



# DOE Legacy Management's Objectives for High-Risk Sites

RemPlex

10 November 2021

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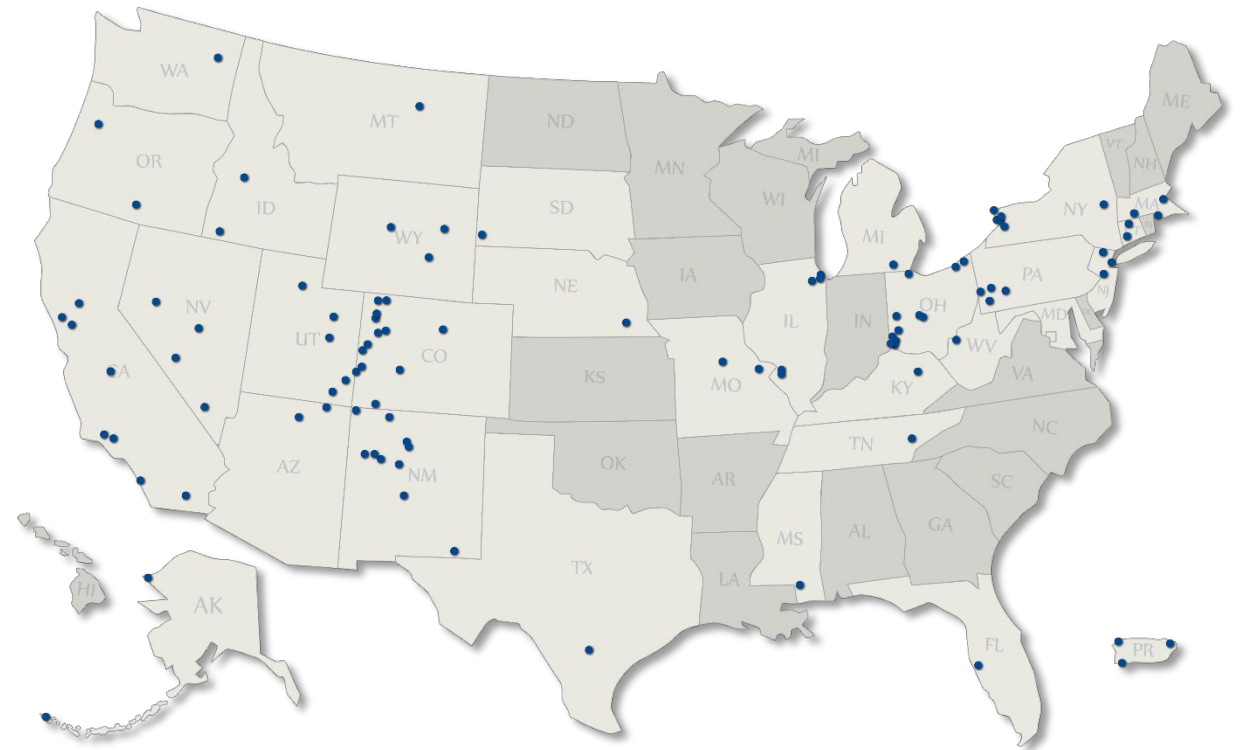
# Overview

- LM Mission
- Regulatory Complexity of LM Sites
- Memorandum of Understanding
- Network of National Laboratories for Environmental Management and Stewardship (NNLEMS) Organization
- Addressing High Risk Sites



# LM Mission

- The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for ensuring that DOE's post-closure responsibilities are met for sites that no longer have a continuing DOE mission.
- Goal 1 for LM is to “Protect human health and the environment.”
- In meeting this goal, LM is charged with meeting all regulatory requirements for the protection of human health and the environment while reducing long-term surveillance and maintenance costs.



# Regulatory Complexity of LM Sites

- CERCLA/RCRA
- UMTRCA
  - Title I Processing and Disposal Sites
  - Title II Disposal Sites
- Manhattan Engineer District/Atomic Energy Commission or Atomic Energy Act
  - D&D
    - decommissioned reactors, decontaminated buildings, and landfills
  - FUSRAP
  - Other
    - Nevada Offsites Program
    - Plowshare/Vela Uniform Program
    - Regulated by NWPA

