of instructions prevented a smooth and efficient processing of the EDR.
Data Reporting	Evaluator	It took a long time for the data to be entered. Would be helpful if all fields could be pre-populated so all that the labs would have to put in would be the final result. Is analysis time necessary? What if the testing system does not record individual analysis times?
Data Reporting	Evaluator	The WebEDR data delivery system is in its beginning stages and has not had a chance to develop into a mature system. EDD and report data is not easily uploaded and entered into the system without significant trial and error or step by step instructions from the helpdesk. Provide labs with valid value tables to create cross reference information at the lab for their methods. Having samples analyzed and data submitted to the WebEDR system on a regular basis for various methods and matrices can allow the labs to become familiar with the system and help work out details with the WebEDR operators.

Category	Role	Comment
Data Reporting	Evaluator	As observed during the exercise and the feedback during the After Action Review, it was readily apparent that there was a wide range of reactions to using WebEDR. Some users felt that it was straight forward and easy to use, while others found it very difficult and confusing. These reactions probably reflect such factors as participant lab's preparation (or lack of preparation) to use the system; familiarity with using the system; not following directions; as well as the effectiveness of the training prior to the exercise; systems ease of use and flexibility. If this system is intended to be the Agency's system for use during responses, there needs to be endorsement and a commitment by potential users to use the system. An option to dictating that all potential EPA users will be responsible for implementing the use of the system is to use the system during exercises like this and make changes to the system to make it as user friendly as possible. For future exercises, it might be helpful to include an opportunity to practice the use of the system prior to the exercise. This is not my recommendation, but someone else suggested it so am including it. Barry Evans who was in the EU suggested that it might be helpful to have a tabletop exercise focusing on the use of WebEDR. These could be done periodically so that organizations could maintain familiarity with the system's use. As a suggestion, these tabletop exercises could be performed across the EPA regions or within EPA regions with their primary state counterparts. The bottom line is that there needs to be acceptance of the potential users, willingness of the potential users to practice the use of the system and provided with opportunities to stay current (practice) on the use of the system.
Data Reporting	Evaluator	Was very time consuming and difficult to input all of the data into the spreadsheet required to upload data into the WebEDR. It took a phone call to receive the proper spreadsheet. It took a phone call to inquire about fields. It took a long time to link and enter data. It was also somewhat of an experiment to upload into Web EDR since the MSPHL has not experience with this. It was by trial and error and there was relief when received confirmation by R7 IMT. EPA R7 IMT should pre-populate the spreadsheet with general information regarding the specific incident prior to distributing to MSL. This would expedite result submission.

Category	Role	Comment
Data Reporting	Evaluator	Our laboratory was introduced to the WebEDR in the weeks prior to the exercise. When asked if this would be part of the exercise, the trainer indicated “no”. Therefore, we have not spent any time converting and/or reformatting our LIMS system, instrument data, and report worksheets for data exportation into WebEDR. As such, refilling values for each field, correctly filling out data sets, and re-reporting information in WebEDR was frustrating and time consuming. However, staff at the WebEDR Helpdesk was knowledgeable, helpful, and helped relieve the stress with implementing a new report system during an incident. The WLA-RP form and and/or appendices were not utilized in Montana as it had not been provided before the exercise and staff was not familiar with form or process to utilize. Training and Planning - Without pre knowledge of the WebEDR process, our laboratory department would not have met deadlines and most likely submitted information to the LRN based upon our standard operation procedures. Other forms such as the WLA-RP were unknown to our staff. Additional Just-In-Time training was necessary to comply with meeting reporting standards. As such, internally, additional implementation of the WebEDR and other national reporting standards into our processes will be discussed, evaluated, and implemented as necessary and appropriate.
Data Reporting	Evaluator	Formatting in WebEDR took 4 hours, was a huge problem and took longer than actually running samples and QC review of the data by the chemists. Had never seen WebEDR until training two weeks before response and was told that WebEDR would not be required for participating in this response. Formatting correctly without an example and without the valid value lists was frustrating and problematic. The correct method, 200.8 for Arsenic, was not in the drop down menu. QC date was required but information about how to format this information for uploading came much later. Information about method needed to be reported and other needed info was buried in an e-mail that was forwarded two times before receipt in our lab. Difficult to find information buried that far down the e-mail chain.
Data Reporting	Evaluator	The lab had trouble submitting the analysis results because certain fields would not accept the information entered. Instructions for entering data into the WebEDR were not very clear. Lab said they tried contacting the WebEDR hotline but did not get any response. The sample results were done by 12:00 noon on Tues but didn’t get submitted until the next morning due to the WebEDR issues. More experience or practice with entering data into WebEDR would have helped. Maybe a step by step instruction like the one offered by FERN PT (eLEXNET data entry) would be helpful.
Data Reporting	Evaluator	This was the area that presented the greatest difficulty to the WDA. The data template did not give all the information needed for a successful data transfer. Additional emails were sent to clarify information, but the initial template could have had this information laid out from the onset.

