



U.S. DEPARTMENT
of **ENERGY**

Office of Legacy Management

PROGRAM UPDATE

APRIL-JUNE
2026

4

*Groundwater at
Core of LM Mission*

6

*Protection Strategies
Evolve Over Time*

10

*Refined Approaches
on Navajo Nation*

GROUNDWATER PROTECTION

Director's Corner



Groundwater Protection at the Core of LM's Mission

The Office of Legacy Management (LM) has six mission goals, and our pursuit of them is defined in large part by the first: to protect human health and the environment.

A critical component of that goal is the work LM performs to protect a fundamental and cherished resource — groundwater. LM manages 103 sites across the United States and Puerto Rico, a diverse portfolio with complex environmental dynamics that require careful, ongoing attention to groundwater conditions at many locations.

LM works continuously to protect site remedies, and at many sites, that effort includes data collection, modeling, analysis, and other technical expertise. These activities are essential to understanding groundwater conditions and how they change over time, allowing us to make informed, science-based decisions.

In this edition of *Program Update*, we take a closer look at LM's groundwater program, including:

- An overview of LM's programmatic approach to groundwater protection and why a comprehensive strategy is needed to address the varied nature of our work
- An explanation of the evolution of groundwater protection, with historical perspective on how remediation strategies have advanced over time
- A breakdown of LM's major groundwater projects, including examples where coordination with partners and communities has enhanced or maintained protectiveness
- A summary of LM's technical expertise and core competencies, including site characterization, development of conceptual site models, groundwater modeling, and other critical technical work

Groundwater protection has been — and will continue to be — a long-term commitment for LM. It is central to our mission to safeguard human health, environments, and public properties at former atomic defense sites.

Regardless of how conditions may change across our sites, that commitment will remain constant.

Warm regards,

A handwritten signature in black ink that reads "Carmelo". The script is fluid and cursive.

Carmelo Melendez



*Safeguard human health, environments, and public properties bound
to the nation's postclosure responsibilities at former atomic defense sites.*

Welcome to the April-June 2026 issue of the U.S. Department of Energy Office of Legacy Management **Program Update**. This publication provides a status of activities within LM.

Please direct all comments and inquiries to media@lm.doe.gov.

Inside This Update: Contents

Director's Corner // 2

LM's Groundwater Program
Paves Way for Long-Term Environmental Protection ////////////// 4

The Evolution of Groundwater
Protection and LM's Continued Mission ////////////// 6

LM Scientists Refining
Approaches to Groundwater at Navajo Nation Sites ////////////// 10

LM's Technical Groundwater Work
a Key to Safeguarding Human Health ////////////// 12

A Community Success Story
at the Riverton Processing Site in Wyoming ////////////// 14

Bronco Site Reclamation
Project Successfully Completed ////////////// 16

Oral History Webpage
Offers Glimpses Into the Past ////////////// 18

Enhanced Website Brings to Life
Story of Rocky Flats Site in Colorado ////////////// 20

LM's Nicole Olin Promoted to
Lead Environmental, Safety, Health, and Quality Programs // 22

LM's Kate Whysner Promoted to
Lead Long-Term Stewardship Team ////////////// 24

LM, Partners Showcase
Range of Expertise at Waste Management Symposia ////////////// 26



GOAL ONE
Protect human health
and the environment.



GOAL TWO
Preserve, protect,
and share records
and information.



GOAL THREE
Safeguard former
contractor workers'
retirement benefits.



GOAL FOUR
Sustainably manage
and optimize the use
of land and assets.



GOAL FIVE
Sustain management
excellence.



GOAL SIX
Engage the public,
governments, and
interested parties.



LM's Groundwater Program Paves Way for Long-Term Environmental Protection

Program brings cohesive, programmatic approach to improving management of groundwater contamination

Groundwater is one of the most important resources the Office of Legacy Management (LM) helps protect. Across LM sites, groundwater conditions resulting from decades of former uranium processing and atomic defense activities vary widely. When LM Director Carmelo Melendez joined LM in 2015, he championed a systematic and unified approach to manage all LM's groundwater projects.

LM's groundwater program was established to meet that need.

"The groundwater program was created so we could put all LM sites with groundwater issues under one umbrella to manage them more efficiently as a singular entity," said LM Support Partner (LMSP) Director of Technical Services Al Laase.

Before the program officially launched in August 2024, managing residual groundwater contamination was mostly decentralized. Each site typically managed issues independently, using different approaches to plan projects,

monitor efforts, and make decisions. While this did meet specific site needs and provide flexibility, it also created challenges, making it harder to prioritize projects and adequately allocate labor and resources.

The groundwater program changed that by introducing a cohesive, programmatic approach.

"Essentially, when the program was getting started, we had to ask — which sites had a bigger risk and needed to be prioritized?" said Laase.

Instead of looking at sites independently, the groundwater team now has the full picture. This helps them effectively plan and focus work where it will have the greatest impact.

"When you take a unified approach, you can step back and see everything," said Laase. "That helps us focus on where we can reduce risks, prioritize our resources, and make informed decisions about where we should invest resources for the greatest benefit."

Our team's strength comes from diverse expertise.

— Anthony Farinacci

A major benefit of the program is how it strengthens risk-based decision making. Groundwater represents a significant portion of LM's overall risk, so understanding that risk across LM's entire portfolio is key..

"I can say the groundwater program is instrumental when it comes to using data to make decisions so we can reduce overall risks," said LM Groundwater Program Manager Meghann Hurt. "We have confidence in our decisions because we have such a robust, data-driven system. Our environmental stewardship efforts aren't just compliant and therefore effective — they're also forward thinking."