## Abbreviations

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

RCRA = Resource Conservation and Recovery Act

UMTRCA = Uranium Mill Tailings Radiation Control Act

D&D = Decontamination and Decommissioning

FUSRAP = Formerly Utilized Sites Remedial Action Program

NWPA = Nuclear Waste Policy Act





# U.S. DEPARTMENT OF **ENERGY**

**Memorandum of Understanding**

**Among the Office of Legacy Management and**

**the Office of Environmental Management**

**utilizing the Savannah River National Laboratory**

**Concerning Collaboration to Enhance Legacy Cleanup and Long Term Stewardship**

**March 1, 2018**



# LM National Lab Network Participants

## Office of Science Laboratories

- 1 Ames Laboratory  
Ames, Iowa
- 2 Argonne National Laboratory  
Argonne, Illinois
- 3 Brookhaven National Laboratory  
Upton, New York
- 4 Fermi National Accelerator Laboratory  
Batavia, Illinois
- 5 Lawrence Berkeley National Laboratory  
Berkeley, California
- 6 Oak Ridge National Laboratory  
Oak Ridge, Tennessee
- 7 Pacific Northwest National Laboratory  
Richland, Washington
- 8 Princeton Plasma Physics Laboratory  
Princeton, New Jersey
- 9 SLAC National Accelerator Laboratory  
Menlo Park, California
- 10 Thomas Jefferson National Accelerator Facility  
Newport News, Virginia

## Other DOE Laboratories

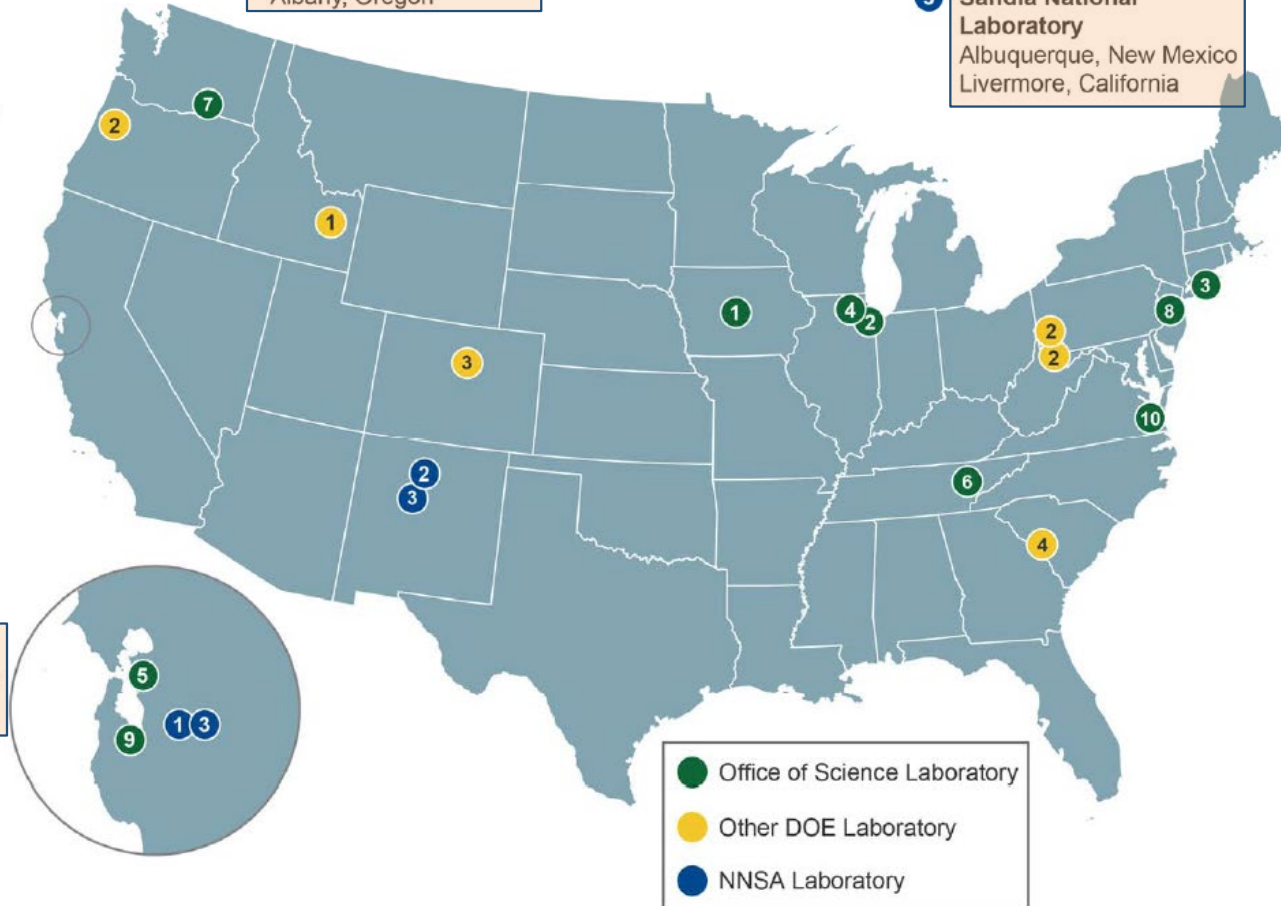
- 1 Idaho National Laboratory  
Idaho Falls, Idaho
- 2 National Energy Technology Laboratory  
Morgantown, West Virginia  
Pittsburgh, Pennsylvania  
Albany, Oregon