Category	Role	Comment
Data Reporting	Evaluator	This section posed the greatest challenges during the exercise. The spreadsheet example was not explicit enough and required us to obtain and understand SEDD before data could be submitted. During the actual submittal, Lab Director had to call the help line several times for assistance. The assistance provided was excellent.
Data Reporting	Evaluator	Lab uploaded data using WebEDR. Lab-generated EDD required heavy manual editing to make data acceptable on WebEDR. Lab did not confirm that R7 IMT received the data. Recommend lab's IT group provide more support regarding EDD development.
Data Reporting	Evaluator	Information needed to data into web system was not available when analysis was complete. A question of having this prior to running samples or accepting them was discussed. This included whether not being able to report correctly would delay proper analysis or contaminate sample. Increased training on web application and data field requirement.
Data Reporting	Evaluator	Not enough detail was provided regarding data reporting during the initial conference call at 1530 on 10/17/11 requiring e-mails to be sent later in the exercise. Even with this, there were some questions about how and where to report results at the lab. More detailed EDR training than what was provided prior to the exercise. Provide more detailed information about results reporting requirements and how and where to report results during the initial contact with the support laboratories using appendix E as a guide.
Data Reporting	Evaluator	There were significant problems with the use of WebEDR. Either provide more detailed training on the use of WebEDR or develop a simpler means for reporting results.
Data Reporting	Evaluator	While the samples were being tested another incident command team member was learning the WebEDR application. The team member used the help hotline to get a better understanding of the program. The laboratory was not familiar with WebEDR but this barrier was overcome with good communication between the laboratory and the EPA help line. The laboratory should become proactive in training it staff on WebEDR. The information should be added to the disaster section of the laboratory standard operating procedure.
Data Reporting	Evaluator	The POC (Tony Holt, Environmental Lab Director) had various questions concerning reporting of data using WebEDR. The template needed to be modified to report total arsenic data. He used the support of Adam Jenkins at CSC to rectify any problems. After submitting data only one spacing problem was at issue and it was quickly resolved.

Category	Role	Comment
Data Reporting	Evaluator	Problems uploading to WebEDR. File needed dates and units reformatted. Chose wrong analyte list and program was looking for analytes lab wasn't required to run (SW846 6020A SAM?). Tried to start over, program didn't recognize that data had been entered. Clearer description of analyte names. Several for SW846 6020A.
Data Reporting	Evaluator	Units to report in; date field format. Lab needed to ask more questions during set up call. Assumed standard processes wouldn't require change. Send specifics to laboratory.
Data Reporting	Participant	Accomplishment: The chemist reported the results of the arsenic samples to the point of contact. (They were not called into Region 7 at that time as we had been told that play ended at 4:30.) Verbal results were phoned to Todd Campbell at 08:10 the next morning. We felt that the analysts did a good job analyzing the samples expediently.
Data Reporting	Participant	EPA - Web EDR not user friendly – should be easier – especially if it was a real emergency situation. Received excellent help from WebEDR Hotline.
Data Reporting	Participant	More clarity on the WebEDR import/final submission steps would be helpful. It was not clear how to finalize the imported file after viewing and correcting any problems in the file. -Required data values need to be provided or links provided for quick and clear access. Example: many of the templates referred to SEDD Valid Values lists. Providing the latest SEDD values or at least a link to them would have clarified many fields for the import.

Category	Role	Comment
Data Reporting	Laboratory	Even though we participated in WebEDR training, we ultimately had problems and delays in reporting or uploading our results using the provided template. Brian (the lab's LIMS administrator) who has had a lot of experience with data reporting formatting/transferring, indicated that between the several versions of the supplied templates and a couple areas of instructions, he had some difficulty with the uploads (see the issue/accomplishment section of this evaluation form). Templates and instructions should be clearly defined at least 2 months in advance of these exercises so that no last minute confusions can be introduced. Examples: The Project ID changed the day before of the exercise, Descriptions of fields to fill changed in the instructions a few days before the exercise. Realizing that in an actual emergency this is not possible, make the Project ID or other required data information AS CLEAR AS POSSIBLE. Something as easy as font size and bold will clear up a lot of confusion. -Data requirements should be clearly defined with examples. Examples: Expected results description should have included "spiked samples expected results include the amount of the spike AND the amount found in the original sample." (My opinion of requiring this level of data manipulation by the lab is below) Also, Date and Time fields should accept multiple formats of valid date and time. Any format that is recognized by Microsoft Excel should be allowed. Any data import procedure could reformat to one type during the import and errors could still be cleared up in data review. -Level of data manipulation on the part of the lab should be lessened. -More clarity on the WebEDR import/final submission steps would be helpful. It was not clear how to finalize the imported file after viewing and correcting any problems in the file. -Required data values need to be provided or links provided for quick and clear access. Example: many of the templates referred to SEDD Valid Values lists. Providing the latest SEDD values or at least a link to them would have clarified many fields for the import. Example: Requiring the lab to add spike amount and the amount found in the original sample is a waste of time. If the lab provides the original sample result, the amount of the spike, and the sample identifier for the original sample which was spiked all computations can be determined easily with simple formulas in the data import process. The more raw data provided by the labs means fewer errors.

