LONG-TERM PERFORMANCE MONITORING OF METALS AND RADIONUCLIDES IN THE SUBSURFACE:
STRATEGIES, TOOLS AND CASE STUDIES

AGENDA

WEDNESDAY, 21 APRIL

7:00-7:30 AM SHUTTLE FROM HOTEL TO USGS

7:30-8:00 AM REGISTRATION AND COFFEE

8:00-8:10 AM OPENING COMMENTS
Laymon L. Gray (Co-Moderator), Florida State University/CISTEMS

8:10-8:20 AM WELCOME TO U.S. GEOLOGICAL SURVEY
Timothy L. Miller, U.S. Geological Survey

8:20-9:35 AM PLENARY SESSION

8:20-8:45 AM Metals and Radionuclides in the Subsurface: Risk-Based End States and DOE
Mark W. Frei, U.S. Department of Energy, Office of Environmental Management

8:45-9:10 AM Long-Term Monitoring – EPA Cleanup Program’s Perspectives
James Woolford, U.S. Environmental Protection Agency, Director-Federal Facilities
Restoration and Reuse Office

9:10-9:35 AM Overview, Objectives and Charge to Participants
Lorne G. Everett (Moderator), Shaw Environmental & Infrastructure, Inc.

9:35 AM - NOON SESSION I: AGENCY PRESENTATIONS: AGENCY PERSPECTIVES AND NEEDS TO MEET
LTM REQUIREMENTS

9:35-9:50 AM Implementing Long-Term Stewardship: A National Challenge
Barbara Pastina, Board on Radioactive Waste Management, National Research Council
of the National Academies

9:50-10:05 AM Department of Energy’s Legacy Management Program Development
Jeffrey J. Short, U.S. Department of Energy-Office of Policy and Site Transition

10:05-10:20 AM Break

10:20-10:35 AM Ground-Water Monitoring Perspectives and Needs
Thomas J. Nicholson, U.S. Nuclear Regulatory Commission

10:35-10:50 AM Department of the Interior’s Perspective on Long-Term Stewardship
Robert M. Wilson, U.S. Department of the Interior

10:50-11:05 AM USGS Research on Monitoring the Fate of Contaminants in the Unsaturated Zone
David W. Morganwalp, U.S. Geological Survey

11:05-11:20 AM State Regulators’ Perspectives on LTS Implementation and Technologies - Results
of an ITRC State Regulators Survey
Thomas A. Schneider, Ohio Environmental Protection Agency

11:20 AM-Noon Questions/Discussions

NOON-1:00 PM LUNCH (on your own – USGS Cafeteria)
1:00-5:00 PM  |  SESSION II:  BREAK OUT SESSIONS

**BREAKOUT 1:  MONITORING TOOLS AND TECHNIQUES**

*CHAIRS:*  
WILLIAM J. HAAS  
BRIAN B. LOONEY  
THOMAS A. SCHNEIDER

1:00-1:10 PM  |  Session Chairs Address Breakout Participants

1:10-1:40 PM  |  Sensors and Monitoring Systems for Long-Term Performance Monitoring - Three Perspectives  
*William J. Haas, Ames Laboratory, Iowa State University*

1:40-2:00 PM  |  Inventory of Performance Monitoring Tools for Subsurface Monitoring of Radionuclide Contamination  
*Horace K. Moo-Young, Lehigh University*

2:00-2:20 PM  |  Review of Technologies Developed or Utilized in Europe and the Commonwealth of Independent States (CIS) for Use in Long-Term Monitoring of Radionuclides and Heavy Metals in Water and Soils  
*Peter I. Richter, Budapest University of Technology and Florida State University*

2:20-2:40 PM  |  Utilizing Gas Phases and Other Innovations in Characterizing and Monitoring Metals and Radionuclides  
*Brian B. Looney, Savannah River Technology Center*

2:40-3:00 PM  |  Plume-Scale Testing of a Simplified Method for Detecting Tritium Contamination in Plants and Soil  
*Brian J. Andraski, U.S. Geological Survey*

3:00-3:20 PM  |  Break

3:20-3:40 PM  |  Physical Form of Lead on Small Arms Ranges: Transport and Treatment Implications  
*Steven L. Larson, U.S. Army Corps of Engineers*