- 3 National Renewable Energy Laboratory  
Golden, Colorado
- 4 Savannah River National Laboratory  
Aiken, South Carolina

SRNL is LM's Designated Lead Lab

## NNSA Laboratories

- 1 Lawrence Livermore National Laboratory  
Livermore, California
- 2 Los Alamos National Laboratory  
Los Alamos, New Mexico
- 3 Sandia National Laboratory  
Albuquerque, New Mexico  
Livermore, California



# Network of National Laboratories for Environmental Management and Stewardship (NNLEMS) Organization

Ike White  
DOE-EM Sponsor  
Acting Assistant Secretary  
Office of Environmental  
Management



Ming Zhu  
DOE-EM Liaison



Vahid Majidi  
Chair  
Laboratory Director  
Savannah River National Laboratory



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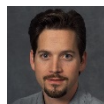
Robert Miklos  
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Eugene Yan  
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Ken Williams  
Lawrence Berkeley  
National Laboratory



Mavrik Zavarin  
Lawrence Livermore  
National Laboratory



Mark McCoy  
National Energy  
Technology  
Laboratory



John Bargar  
SLAC National  
Accelerator  
Laboratory





# Addressing High Risk Sites

# Risk Factors



- **Human Health Risk** – the possibility that human receptors could be exposed to unacceptable levels of site-related contamination
- **Stakeholder Concerns** – the likelihood that protectiveness of a given site could be affected or questioned in some way based on input from stakeholders (individuals or organizations)
- **Regulatory Risk** – the likelihood that a site will not attain compliance goals (e.g., groundwater cleanup is ongoing) or that compliance will not be maintained in the future
- **Institutional Control Risk** – an assessment of the effectiveness of an IC to maintain protectiveness



# LM 2021 Risk Index – Top 10

## LM Long-Term Stewardship (LTS) Index - 2021 Current LM Sites

LM Site Information		Site Factor Inputs					LTS Index
LM Site Name	Regulatory Driver/ Programmatic Framework	Human Health Factor	Stakeholder Factor	Regulatory Factor	Institutional Control Factor	Site Complexity Factor	LTS Index
Tuba City, AZ, Disposal Site	UMTRCA Title I	High	High	High	High	Category-3	1.00
Shiprock, NM, Disposal Site	UMTRCA Title I	High	High	High	High	Category-3	1.00
Bluewater, NM, Disposal Site	UMTRCA Title II	High	High	High	High	Category-2	0.97
Monument Valley, AZ, Processing Site	UMTRCA Title I	Medium	High	High	High	Category-2	0.89
Slick Rock, CO - Rollup (3 Components)	UMTRCA Title I	Medium	Low	High	High	Category-2	0.79
Naturita, CO, Rollup (2 Components)	UMTRCA Title I	Medium	Low	High	High	Category-2	0.79
Weldon Spring, MO - Rollup (5 Components)	CERCLA/RCRA	Medium	Medium	High	Low	Category-3	0.78
Mound, OH - Rollup (8 Components)	CERCLA/RCRA	Medium	Medium	High	Low	Category-3	0.78
Gunnison, CO - Rollup (2 Components)	UMTRCA Title I	Medium	Low	High	Medium	Category-2	0.74
Riverton, WY, Processing Site	UMTRCA Title I	Low	High	High	Low	Category-2	0.72



# High Risk Site Working Groups

- Develop a Recommendations Report for 5 of the top risk sites from the LM Risk Index
  - Expanded to an additional 3 of the top risk sites from the LM Risk Index in 2021
- Report Expectations – Recommendations shall:
  - Directly address the high risks from the LM Risk Index
  - Be a consensus of LM/LMS/NNLEMS
  - Be actionable recommendations
- Questions for the Working Groups
  - What are we doing that we should keep doing?
  - What are we doing that we should stop doing?
  - What are we not doing that we should be doing?