Category	Role	Comment
Data Reporting	Laboratory	The lab's interactions with the WebEDR Help Desk/Hotline were very successful. This exercise was TestAmerica Denver's first experience with the ERLN 1t format. The lab received timely responses to its questions and the support needed to process and upload its WebEDR on-time. A list of the most common WebEDR issues that the participants had during the exercise could be compiled and used to create additional guidance documents to help the labs prepare their WebEDRs more efficiently.
Data Reporting	Laboratory	Instructions for the WebEDR came to the labs "on the fly" and in several installments while the samples were being analyzed. The lack of a complete specification for the EDD prevented smooth and efficient processing of the analytical results. The fact that some of the labs were implementing the WebEDR process for the first time also contributed to the confusion. The lack of complete specifications and guidance prior to the incident is not unexpected. However, the goal should be to have more of the details worked out and distributed prior to the incident. This would reduce the time spent by the labs working out issues with the help desk and IT.
Data Reporting	Laboratory Participant	Lab recently went live with a new LIMS system and we are still working out some minor bugs and trying to train analysts & new supervisors to perform the requisite transfer & review processes to upload into our own LIMS as well as into the Web EDR. Staff were not able to attend the training session and were unfamiliar with the software. In order to properly upload the data package without errors, the Lab Director sought technical assistance through a series of phone calls and e-mails. The assistance allowed a for a rapid turn-around, but ultimately this resulted in nearly a 16 hour delay in providing our analytical data to the system. Lab staff needs to train on the Web EDR system to gain confidence and understanding of how data reports need to be developed for clean uploading. Our LIMS can then be programmed to prepare export formats that are consistent with the needs of the Web EDR to minimize future delays. Additionally, procedures should be developed with the Laboratory's emergency response plan to facilitate data review, reporting & transfer when key personnel are unavailable.
Data Reporting	Laboratory Participant	Data Entry was difficult. Simply data entry process to reduce time requirements.
Data Reporting	Laboratory Participant	For the past several years, NEIC has been incorporating some of its analytical methods into a Laboratory Information Management system (LIMS) in order to streamline the data generation and review process. Although the process has been pain staking at times, many of the inorganic methods have been entered into LIMS and area being used on current projects. Therefore, when the exercise analysis was arsenic in water, an inorganic method was already in our LIMS system, which made the data reporting very easy. For organic analyses, we currently have a volatile organic analytes (VOAs) method in our LIMS. The next step would be to have the exercise analysis involve a VOA analysis and see how easy or difficult it would be to get data to the Web EDR.

Category	Role	Comment
Data Reporting	Laboratory Participant	Once the data requirements were conveyed to the project team, a group discussion initiated that involved the reporting process that is routinely by NEIC and the process being requested by the PRL. Specifically, the data reporting requirements used by NEIC were a little more involved than what was being requested by the PRL. The resolution to this discussion was if we could meet the time frame requested by the PRL, then doing the "NEIC" data reporting process would be fine, otherwise we would follow the PRL process in order to get data back to them in the requested timeframe.
Data Reporting	Laboratory Participant	Met with members of NEIC management in order to provide an exercise update. One comment that was made concerned NEIC's LIMS. Could the security measures/firewalls be deactivated such that the LIMS could be connected to the internet and data could be transferred directly from this system during an emergency event?
Data Reporting	Laboratory Participant	The WebEDR reporting of the water arsenic samples was not quite as straightforward, but with some technical assistance, we were successful in that data exchange as well. Montana still intends to look for efficiencies in our pre-analytic, analytic and post-analytic processes, such as having more staff working on accessioning, having one additional instrument validated for testing, and investigating a new LIMS that will allow interfacing and electronic data exchange.
Data Review	Evaluator	The data was reviewed by the primary analyst, but not evident if the instrument calibration and analytical results was second-level reviewed. Due to rushed nature of the work, it may have been assumed that detailed review was not necessary/possible, but this was not clarified during initial request for analytical work (refer to MSEL Step 17E).
Data Review	Evaluator	NEIC has all data reviewed by a qualified, independent analyst before it is released outside the laboratory. Require that data be independently reviewed by a qualified analyst before submission.
Exercise Action Items	Evaluator	During and after the conclusion of the exercise, the participants at WDA became more aware of the need for a standardized response plan and continuing training to implement it. It was discussed that we have an internal set of SOPs incorporating the plan on file in our facility. The lab also discussed setting up a workstation in the facility with the WLA-RP available, copies of the appendices, telephone, etc. to have a ready "command station" available for future events or exercises. Encourage frequent reinforcement of the Response Plan for all participating parties and a workstation devoted to the plan with communication device (telephone, computer, etc), log book and copies of various help sheets.