The program is supported by a multidisciplinary team of experts, including hydrogeologists, data scientists, engineers, geochemists, and field staff. Together, they bring a range of perspectives that lead to stronger decisions and promote sharing best practices across sites. They also apply solutions that are appropriate, effective, and consistent.

"Our team's strength comes from diverse expertise," explains LMSP Groundwater Program Manager Anthony Farinacci. "By bringing together hydrogeologists, modelers, and data specialists, we can tackle even more complex groundwater challenges with a shared understanding, often finding more innovative and efficient solutions."

The groundwater program builds on the previous foundational efforts established by a key process used at sites regulated by the Uranium Mill Tailings Radiation Control Act (UMTRCA) called the Groundwater Compliance Action Plan, or GCAP. These documents are used to evaluate groundwater conditions and select specific compliance strategies needed to meet UMTRCA regulatory requirements.

While GCAPs are vital for UMTRCA sites, the groundwater program uses this systematic planning and consistent decision-making process and applies it within the LM program at sites with groundwater challenges, regardless of which regulatory program they fall under.

The groundwater program, however, is much broader than any single document or regulatory framework; it's a long-term commitment to ensuring standard of care expectations are met for all groundwater projects.

"The groundwater program brings structure to how we manage one of our most complex challenges and responsibilities," said Melendez. "It also ensures we are safeguarding human health and environments today while planning ahead for the future long-term stewardship these sites require."

Groundwater remediation and protection aren't overnight tasks. In many cases, it takes decades of monitoring and evaluation to confirm that contaminant levels are decreasing. LM will continue monitoring to make sure residual contamination trends downward over time and compliance goals are met.

Today, the groundwater program manages dozens of active projects and continues to evolve as new data and priorities emerge. However, with this program, LM has a clear and consistent path forward for managing groundwater across the complex.

Ultimately, the program is about protecting a resource that connects us all. By using a structured, coordinated approach, LM can address today's challenges while making sure that these sites remain safe for many generations.



Shiprock, New Mexico, Disposal Site



The Evolution of Groundwater Protection and LM's Continued Mission

A Geoprobe takes groundwater samples at the Rifle, Colorado, Disposal Site.

For the Office of Legacy Management, safeguarding groundwater is paramount. This indispensable natural resource not only supplies drinking water to a significant portion of the U.S. population, but also underpins agriculture, industry, and vital ecosystems. Understanding how groundwater is protected and remediated is crucial for LM to effectively manage its diverse portfolio of sites and fulfill its long-term stewardship mission.

Groundwater was largely an overlooked resource until the 1970s. The founding of the U.S. Environmental Protection Agency (EPA) in 1970 marked a pivotal shift, initiating a coordinated national approach to environmental protection. "The formation of the EPA was a critical step in establishing a unified national approach to environmental challenges, directly impacting how we at LM approach our stewardship today," said LM's William Burns, supervisory physical scientist.



Our goal is not just compliance, but proactive, sustainable stewardship.

— William Burns

Driven by critical concerns over drinking water quality, the Safe Drinking Water Act (SDWA) of 1974 empowered EPA to set primary standards, including for radionuclides. This led to a landmark for LM's future work: EPA's 1977 Uranium Fuel Cycle Standard. This was the first U.S. radiation standard based on explicit health risk estimates, setting vital exposure limits that would later influence cleanup goals at many of LM's sites.

Simultaneously, March 1974 Congressional hearings brought to light widespread contamination at uranium mill tailings sites across the nation. Collaborative investigations involving the U.S. Atomic Energy Commission (a precursor to the U.S. Department of Energy, or DOE), EPA, and states where sites were located revealed significant environmental degradation and improper use of tailings, such as their use in private construction projects. This advocacy directly led to the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978. UMTRCA was the first EPA program to mandate long-term management (1,000 years) and establish specific groundwater standards for radionuclides. Crucially, it introduced the concept of institutional controls to manage remediation costs — a principle foundational to LM's stewardship today.

"UMTRCA's foresight in mandating long-term management and the use of institutional controls laid the groundwork for LM's core mission," added Burns.

By the mid-1980s, groundwater contamination was a recognized national issue with a growing understanding of its complexity. EPA introduced a tiered approach to protection based on groundwater's value and vulnerability (Class I, II, and III). This policy emphasized prevention over costly cleanups and underscored that protection should align with the groundwater's highest beneficial use.

EPA's authority expanded significantly through acts like the Clean Air Act Amendments of 1977 and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly called Superfund. Radiation risks began to be evaluated against the same cancer risk criteria as chemical contaminants, ensuring a consistent approach across mixed-waste sites.

Remediation approaches also matured, shifting from simple pump-and-treat systems to more diverse in situ methods and monitored natural attenuation. This reflected an "adaptive management" approach, actively optimizing remedies over time.

Established in 2003, LM was created specifically to manage the long-term stewardship for former DOE sites where initial cleanup is complete, but ongoing management (often involving groundwater) is required. LM's mission is to protect human health and the environment by managing DOE's postclosure responsibilities, ensuring that the legacy of earlier operations does not pose future risks.

LM operates each of these sites under its own regulatory driver. Regulatory drivers are a set of laws and standards that guide the management and cleanup process of a site.

Sites fall under different drivers depending on how the land will be used, the type and level of contamination, and the risks they pose to human health and the environment. For example, some LM sites are managed by CERCLA and the Resource Conservation and Recovery Act (RCRA) and some by UMTRCA.