3:40-4:00 PM  |  Monitoring Vadose Zone Contaminant Migration at a Radioactive Waste Subsurface Disposal Area  
*Larry C. Hull, Idaho National Engineering and Environmental Laboratory*

4:00-5:00 PM  |  Questions/Discussions

5:00 PM  |  DAY 1 ADJOURN

5:00 -5:30 PM  |  SHUTTLE TO HOTEL

5:30 – 7:00 PM  |  POSTER SESSION/RECEPTION (Days Hotel & Conference Center)

7:30 – 9:00 PM  |  Optional Group Dinner at Bertucci’s
1:00-5:00 PM  **SESSION II: BREAK OUT SESSIONS**

**BREAKOUT 2: LONG-TERM MONITORING STRATEGIES**

**CHAIRS:**  
Stephen J. Kowall  
Shun C. Ling  
Thomas J. Nicholson

1:00-1:10 PM  Session Chairs Address Breakout Participants

1:10-1:45 PM  Long-Term Monitoring of Radionuclides in Soils and Groundwater: Lessons Learned from Chernobyl  
Boris Faybishenko, Lawrence Berkeley National Laboratory

1:45-2:15 PM  Design, Performance, and Sustainability of Engineered Covers for Uranium Mill Tailings  
W. Jody Waugh, S. M. Stoller Corporation

2:15-2:40 PM  A Strategy and Case Study Example for Designing and Implementing Environmental Long-Term Monitoring at Legacy Management Sites  
Earl D. Mattson, Idaho National Engineering and Environmental Laboratory

2:40-3:05 PM  Monitoring Radionuclide Contamination in the Unsaturated Zone - Lessons Learned at the Amargosa Desert Research Site, NYE County, Nevada  
David A. Stonestrom, U.S. Geological Survey

3:05-3:20 PM  Break

3:20-3:45 PM  Long-Term Performance Monitoring of Metals and Radionuclides in the Subsurface at the Hanford Site  
Thomas W. Fogwell, Fluor Hanford

3:45-4:10 PM  Case Studies from DOE Closure Sites: Emphasis on Reduction of Risk and Requirements for Long-Term Monitoring in Site Closure Design  
Carol Eddy-Dilek, Westinghouse Savannah River Company

4:10-5:00 PM  Questions/Discussions

5:00 PM  **DAY 1 ADJOURN**

5:30 – 7:00 PM  **POSTER SESSION/RECEPTION (Days Hotel & Conference Center)**

7:30 – 9:00 PM  Optional Group Dinner at Bertucci’s
THURSDAY, 22 APRIL

7:00-7:30 AM  SHUTTLE FROM HOTEL TO USGS

7:30-8:00 AM  REGISTRATION AND COFFEE

8:00-10:00 AM  SESSION III: SUMMARY DISCUSSION OF BREAKOUT SESSIONS 1 AND 2

  8:00-9:00 AM  Summary/Discussion of Breakout 1

  9:00-10:00 AM  Summary/Discussion of Breakout 2

10:00-10:15 AM  Break

10:15-11:15 AM  SESSION IV: FACILITATED DISCUSSION OF ROADMAPS

  Developing a Long-Term National Vadose Zone Research Agenda
  Stephen J. Kowall, Idaho National Engineering & Environmental Laboratory

11:15 AM-12:30 PM  LUNCH (on your own – USGS Cafeteria)

12:30-2:00 PM  SESSION V: BIOREMEDIATION OF METALS AND RADIONUCLIDES: MONITORING STRATEGIES

  12:30-1:00 PM  Framework Approach for Monitored Natural Attenuation of Radionuclides and Inorganic Contaminants in Groundwater
  Ronald G. Wilhelm, U.S. Environmental Protection Agency

  1:00-1:30 PM  Techniques for Assessing the Performance of In Situ Bioreduction and Immobilization of Metals and Radionuclides in Contaminated Subsurface Environments
  Philip M. Jardine, Oak Ridge National Laboratory

  1:30-2:00 PM  Strategy and Techniques for Monitoring Bioremediation of Metals and Radionuclides in the Vadose Zone and Groundwater at Contaminated Sites
  Boris Faybishenko, Lawrence Berkeley National Laboratory

2:00-2:30 PM  QUESTIONS/DISCUSSION

2:30-3:00 PM  CLOSEOUT

3:00 PM  WORKSHOP ADJOURN

3:00-3:30 PM  SHUTTLE TO HOTEL AND DULLES AIRPORT