Category	Role	Comment
Exercise Conduct	Evaluator	Lab managers and evaluators had a clear guide of what to expect. However, even with a guide, the actual DOING of the exercise is important to see HOW the guide can best be utilized for an actual emergency. Perform a webinar “drill” without samples, but where the managers and directors use the handbook to respond to the exercise situations. Even with training and the opportunity to use the handbook, some items weren’t clear to me until after the fact. It was an “aha” moment that becomes clear when you actually perform the exercise which doesn’t always come with just “reading” materials.
Exercise Design	Evaluator	EEGs and MSELs were extremely thorough and well-planned.
Exercise Planning	Evaluator	EPA distributed excellent materials for me as an observer to study before the exercise. Every aspect of the exercise and plan was detailed and discussed during the training prior to Oct. 17th. Unfortunately, Lab Director, due to email communication difficulties, entered late into the exercise pre-planning phase. This accounted for some unfamiliarity with plan procedures. In addition, the initial briefing was missed due to this issue. Additionally, this observed did not realize that the MSELs might not occur in the order that they appeared in the handout materials. Please stress this point during evaluator training. Always plan a training session and pre-exercise briefing in the future for all participants. Send out written or electronic copies of all relevant documents.
Exercise Preparation	Evaluator	The lab could have used better in house training prior to the exercise. Maybe the lab could have gone over the WLA-RP better as a group instead of trying to learn it on their own. Also, reviewing and training of appendix C more closely may have helped the lab. Have lab do in house practice and training for situations like this exercise that might arise.
General	Evaluator	Laboratory Coordination went without any problems at all. The samples were received and logged into our LIMS system by the lab technician. The sample were then run by our Lab supervisor/QAO manager with the standard QC requirements. The progress of the analysis was tracked in LIMS until complete. A report was then generated by our Lab manager.
General	Evaluator	Although Coordination went very smoothly there were some hiccups with the reporting. The only other thing I can say would be a area for improvement would be more communication between lab staff. The samples came in and were run very swiftly without any problem with few hands. We did not receive any media phone calls.
Lab Certification	Evaluator	There was not a discussion about whether the lab was certified for the matrix/method/analyte combination in Missouri. Use of the checklists in Appendix B and C may have prompted this discussion.

Category	Role	Comment
Lab Certification	Evaluator	Management approval and proficiency or certification are not addressed on the help sheet for requesting analytical support but they are itemized in the checklist in appendix B. Make sure appendix B and C cover the same items or simply combine them.
Laboratory Procedures	Laboratory Participant	WaterOne Lab has no written protocols for events of this nature. Draft a response plan that defines critical components to more effectively respond to future events.
Laboratory Procedures	Laboratory Participant	The location of our command center (the Rocky Flats Conference room) appeared to be a good choice. Once all of the modifications were made (phone lines, internet connections, etc), it served well as our command center. It location was close to the shipping and lab areas, yet it didn't interfere with the daily operations of the NEIC. Keep the Rocky Flats Conference room as the NEIC incident command center.
Laboratory Procedures	Laboratory Participant	A request was sent to IT for the installation of 2 digital phone lines in the command center along with the activation of 5 computer ports and a printer. All was completed by 10 a.m. on 10/18/11. One concern was the cost of maintaining the phone lines at the conclusion of this exercise. NEIC management decided to keep these phone lines active after the exercise was concluded.
Laboratory Procedures	Laboratory Participant	We found that we were running to get supplies and need to have an Incident Kit stocked with supplies for the command center. We would stock the Incident Kit with paper, stapler, scissors, tape, post-its, pens, including a highlighter, whiteboard markers, pins, and a current phone list.
Notifications'	Laboratory	We briefly discussed that if this were a real event we would have contacted additional department management, department staff in the public drinking water branch (PDWB) and possibly the Department of Health and Senior Services. This communication would of course depend on direction from the IC and our upper management. Accomplishment: Discussed department protocol regarding notification of participation in this event (had it been real) and the expected communication. A good opportunity to review and practice these areas of responsibilities.
Overall	Evaluator	The Montana Public Health Laboratory was able to adequately perform sample collection, triage, packaging, shipping, handling, storage, and disposal of materials. The laboratory has sufficient staffing, training, equipment, supplies, organization and procedures to provide Quality Assurance/Quality Control to process the samples in a timely manner based upon risk/threat assessment. The department was able to adjust/expand staffing schedule and prioritize testing based upon sample type to accommodate exercise timelines and meet deadlines.

Category	Role	Comment
Overall	Laboratory	Overall, the exercise was well conceived and directed, very beneficial to improving our readiness for responding. Great test for our staff. Overall, communications were good throughout the exercise. Difficulties participants encountered were in the logistics of handling the samples (tracking and verifying the labels with the COC and the various log-in procedures to our system), some of the QC requirements in the long arsenic runs and of course in the difficulties in the reporting system. Practice might improve the reporting but it seemed to be one of the biggest obstacles to the smoothness of the exercise. Be interesting to see how we did on the accuracy of the results
Overall	Laboratory	General comments – Good exercise. Single point of contact for incident commander, public information officer would have been beneficial not only for the exercise but for a real incident. Linking the samples/specimens to one scenario would have been more realistic. Reporting was and is a problem. The laboratories would benefit with a standardized template for all agencies and reported to central location/site.
Overall	Laboratory	The overall response of our lab to this exercise went very well. Our lab staff from sample receipt to sample analysis to data review to sample reporting via Web EDR performed up to our expectations. They follow laboratory protocol, SOPs, method requirements and program/department policies. Though we had some communication issues (as stated in the issue/accomplishment section of this evaluation form) we were able to overcome them with help/clarification from the controller. This exercise provided us with continued growth in our ability to participate and assist as necessary. It was also a reminder to us of things that we will need to address and deal with during a real event. Internal communication is always something we look at and try to improve. This exercise was not exception and there were areas that could have been better. The most significant was the initial call from the controller. I was not in my office and the next in charge (Curt) took the call. He either did not hear or misunderstood the conversation. He thought the call was to start analysis. I cleared that up the controller upon my return to the office. This was only a few minutes later and no analysis were actually started. A suggestion (for our lab) to repeat back to the controller (or person on the call) may have avoided this misunderstanding.