- **CERCLA** and **RCRA** sites were radiologically or chemically contaminated by federal uranium ore milling, processing, research, or weapon manufacturing. Complex groundwater contamination (both radionuclides and chemical hazardous substances) at CERCLA sites requires ongoing remedial actions like pump-and-treat, monitored natural attenuation, and containment.
- Sites under **UMTRCA Title I** were associated with former privately operated uranium ore-processing locations. The remediation of these sites created disposal cells that encapsulate uranium mill tailings and associated materials. Both passive and active remedial strategies are used at UMTRCA Title I sites.
- **UMTRCA Title II** sites were commercially owned and regulated under a U.S. Nuclear Regulatory Commission (NRC) license, and the owner must clean up the site — using procedures approved by NRC — and provide funding to offset some costs of site transition to LM.

Many former uranium mill tailings sites require institutional controls and long-term groundwater monitoring along with inspections and maintenance of engineered disposal cells. LM's work directly implements UMTRCA's mandate for perpetual care.

A group of five LM staff members, including men and women, are wearing hard hats and high-visibility safety vests, walking through an industrial site. They are surrounded by large, light-colored cylindrical storage tanks and various pieces of equipment. The ground is dry and dusty. The staff are engaged in conversation as they tour the facility.

LM staff tour the Water Treatment Unit
conexes at the Shiprock, New Mexico,
Disposal Site.

Timeline | of Groundwater Protection

1970:

President Richard Nixon establishes EPA on July 9.

1980:

CERCLA is enacted, providing the framework for cleanup activities at numerous sites LM later inherited.

1974:

SDWA is passed, establishing fundamental drinking water quality standards relevant to LM's protection goals.

1983:

EPA issues 40 Code of Federal Regulations (CFR) Part 192 (UMTRCA standards), providing specific regulatory requirements for LM's UMTRCA sites.

1970s

1980s

1977:

EPA promulgates the uranium fuel cycle standard, setting key radiation exposure limits for LM's future assessments.

1984:

EPA introduces tiered groundwater classification in its Groundwater Protection Strategy, guiding LM's approach to differential protection based on resource value.

1978:

UMTRCA is passed. This act is a cornerstone for many of LM's sites, initiating the concept of long-term federal responsibility for mill tailings.

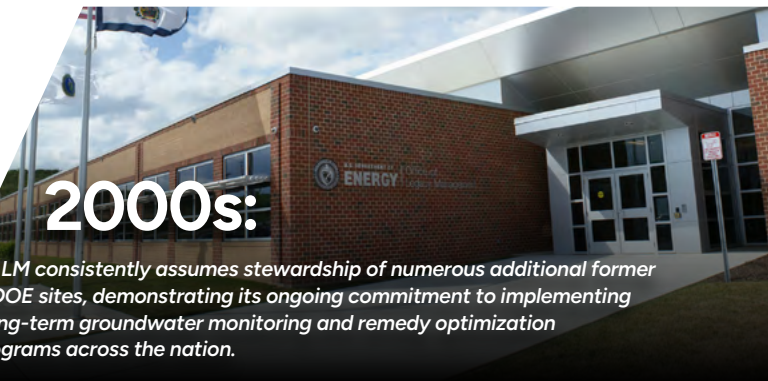
1985:

EPA promulgates 40 CFR Part 191 for high-level waste, spent nuclear fuel, and transuranic waste, establishing 10,000-year containment requirements crucial for future LM-managed waste sites.



1993:

EPA revises 40 CFR Part 191, requiring SDWA maximum containment level compliance and reinforcing long-term protection goals for LM.



2000s:

LM consistently assumes stewardship of numerous additional former DOE sites, demonstrating its ongoing commitment to implementing long-term groundwater monitoring and remedy optimization programs across the nation.



1997:

EPA produces the Multi-Agency Radiation Survey and Site Investigation Manual, providing standardized survey protocols for site characterization and verification that LM's technical teams will later use.



U.S. DEPARTMENT
of **ENERGY**

Office of Legacy Management

2003:

DOE establishes LM. Its initial site portfolio includes 33 sites across 17 states, all managed under different regulatory drivers including CERCLA, UMTRCA, and more.

LM exemplifies modern adaptive management. "We engage in continuous monitoring, rigorous data analysis, and regular evaluation of remedy performance. This comprehensive approach recognizes the persistent nature of groundwater contamination, requiring flexible strategies that account for evolving science and technology while remaining steadfast in protecting receptors and potential future groundwater users," said Burns. "Our goal is not just compliance, but proactive, sustainable stewardship."

The history of groundwater protection is a testament to continuous learning and adaptation, directly shaping LM's mission and operational strategies. From early fragmented efforts to comprehensive strategies and regulatory frameworks, EPA, NRC, stakeholders, Tribal partners, and state agencies have collectively safeguarded this critical resource. For LM, this rich historical context, coupled with understanding evolving remediation technologies and regulatory principles, forms an invaluable foundation for its long-term stewardship mission.

Ongoing:

LM continues to adapt its groundwater monitoring and remediation strategies based on evolving science, technology, and regulatory guidance, ensuring its stewardship remains at the forefront of environmental protection. LM established its groundwater program to better manage those sites.

"We use this knowledge to refine our strategies, ensure compliance, and effectively manage the environmental legacy entrusted to LM's care. Our commitment to long-term stewardship is unwavering, built upon a rich history of environmental progress and a dedication to continuous improvement that defines LM's approach," Burns added.