# High Risk Site Participants and Observers

## ■ Participants

- LM
- LMS
- NNLEMS

(1) Shiprock, NM

(2) Tuba City, AZ

(3) Bluewater, NM

(4) Monument Valley, AZ

(5) Fernald, OH

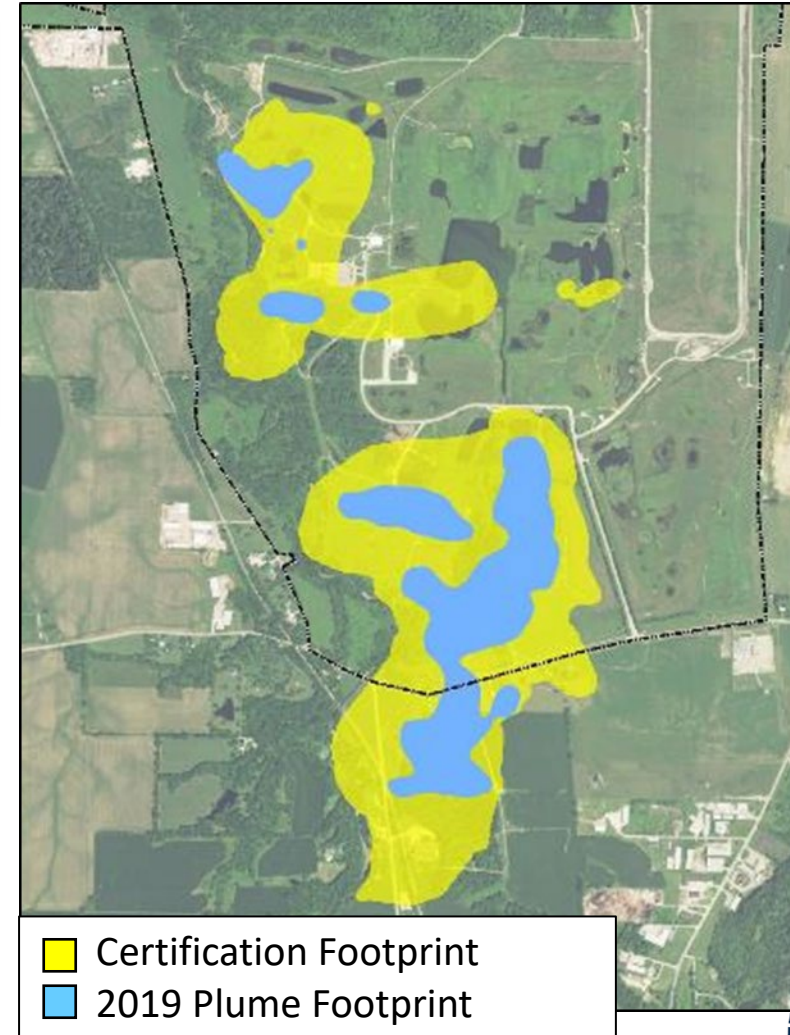
## ■ Observers and sometimes participants

- US NRC (1,2,3,4)
- US EPA (4,5)
- Ohio EPA (5)
- USACE (3)
- Hopi Mining & Mineral Resources UMTRA Program (1)
- Navajo Nation AML/UMTRA (1,2,4)
- Navajo Department of Water Resources (4)
- Navajo Nation EPA (1,2,4)
- Shiprock Chapter President (1)
- Tuba City Chapter President (2)
- Navajo Nation Council Delegate (1,2,4)
- Dennehotso Chapter President (4)
- Oljato Chapter President (4)
- University of Arizona (4)



# High Risk Sites with Working Groups

- 2019: 5 Sites
  - Shiprock, NM
  - Tuba City, AZ
  - Bluewater, NM
  - Monument Valley, AZ
  - Fernald, OH
- 2021: 3 Sites Added
  - Weldon Spring, MO
  - Rifle Disposal Cell, CO
  - One More?



Fernald, OH, OU 5 Groundwater



# Questions?