Category	Role	Comment
Overall	Laboratory Participant	Prior to the exercise, the project team was established consisting of two organic analysts, two inorganic analysts, two people for the LIMS and Web EDR systems, a project manager overseeing the exercise and the principal chemist overseeing the chemical analyses. Once we knew what the samples were and the compounds that we were looking for, the inorganic analysts began developing their analysis scheme. Not only did they determine how the samples were to be analyzed, but they also set up data reviewers for their work. One of the organic analyst went back to doing his regular duties, but was "at the ready" if we needed any help, and the other organic analyst became logistical support for the command center. She "manned" the command center during the absence of the project manager. The project manager and principal chemist duties were merged into one person, and he became the point of contact for the lab and all communications (phone, e-mail, etc.) both external and internal went through him. He scheduled the morning update meetings, kept NEIC management up to date on the progress of the exercise, passed on any information that would come from the R8 POC or the R7 Incident Commander, and spoke with persons who were outside of the ERLN, i.e "Sybil Todd" from KSTV Channel 5 News. The LIMS and Web EDR personnel began setting up to the data from the inorganic analysts, as well as run test data sets through the Web EDR to get a feel for the data entry requirements and discovered some quirks in the Web EDR system. Many of their questions and concerns were address prior to loading and sending our lab data to ERLN database. Overall, once the exercise began, the NEIC team worked like a well oiled machine. Much of the NEIC system was set up according to the recommendations in WLA Response Plan. In addition, many of the team members had attended some kind of Incident Command training, so they were familiar with the IC setup. Documenting the results of this exercise could be used for future exercises or actual incidents. This way, many of the "lessons learned" won't have to be re-learned down the road. As a side note: the suggestions from the WLA Response Plan and the on-line training brought up other issues that would be help in case of a real incident. For example, we identified who at NEIC could do sample shipping, if needed. We also found out how an incoming package should be handled if it is believed to be of a chemical, biological or explosive nature.
QA/QC	Evaluator	QC was not discussed with FERN, but this is intrinsic to FDA analysis which is accepted by FERN.
QA/QC	Evaluator	Suggest a better clarification/communication on what sort of QC would need to be reported and what format for the reports. Suggest a mini QAPP document or make use of Appendix N in the WLA-Response Plan.
QA/QC	Evaluator	The NDDOH laboratory was party to preparation and use of quality assurance project plan for an arsenic in water study about 3-4 years ago and the protocol from this QAPP was followed for analysis of the exercise samples. The QAPP the NDDOH followed could be reviewed and serve as an example for appendix N (short form quality assurance project plan template for emergency response laboratory services for drinking water incidents) in the WLA-RP.

Category	Role	Comment
Roles and Responsibilities	Evaluator	There were many agencies involved. If one lab is doing samples for more than one agency, seeking out the names of each individual contact (depending on the questions the media had) can be confusing in the moment. It would be beneficial to have only one name to give as point of contact for media calls for all the agencies involved, rather than one each (CDC, MO, FDA, EPA, etc.).
Roles and Responsibilities	Evaluator	Upon determining the amount of work that would need to be accomplished, the EU leader requested an additional resource to assist. The R7 lab director immediately responded and instructed appropriate individual to report to the EOC at the TLC.
Roles and Responsibilities	Evaluator	If the IMT had any questions or need for support concerning this task, they could have called the R7 Lab. The IMT did not utilize the Lab Compendium and did not ask for assistance from the R7 Lab. EU did ask for an lab person to report to the EU to supplement the EU leader in performing needed tasks.
Roles and Responsibilities	Evaluator	Initial requests for exercise support would have exceeded the capacity and/or capability for the Montana Public Health Laboratory. These issues were resolved and the exercise scenario had been modified to where the surge capacity would be more realistic for the state's participation. As such, the Montana Public Health Laboratory established a command and control structure, appropriate staffing, organization, planning, supplies, and equipment to respond appropriately (capacity and capability) with the samples and scope of the incident. Relevant staff members should annually attend national LRN training to maintain knowledge, skills, and abilities in evolving methodologies.
Roles and Responsibilities	Evaluator	The IMT format included exercise artificiality on Montana points of contact for laboratory subject matter experts. Our standard procedure for all external agencies under the Incident Command System is to have a single point of contact for formal communications for task assignments, request for resources, support, reporting out, and for formal assistance. We still maintain informal communications methods to clarify questions and resolve issues. This is the common and preferred method to maintain unity of command within our ICS structure and maintain our authority within the larger LRN. Additionally, our staff is trained to utilize identified PIO procedures and liaison structures for information releases. According to observations, our lead public health representative responded to information requests based upon the National IMT in the prescribed manner (according to exercise guidance) but in a realistic situation, this information would also report through the Montana Governor's/Public Health Director's Joint Information Center. Organization and Planning - Utilize EPA established structure for notifications and response. DES Duty Officer, to SME and ICS of Laboratory personnel with one point of contact for all responses and requests for assistance for formal communications whether real or practice