LM Scientists Refining Approaches to Groundwater at Navajo Nation Sites

The water bottle on David Von Behren's desk bears a simple message: Water is life.

In the Navajo (Diné) language, the message is *tó éí iiná*. It's an acknowledgment of the sacred nature of water that transcends biological necessity. Water — perhaps obviously — is the single most important connection between all living things.

In the deserts of the Southwest — home to the Navajo and many other native Tribes — water takes on special significance because of its relative scarcity. Von Behren, who is the Office of Legacy Management's supervisor of the Education, Communication, History, and Outreach team and who spent much of his life in Arizona, knows that water dominates the discussion in one of the driest places on the continent.

"Water is a gathering point that brings us together to both share and protect it for everyone's benefit," he said.

Scientists and engineers are working at LM's former uranium-processing sites on the Navajo Nation to develop effective groundwater compliance strategies to protect human health and the environment. The sites are all managed under the Uranium Mill Tailings Radiation Control Act (UMTRCA), a federal law passed in 1978 to address the effects of uranium processing during the Cold War.

Because groundwater is the primary pathway for contaminant exposure for both people and the environment, LM places a high priority on minimizing residual groundwater contamination to the greatest extent possible.

LM, EPA, and Tribal partners tour the Church Rock site in New Mexico, which is anticipated to transition to LM in 2038.



A stop on the Church Rock site tour.

Toward that end, LM uses different methodologies at three UMTRCA sites on Navajo land:

📍 Tuba City

The original remediation approach at the Tuba City Disposal Site in Arizona involved pumping contaminated groundwater from below the surface (the Navajo Aquifer) and removing contamination from the influent stream via a treatment system. The treated water was returned to subsurface by way of an infiltration trench. Due to maintenance issues, the treatment system was suspended. Extraction well discharge was then pumped directly to the evaporation pond, but at a reduced rate. LM recognized that the decrease in treatment volumes resulted in a less effective treatment strategy relative to the original design.

Through a combination of advanced site characterization techniques, hydrologic and geochemical evaluations, and numerical modeling, LM is evaluating different remedial efforts to improve the approach and update the Groundwater Compliance Action Plan (GCAP).

📍 Monument Valley

LM is developing a GCAP to address residual groundwater contamination at the Monument Valley Processing Site in Arizona. Phytoremediation pilot studies evaluated the potential benefits of a remedy, as well as site characterization and groundwater modeling efforts to support the development of a GCAP. LM is working to address groundwater contamination issues, and a draft GCAP is scheduled for completion by fiscal year 2028.

📍 Shiprock

The remediation approach at the Shiprock Disposal Site in New Mexico involves pumping contaminated groundwater from the subsurface to an evaporation pond for treatment. Because the evaporation pond liner has reached the end of its useful life, LM is currently constructing a new treatment system to replace the evaporation pond.

The benefits of the new treatment system include returning treated water to the San Juan River watershed. While LM is constructing the new treatment system, it is also evaluating the long-term remedy using information collected from site characterization activities and numerical modeling results. This information will be used to update the GCAP.

LM will take responsibility for the groundwater at the Church Rock site upon transition as well as the property itself.



“

Water is a gathering point that brings us together to both share and protect it for everyone's benefit.

— David Von Behren



LM's Technical Groundwater Work a Key to Safeguarding Human Health

Drilling work at the Rifle, Colorado, Disposal Site, 2024.

Imagine a silent, unseen battle unfolding beneath our feet, a legacy from a time when nuclear science was new and its environmental impacts less understood. This is the challenge faced by the Department of Energy Office of Legacy Management. Its mission? To protect communities and our planet from legacy contamination in the subsurface, particularly in the complex dynamics of groundwater.



Every site is unique, and our solutions are custom designed to address each one's specific challenges.

— Mary Young

"Our work is about transforming challenges from historical actions into a safer future, one site at a time," said LM Site Manager Mary Young.

At the core of LM's efforts is the Groundwater program, composed of a dedicated, expert team acting as environmental stewards. This diverse group includes geologists, hydrogeologists, geochemists, data analysts, and risk analysts, each bringing specialized knowledge to the complex challenges of legacy sites.

They collect and analyze site characterization data — the essential puzzle pieces of a site's geological, hydrological, and chemical makeup. This crucial information forms the bedrock for building conceptual site models (CSMs), which help to visualize the invisible pathways of contamination, depicting how contaminants move through the subsurface environment.

A CSM helps LM understand a site by mapping out where groundwater and contaminants are, how much there is, and how they move. It shows the journey of contaminants — their starting points, how much there is, how quickly they spread, how long they last, and the paths they take. Essentially, it's a visual guide that explains the natural processes (physical, chemical, and biological) affecting how water flows underground and how pollution travels.

The CSM is crucial because it directs how LM collects data, creates computer models, assesses risks, and decides on cleanup actions. By clearly showing how groundwater and contaminants behave, the CSM provides the essential foundation for creating successful plans to meet environmental regulations.

With this understanding of the site's unique characteristics, LM can create numerical flow and contaminant transport models that simulate groundwater flow and how contaminants are likely to spread through the subsurface.

"Understanding what's happening underground by using site data and a clear conceptual model is the first step," explains Young. "Our models allow us to see the unseen, predict the future pathways of residual contamination, and develop defensible compliance strategies by testing different scenarios and potential impacts."

Beyond just understanding, LM's commitment to innovation is evident in its advanced long-term monitoring. This involves using cutting-edge sensors and data systems for continuous monitoring, allowing LM to detect subtle changes, predict future trends, and ensure the ongoing safety of people and the environment.