Category	Role	Comment
Roles and Responsibilities	Evaluator	Montana was requested to have three scenarios in play at the same time. In tracking when the scenarios diverged/converged there were different POC's and timing in sample management. Since the laboratory is small and resources (equipment, personnel, and management) are shared, the utilization of three scenarios (water, urine, and FERN) that were all in the same MSEL at the same time were confusing for evaluators. Organization - Coordinate with player organizations on structure of MSEL, EEG, and SitMan in a draft format before committing to final exercise plan and documents. Also include references to target capability list or public health capabilities in exercise design and evaluation.
Roles and Responsibilities	Evaluator	The lab's POC took notes during the call regarding analysis requested, QA/QC, and reporting requirements. Lab's POC also followed internal checklist for setting up new projects. Following the call requesting analysis, lines of communication were still unclear as to who exactly was to function as the ASR, IC, and PIO on the R7 IMT. Also did not discuss lines of communication for after-hour situations, or when POC would be unable to come to the phone.
Roles and Responsibilities	Evaluator	NEIC and the Laboratory and Fields Branch do not have a permanent POC for emergency response.
Roles and Responsibilities	Evaluator	Some concern by staff that exercise POC for chemical incident was different than WLA-RP contacts. Internally staff discussed this as probably exercise artificiality. This brought into question the reasoning for quarterly POC info updating. Determine if chem POC was changed for changed for exercise play or if additional training on proper POC is needed.
Roles and Responsibilities	Evaluator	On at least two occasions, the incident commander was not readily available. This created a temporary information disconnect within the Incident Management Team. This could have been avoided is command would have been transferred to another team member. The laboratory should develop a written procedure as to how and when authority would be transferred to another team member. This plan should include having someone available to respond to after-hours calls.
Roles and Responsibilities	Evaluator	During initial contact and during exercise no back up POC was assigned. However, during the exercise this did not become an issue. The lab should implement use of the "Help Sheet for Requesting Analytical Support During An Emergency Response, Appendix C" and communicate with ASR regarding back-up POC.

Category	Role	Comment
Roles and Responsibilities	Laboratory	The point-of-contact had trained the customer service personnel at the back dock to react to delivery of hazardous/emergency packages but neglected to train personnel at the front desk. The front desk person responded properly despite the lack of training. the CHP needs to be updated and all front-line personnel need to be made aware of potential deliveries.
Roles and Responsibilities	Laboratory	The point of contact for both scenarios was the same person. Ideally we should have had 2 different people. This is merely an observation a condition that can't be changed at the present time. If our budget ever improves to the point that we can increase staff, perhaps this could be achieved.
Sample Analyses	Evaluator	Procedures were already in place for the testing, so that went very smoothly. However, the method doesn't call for a matrix spike duplicate. The reporting structure (the client) asked for it, so it was supplied. Let the laboratories know in advance if there are specific items necessary for reporting that aren't required by the method.
Sample Analyses	Evaluator	Standard sample retention time assumed. No special instructions provided or requested.
Sample Analyses	Evaluator	Upon notification of need to analyze drinking water and soil samples for arsenic, they recognized that the specific method needed had been archived because they rarely perform DW analyses. The archived SOP was reviewed and recertified so that it could be reactivated in the LIMS.
Sample Analyses	Evaluator	Analyses and data reporting was completed prior to requested completion.
Sample Analyses	Evaluator	Good ability and experience in conducting EPA 200.8 and linking internal QAP to method and reporting. Continue to cross-train laboratory staff to become authorized on EPA 200.8 so that redundancies are available in an emergency.
Sample Analyses	Evaluator	The laboratory analyzed the samples in a very timely manner. The ph and turbidity were taken for all samples. All the laboratory SOP's were followed correctly and the required QC was run and passed. The results and data were reviewed and validated before submitting. The samples were received at 8:30 in the morning, and the results were done by 12:00 pm.
Sample Analyses	Evaluator	The analysis portion of the exercise went very smoothly and quickly. Due to the rush nature of the analysis, issues with the instrument or analysis could have been a major problem for the lab. Capability, resources, and staff were all in place to allow the ICPMS analysis to be completed within the requested turn-around time.
Sample Analyses	Evaluator	For law enforcement purposes NEIC tries to confirm results by a separate technique when possible. The high level of sample was confirmed during this exercise. Ask for confirmatory analysis when possible.

Category	Role	Comment
Sample Analyses	Evaluator	Power outages disabled the cooling system on our ICP/MS. We had no alarm system and both instruments use the same cooling. NEIC needs to install an alarm system on critical mechanical components when there are no backups.
Sample Analyses	Evaluator	The laboratory was prepared to begin testing the samples as soon as they arrived in the metal's section of the laboratory. The instruments were calibrated and all the required standards were available for use. The majority of the evaluation steps were completed. The standard operation procedure could be enhanced by adding a disaster section which would include a check list to identify special handling requirements.
Sample Analyses	Evaluator	When it was discovered that there was not enough argon gas to start testing, the vendor was immediately contacted. Staff worked late on 10/19/11 to ensure completion of testing and submission of test results. Include argon gas and other gases on inventory to ensure enough supply to begin testing during a similar event.
Sample Analyses	Evaluator	Testing was delayed due to lack or argon gas. While reagents were inventoried prior to delivery of samples, argon gas was not. Central services maintains an inventory of extra cylinders and tanks in storage. Stocks of critical gases should also be added in preparation checklists. Minimum reserve levels should be established.
Sample Analyses	Evaluator	Within the context of the artificialities of the exercise the lab exhibited tremendous ability to adapt to both scripted and unscripted circumstances as the exercise progressed. When only partial information was provided or available the lab responded by utilizing standard operating procedures. The lab was initially unclear regarding whether the analyses were to be rapid or confirmatory in nature - the lab responded by enacting full QNQC standards to provide a confirmatory analysis and took actions to clarify the situation through contact with the incident management team (EPA R7). Continue to ensure that standard or routine operations are always followed as prescribed within the lab's SOP.
Sample Analyses	Evaluator	The lab adequately and appropriately carried out analyses according to SOP. When unclear regarding the confirmatory or rapid analysis that was needed, lab staff responded by utilizing full QNQC procedures to perform the analyses as described in the lab's SOP. Continue to ensure that all technicians are able to strictly adhere to SOP - this can be particularly relevant in the event of a criminal incident (regardless of whether lab personnel are aware of the nature of the contamination event or not).
Sample Analyses	Laboratory	Insufficient volume of sample was received to perform either a method required Matrix Spike or a Matrix Spike / Matrix Spike Duplicate. Additional sample volume should be provided to the laboratory for matrix spike analyses.

Category	Role	Comment
Sample Analyses	Laboratory Participant	Samples were processed fairly rapidly once the “hazard” was determined by CDC “screen”, even though we experienced support equipment problems (loss of argon due to malfunction of vendor supplied equipment). Information provided by the screen allowed us to focus on limited analyte range allowing us to use the volume of sample provided to complete the task in time.
Sample Analyses	Laboratory Participant	Laboratory personnel were able to easily accommodate the workload & time sensitive requirements within the laboratory. Tasks not related to the emergency response effort were readily transferred to other lab staff which allowed the primary analyst to focus on the special samples. The ability to focus on the response without distraction allowed the analyst to deal with equipment & supply problems that arose during the exercise that nearly prevented the Lab from completing the assigned analyses. Laboratory staffing is undergoing reorganization & adding personnel to support key areas (e.g., supervisors, field staff, etc.) Once this reorganization is completed, the Laboratory management team can then develop detailed processes in emergency response areas that do not rely solely on the experience & skills of a few key laboratory staff.
Sample Analyses	Laboratory Participant	There was just enough sample to analyze with requested QC. We would have had difficulty if we had to reanalyze any of the samples
Sample Analyses	Laboratory Participant	Suggest increased sample volume for future exercises
Sample Analyses	Laboratory Participant	Lab was adequately equipped to test for arsenic in a short turn-around time frame. The ICP-MS SOP should be updated to include the handling of emergency response samples.
Sample Disposal	Evaluator	Sample disposal and retention was fully communicated, however must of the communication came from our R8 POC.
Sample Disposal	Evaluator	There was not a discussion about sample retention or disposal. Use of the checklists in Appendix B and C may have prompted this discussion.
Sample Handling	Laboratory	The exercise has prompted the lab to review and improve its ability to handle law enforcement samples. Although the samples ultimately did not require handling as law enforcement samples, the initial request to follow the procedures outlined in Appendix I of the WLA-RP led the lab to discover that all of the requirements in Appendix I were not currently in place at TestAmerica Denver. The lab now has a chance to make modifications and implement the guidelines in Appendix I prior to receipt of real law enforcement samples in the future.

Category	Role	Comment
Sample Receipt	Evaluator	Upon notification of the receipt of the specimens, staff at the SD PHL immediately began the acceptance and processing the specimens. Their approach to this task was orderly and efficient. It was clear that training in this particular active was previously received.
Sample Receipt	Evaluator	Sample receiving staff needed to check the bottles to obtain the date of collection. Ensure that COC forms are legible before sending.
Sample Receipt	Evaluator	The samples that were shipped to the participating labs were accompanied only by a chain of custody form that listed the sample numbers and media. Numerous labs have operational procedures in place that require field screening information be provided with samples so that lab personnel can take precautions, as appropriate, on receiving and handling samples. Some labs would reject or hold samples that didn't have any field information until such information were obtained. It is understood that for an exercise, it might be a burden to include such information, but it is recommended this issue be given serious consideration for future exercises.
Sample Receipt	Evaluator	The Montana Public Health Laboratory was able to adequately perform sample handling, packaging, chain of custody, and transportation.
Sample Receipt	Evaluator	Sample receiving and handling was performed well. Samples were logged in and given an in house lab tracking number. Photographs were taken of the samples and sample packaging. Integrity of samples and packaging was observed, and sample temperatures were taken. It was noted that information was missing from the Chain of Custody. Lab entered the correct information as per the conference call with R7 IMT the day before. Chain of Custody followed the samples throughout sample analysis. Having the Chain of Custody filled out correctly.
Sample Receipt	Evaluator	When the controllers notified the lab's POC that the samples were shipped to the lab, the lab's POC received the samples at the designated sample receiving area. An internal sample receiving checklist was used to document sample integrity. The samples were logged in by a Project Manager following routine internal procedures and checked the samples against the provided COC. The lab has several sample receiving and login SOPs in place to document these procedures, as well as a checklist to document sample receipt information. Other labs may wish to use a similar sample receipt checklist.
Sample Receipt	Evaluator	The laboratory sample receiving staff followed well defined established procedures upon receipt of the samples. The laboratory created it own chain of custody so that it could track the samples in an efficient manner. There was clear communication as to which area the samples were to be delivered upon arrival. All steps except "notification of receipt" were completed. The laboratory could enhance its sample receiving process by using a checkbox or code to alert it staff as to when a "notification of receipt to sender" is necessary.