"We're not just reacting; we're proactively monitoring with the best available technology to ensure long-term protectiveness and gather the data needed for ongoing compliance," added Young.

Then comes the critical phase of remedy design, evaluation, and optimization. When residual contamination is identified, LM's engineers and scientists don't apply generic fixes. Instead, they craft tailored solutions using advanced tools such as numerical groundwater flow and transport models and geochemical reactive transport models. These models are used to simulate different compliance strategies,

evaluate their impacts and effectiveness, and forecast long-term outcomes to ensure the chosen remedy is both efficient and protective. This is an adaptive process, with predictions verified against monitoring data and adjustments made if needed to ensure that remedies remain effective and efficient, safeguarding our future from the echoes of the past.

"Every site is unique, and our solutions are custom designed to address each one's specific challenges, always with an eye on adaptive management and robust compliance," said Young.

These sophisticated approaches yield tangible results. At one site, simulations, built on comprehensive site data and a strong CSM, helped secure a critical waiver with the U.S. Environmental Protection Agency, demonstrating a thorough understanding of the site's unique challenges and a defensible strategy. In another instance, modeling guided the optimal location of additional monitoring wells. And at a former disposal site, LM's models were essential for designing an extraction and monitoring well network.

"These real-world successes are a testament to the rigor and dedication of our technical teams, who use every piece of information and every tool at their disposal to ensure compliance and protect human health and the environment," added Young.

LM's work is ongoing, with current efforts supporting vital projects such as remedy and infrastructure optimization, Five-Year Reviews for legacy Comprehensive Environmental Response, Compensation, and Liability Act sites, and updating Groundwater Compliance Action Plans for Uranium Mill Tailings Radiation Control Act sites. Through teamwork, application of data, and innovation, LM transforms complex scientific challenges into clear, protective, and defensible compliance strategies, ensuring a safer tomorrow for all.

Young added, "The legacy we manage today will define the environment of tomorrow."

A photograph showing three LM site workers in safety gear (hard hats, safety glasses, and high-visibility vests) standing on a drilling rig. The worker on the left is a man in a white hard hat and yellow safety vest, looking towards the center. The worker in the middle is a woman in a white hard hat, safety glasses, and yellow safety vest, looking towards the right. The worker on the right is a man in a yellow hard hat, safety glasses, and yellow safety vest, looking towards the center. They are all smiling and appear to be in a collaborative discussion. The background shows the drilling rig and a hazy landscape.

LM Site Manager Mary Young
oversees Rifle, Colorado, Disposal
Site, drilling operations.



GOAL ONE

A Community Success Story at the Riverton Processing Site in Wyoming

New video highlights collaborative project between LM and Northern Arapaho Tribe

LM Site Manager Stephen Pitton presents to partners from the Northern Arapaho Tribe April 28, 2026.



The Office of Legacy Management is proud to announce the release of a new video showcasing critical upgrades to the Alternate Water Supply System (AWSS) at the former Riverton Processing Site in Wyoming.

This vital project demonstrates one of many effective partnerships LM has with its Tribal partners. LM has significantly enhanced the reliability and longevity of the water system serving homes and businesses near a former uranium and vanadium ore-processing mill.

Teaming with the Northern Arapaho Tribe, LM launched the AWSS upgrade project in 2022, with engineering design and construction completed in 2025. This collaborative effort addressed all identified issues, ensuring effective long-term operation and maintenance.

“Two of the well pumps were not functioning, and the third was barely hanging on and hardly pumping enough water to supply the system. The upgrades to the system, including the new pumps, were critical to keeping the system running,” said Northern Arapaho Natural Resource Office Director Dean Goggles.

LM’s longstanding partnership with the Northern Arapaho Tribe ensured the project’s success, said LM Site Manager Stephen Pitton.

“Our team really embraced effective engagement for this project,” Pitton said. “An initial community meeting, direct communication with residents during planned shutoff periods, and coordinated efforts during construction were

all part of this collaborative federal-to-Tribal relationship that ensured a smooth project progression and safe completion of the upgrades.”

“

Our team really embraced effective engagement for this project.

— Stephen Pitton

LM also had the opportunity to present a summary of project activities, accomplishments, and challenges to Tribal partners from the Northern Arapaho Business Council and the Northern Arapaho Natural Resources Office on April 28.

Watch the new video to learn more about this impactful partnership and the successful upgrade of the Riverton AWSS.

Riverton’s AWSS Upgrade Project:
A Partnership Between the Northern
Arapaho Tribe and DOE LM
<https://youtu.be/yJvqHcHcRXw>





Bronco Site Reclamation Project Successfully Completed

Bureau of Land Management confirms site no longer requires surface management

The Office of Legacy Management recently received confirmation from the Bureau of Land Management (BLM) that reclamation efforts at the Bronco, Colorado, Site were successfully completed and that the site no longer needs to be managed by the U.S. Department of Energy.

The U.S. Atomic Energy Commission (AEC), a predecessor to the DOE, conducted activities at the site as part of the Plowshare Program. The Plowshare Program was established in 1957 to explore the technical and economic feasibility of using nuclear explosives for peaceful purposes. Project Bronco was a joint operation between AEC, the Bureau of Mines, and CER Geonuclear Corporation, which represented 18 oil companies. The plan involved the detonation of a 50-kiloton nuclear explosive to extract oil and oil shale.