Category	Role	Comment
Sample Receipt	Evaluator	The laboratory received and logged in the samples under normal protocol. The analytical chemist performed the analysis and generated data under normal procedures. This process was done quickly and professionally with no problems. Prior to receiving samples, indentify who the client will be.
Sample Receipt	Laboratory	Samples were received in a cardboard box. An earlier email had led us to believe that the package would be a cooler. The WLA-RP shipping procedure should include that the shipper must accurately describe the appearance of the shipping container.
Sample Receipt	Laboratory	The samples were received via the west dock door into Room 001. The new chemical hood and biological safety cabinet were utilized. Receipt of potentially hazardous samples should be added to the CHP.
Sample Shipping	Laboratory Participant	Another question that was raised from management was soil permitting. Specifically, was the incident commander asked if the soils being collected were from a permit area that had some inherent chemical or biological contaminated that we needed to be aware of. We asked about the soil concern at the 10/17/11 conference call, and his response was, “Not that I am aware of.” However, he may not have understood what the soil permitting issue entailed.
Sample Tracking	Evaluator	Within minutes of receiving the sample, the analytical team began processing them. Equipment, standards and consumables were ready for sample arrival. QA/QC of data was processed by analyst and QA officer in a timely manner. Samples were not left unattended at any time during the analytical part of the exercise. If this had been an actual event, the lab participants discussed using the locked cabinet for sample storage. Ensure that all lab SOPs conform to EPA standard methods and contain provisions for receipt, analysis and reporting under WLA-RP guidelines.
Sample Tracking	Evaluator	Although also listed as a 'strength' in the section above, I would also suggest using this element as an area for improvement. Any analytical lab must constantly reinforce and exercise SOPs to all staff in the lab, and the ESP Lab demonstrated this skill effectively during the exercise. The danger with performing one's work as a routine, though, is that occasionally routine operations can lend to 'cutting' corners at times that it would otherwise not be significant. In the event of a criminal situation, though, all responses and actions of the lab are likely to be heavily scrutinized and even the most basic elements of the routine must be followed strictly and logged accordingly. It was not apparent whether or not the lab had available a camera, for instance, to photograph the samples (again this could be due to the artificiality of the exercise) upon receipt. If not it is recommended to incorporate this safeguard into the lab's SOP.

Category	Role	Comment
Sample Tracking	Evaluator	Samples moved smoothly thru the laboratory's process/procedures from sample log-in to reporting of data. No areas of concern regarding lab practices was noted. Lab checklists for log in and data review are very thorough.
Sample Tracking	Evaluator	Log in went smoothly. COCs reviewed, requirements entered in system, sample conditions checked, questions about dates asked - nothing assumed. A bit more information might be given during initial contact with the lab as far as requirements i.e., QC needed, reporting limits, etc. Lab was told to use "routine" procedures."
Training	Evaluator	Recommend a more robust training program for labs new to the EPA ERLN/WLA. Labs that already have well-established emergency response procedures could share best practices with new labs to make sure basic elements of communication and documentation are understood. Suggest that the lab's IT group become more involved with data deliverables for WebEDR. On a broader approach, suggest that the laboratory's parent organization share more information about the EPA's ERLN/WLA program, and develop a more standardized approach to addressing procedures/policies associated to working within the EPA's ERLN and WLA programs.
Training	Evaluator	Incident briefing held first thing Tuesday morning to share incident updates, concerns, and processes. Meeting was quick and efficient, included refresher on ICS and lab specific incident coordination protocols. Expand EOC training to staff, consider IMT like concept to support lab centric response operations.
Training	Evaluator	One supervisor demonstrated a working knowledge of the WLA-RP. This lack of knowledge created some confusion which delayed some decisions being implemented sooner. Provide the entire laboratory staff access to the WLA-RP document. Additionally, provide yearly training opportunities to the staff.
Training	Evaluator	Need to utilize appendix "C" or another form to remind staff of the process. Regular drills would be helpful in preparing management as to the steps that need to be followed. There wasn't a clear understanding as to how future communications would be handled.
WLA-RP Forms	Evaluator	Data review and validation are not covered in Appendix C but are itemized in the checklist in appendix B. Make sure appendix B and C cover the same items or simply combine them.
WLA-RP Forms	Evaluator	Sample disposal is not covered in appendix C but is itemized in appendix B. Make sure appendix B and C cover the same items or simply combine them.