LM took responsibility for maintenance and record-keeping at the site in 2019, and reclamation efforts began in 2020. These efforts included soil stabilization, revegetation, and reclaiming a 1-mile stretch of road.

"The goal was to have the well pad and road blend in with the natural landscape, which comprised two different ecosystems — sagebrush steppe and pinon-juniper woodland," said LM Site Manager Jalena Dayvault. "As livestock and wildlife utilize the land, seed mixes were developed with that in mind, and downed timber was also used to cover the areas."

Throughout the reclamation project, LM collaborated with BLM to determine how the site would be monitored and helped create the criteria for successful project completion. During the project, interns in the DOE Mentorship for Environmental Scholars program assisted with data collection and report writing. This summer internship program provides underrepresented college students the opportunity to work and gain experience in a variety of environmental roles with DOE.

"This project had a lot of moving parts and has been an ongoing effort from LM for several years," Dayvault said. "We are very happy that the project was completed successfully and will no longer need DOE oversight."

We are very happy that the project was completed successfully and will no longer need DOE oversight.

— Jalena Dayvault

The reclamation project for the site included the closure and abandonment of two exploration wells, CCH2 and CCH3. Originally intended to characterize the site, these wells remained inactive for more than 50 years. A third exploration well, CCH1, was preserved at the request of BLM to allow for groundwater access.

In January, representatives from BLM met with LM, where they reviewed the reclamation status and determined the site no longer needed DOE surface management. The decision was based on reclamation success criteria presented to BLM and corroborated by five years of vegetation monitoring as well as satisfying stormwater permit requirements.

BLM issued the release of the site at the end of February. The site is owned and managed by the BLM White River Field Office, and LM will continue to keep records and respond to stakeholder inquiries for the site.



Before

The well pad at the Bronco site at CCH3 before revegetation.



After

The well pad at the Bronco site at CCH3 after revegetation.



GOAL SIX

Oral History Webpage Offers Glimpses Into the Past

*In recorded interviews, former employees shed light on
Office of Legacy Management's history*



Retired U.S. Army Maj. Philip Leahy, facing camera, sits for an interview in a 1993 file photo. Leahy was in charge of establishing a domestic uranium program for the Manhattan Project. In his interview, Leahy discusses the work his team performed in Grand Junction, Colorado, in the early 1940s.

The U.S. nuclear complex has a profound history, shaped by countless individuals and pivotal events. The U.S. Department of Energy Office of Legacy Management is working to preserve the voices and experiences of workers, stakeholders, and community members tied to the nation's nuclear weapons production and energy research. By documenting and sharing these histories, LM honors those who helped shape U.S. national defense while creating a valuable resource for future generations.

Although the collection of these oral histories is important for saving these important perspectives, until now there has not been a way to share the bulk of these stories internally or publicly. To make oral histories more readily accessible, the LM Oral History program has developed a webpage to serve as a repository for oral history videos and transcripts that is available to the public. The oral history webpage is a vital resource for understanding the rich past of DOE, its predecessor agencies, LM, and LM's many sites.

"Over the years we captured oral histories for various reasons, but had never pulled them together in a single place," said LM Program Analyst Padraic Benson. "As we started to pull them together, we realized that we had a unique collection that deserved to be shared with the public."

An oral history is the recording and preservation of spoken memories and personal perspectives, typically detailing a specific event, place, or life experience. Unlike written documents such as technical reports and policies, oral histories shed light on the nuances, motivations, and processes of decision making. These firsthand accounts powerfully complement official records, helping LM oversee its sites and histories.



The oral history webpage debuted with 16 oral histories related to four different locations: the BONUS Decommissioned Reactor Site in Puerto Rico and the Grand Junction, Rulison, and Rocky Flats Sites in Colorado. These interviews collect various perspectives from scientists, engineers, administrators, and local community members.

This is an expanding archive, and the LM Support Partner (LMSP) is continually conducting new oral histories, diligently capturing the perspectives of those who shaped DOE and LM. This ongoing effort ensures that the past is comprehensively documented, and the webpage will be updated regularly to reflect the growing collection.



The LM oral history webpage stands as an invaluable historical and educational tool.

— Padraic Benson

These oral histories will also benefit LM and LMSP staff. Oral histories will help new employees quickly gain historical context and understand the foundational work that led to LM's current mission. Veteran employees may discover new perspectives about sites they engage with or possibly reconnect with the experiences of a former colleague. Regardless of their tenure with LM, all staff can benefit from understanding the human side of the scientific breakthroughs, policy decisions, and engineering feats discussed in these interviews.

Additionally, the webpage ensures that these stories are not forgotten. While they are saved internally to add to the institutional history of LM, now they are available to a broader audience, allowing the interviewees to continue to share their stories.

"The LM oral history webpage stands as an invaluable historical and educational tool," Benson said. "We encourage everyone to explore this unique resource and engage with the compelling stories that define the organization."

**Legacy Management
Oral History Program website**
[https://cdn.lm.doe.gov/teams/
education/oralhistories/website/
index.html](https://cdn.lm.doe.gov/teams/education/oralhistories/website/index.html)





Enhanced Website Brings to Life Story of Rocky Flats Site in Colorado

Virtual tour allows users to see the site and select points of interest on a map

The story of the Rocky Flats Site in Colorado is a complicated one. To help tell the story, LM and its support partner have developed an enhanced website that is rich in detail. The website focuses on a site tour and includes multimedia and interactive elements — video, historical photos, maps, and current information about long-term stewardship.

After World War II, the U.S. Atomic Energy Commission established facilities around the country to assist in the large-scale production of nuclear weapons. In 1951, Rocky Flats, located 16 miles northwest of Denver, was identified as one of these locations. From 1952 to 1994, Rocky Flats produced nuclear and nonnuclear weapons components for the nation's arsenal.

Rocky Flats served as a critical part of the U.S. nuclear weapons complex during the Cold War. But in 1989, nuclear operations were suspended when the Federal Bureau of Investigation and the U.S. Environmental Protection Agency raided Rocky Flats to investigate reports of environmental violations. With the end of the Cold War, the site's weapons-related mission ceased in 1994.

The U.S. Department of Energy's new mission was to permanently close and clean the site for future use. DOE and its contractor completed a \$7 billion cleanup in December 2005. More than 800 structures were demolished and removed. Radioactive waste and other materials were also removed from the site.

The Office of Legacy Management assumed responsibility for the remediated site in October 2005. The former industrial area containing residual contamination remains under DOE control and is closed to the public. The surrounding former security buffer zone is now open to the public as part of the Rocky Flats National Wildlife Refuge and is managed by the U.S. Fish and Wildlife Service.

"The launch of the Rocky Flats virtual tour is a great opportunity for the public to learn more about the history of the site and see the current status of the remediated Central Operable Unit, which is closed to the public," said LM Deputy Site Manager Joyce Chavez. "The tour explains the transition from an industrial city that supported our nation's defense to cleanup to conservation back to native prairie."

LM is committed to transparency and the enhanced website is a way to present information about long-term stewardship in an engaging and accessible manner.

**Rocky Flats, Colorado, Site Tour:
Enhanced website**

<https://cdn.lm.doe.gov/ics/rf/index.html>





LM's Nicole Olin Promoted to Lead Environmental, Safety, Health, and Quality Programs

Physical scientist has served LM in a number of roles since 2020

Office of Legacy Management Supervisory Physical Scientist Nicole Olin has been promoted to LM's team lead for LM-25, which includes Environmental, Safety, Health, and Quality (ESH&Q) programs.

The ESH&Q programs ensure that all LM activities — ranging from site monitoring to long-term maintenance — are performed safely and in compliance with federal, state, and local regulations. Their primary goals include:

- **Protecting Human Health:** Safeguarding employees, contractors, and the public from residual radioactive or chemical hazards.
- **Environmental Stewardship:** Implementing a joint Environmental Management System (EMS) to reduce the ecological impact of work activities and ensuring environmental compliance with all environmental laws, rules, and regulations.
- **Ensuring Quality:** Maintaining high standards for data collection, records management, and long-term surveillance to ensure environmental remedies remain effective for decades.

Paul Kerl, office manager for the LM Field Support Center in Grand Junction, Colorado, said Olin has brought vibrant energy to LM in many capacities, such as environmental compliance, transportation, site management, and program management.

"She's proven herself not only in her areas of responsibility, but her eagerness to support organizational needs that add value and transcend numerous cross-functional requirements," Kerl said. "She's often sought out growth opportunities in multiple teams and programs, growing capabilities not only in herself, but finding every opportunity to enhance and further continuous improvement in all her endeavors, whether they be site specific, programmatic, or organizational."

Olin was LM's first dedicated program manager for the Uranium Mill Tailings Radiation Control Act Title II under the leadership of Kerl.

"I am extremely grateful for her assistance in multiple improvements in culture, relationships, process, communication, and succession management for this cornerstone program," Kerl said.

Olin joined LM's Asset Management Team in 2020, supporting environmental planning and National Environmental Policy Act document management activities. She has a Bachelor of Science in Geoscience from the University of Pittsburgh and a Master of Science in Geology from the University of Nevada Las Vegas. Prior to joining LM, Olin served as a contractor to both the DOE Environmental Management and Legacy Management offices for a collective 15 years.

"This is an incredible opportunity to serve and lead a very competent ESH&Q team and to oversee our support partner achieve excellence executing these program areas," Olin said. "I'm dedicated to bringing positive and collaborative energy to the team and have a passion for continuous improvement. One area of focus is to have better integration of the ESH&Q programs, which may appear to operate independently, yet are so critically connected."





LM's Kate Whysner Promoted to Lead Long-Term Stewardship Team

Supervisory general engineer has supported LM in many capacities since 2019

Supervisory General Engineer Kate Whysner has been promoted to lead the Office of Legacy Management's Environmental Team 2, which includes sites regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA). The team also manages the Defense Decontamination and Decommissioning (D&D) and site transition programs.

"It is both exciting and humbling to have the privilege to supervise such a fantastic team of scientists and engineers," Whysner said. "They are incredibly dedicated to LM's mission to protect human health and the environment — and we have fun sometimes!"

CERCLA, commonly referred to as Superfund, provides federal authority to clean up uncontrolled hazardous waste sites. RCRA is the principal federal law regulating the disposal of solid and hazardous waste. When sites come to LM, they've already been cleaned up and wastes have already been contained. Nevertheless, even after cleanup, it is not uncommon for sites to retain some amount of residual contamination that require looking after, and the CERCLA and RCRA rules still apply.

LM's D&D program primarily looks after decommissioned experimental reactors as well as the Legacy Management Field Support Center (LMFSC) in Grand Junction, Colorado, where the government processed uranium during the Manhattan Project and early Cold War.

Paul Kerl, office manager for the LMFSC, has watched Whysner's professional growth since she joined the organization as a contractor in 2019, supporting the Shiprock, New Mexico, Site on the Navajo Nation.

"Kate has proven herself to be one of LM's top performers while always being eager to help others in their development journey along the way," Kerl said. "She has continually demonstrated a phenomenal commitment to supporting mission requirements and goals, fostering teamwork in all she does, and supporting her fellow teammates and taking on challenges with a sense of making a difference."

Over the years, Whysner has supported diverse efforts, including National Laboratory Network initiatives, major construction projects, interpretive center exhibit development, and agreements with the U.S. Army Corps of Engineers. She's managed sites ranging from the CERCLA-regulated Laboratory for Energy-Related Health Research Site in Davis, California, to the Tonawanda Landfill Formerly Utilized Sites Remedial Action Program Site in New York.

"She is the epitome of a professional and a pleasure to have on the LM team," Kerl said. "We collectively are grateful for her steadfast leadership as she embarks upon this new journey."

Whysner's training in the field goes back to her undergraduate research on the environmental effects of open-pit mining, which she conducted while earning a Bachelor of the Arts in Environment and Development from McGill University School of Environment in Montreal, Quebec. She headed west to continue her education, receiving a master's degree in Environmental Science and Engineering from the Colorado School of Mines in Golden, Colorado. After graduation, she worked as a project engineer and project manager in private sector environmental remediation and became a registered Professional Engineer in the state of Colorado.

"Environmental Team 2 has some of the most complex LM sites," said Whysner, "and I am committed to helping the team effectively execute the LM mission and serve their LM communities."



Kate Whysner | Supervisory General Engineer



LM, Partners Showcase Range of Expertise at Waste Management Symposia

Subject matter experts appeared on panels, presented LM work at leading nuclear waste management conference

David Von Behren, LM supervisor of the Education, Communication, History, and Outreach team, talks to attendees of the 2026 Waste Management Symposia.

The Waste Management Symposia established the "Superior Paper" recognition in 2015 with the objective to recognize authors and co-authors for distinguished contributions to the advancement of radioactive waste and radioactive material management.

In 2026, 67 papers received that recognition, including two LM papers:

- Weldon Spring Site Disposal Performance: The First 25 Years.** This paper was authored by LM's Rebecca Roberts and Terri Uhlmeier and LMSP's Launa Danielson.
- Global Navigation Satellite System Interferometric Reflectometry Monitoring of Soil Moisture in an LM Disposal Cell Cover.** This paper was authored by LM's Alison Kuhlman, LMSP's Chris Jarchow, and the University of Montana's Linyang Du and John Kimball.

More than 40 subject matter experts from the U.S. Department of Energy Office of Legacy Management and its support partner attended the 2026 Waste Management Symposia, one of the world's preeminent nuclear waste management conferences, March 9-12 in Phoenix.

The Waste Management Symposia is an international conference providing education and information exchange on global radioactive waste management. The conference is an open forum for experts to discuss the management and disposal of radioactive waste and the decommissioning of nuclear facilities. More than 2,800 professionals from 30 countries attended.

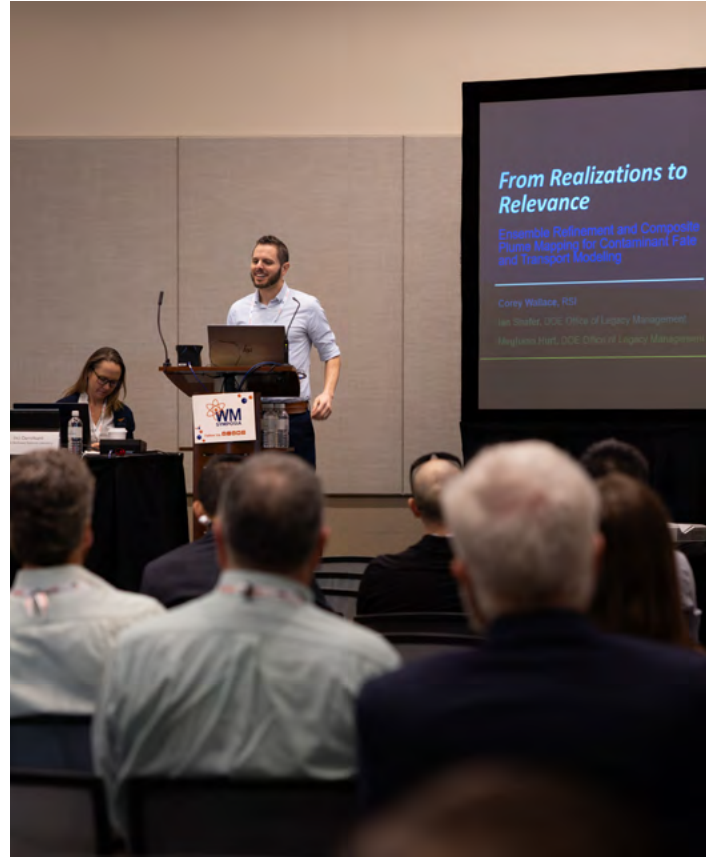
"The Waste Management Symposia is where the top experts in the world gather to learn from one another and illustrate the important work happening in the nuclear industry," LM Director Carmelo Melendez said. "LM is proud to stand alongside our national and international colleagues and play a role in advancing our field."

LM representatives appeared on panels and presented technical papers on a range of scope LM performs and topics that addressed industry issues and challenges.

Following is a summary of those activities:

Monday | March 9

- LM's Rebecca Roberts presented a paper, developed with Legacy Management Support Partners (LMSP) Terri Uhlmeier and Launa Danielson, that described the 25-year performance of the disposal cell at the Weldon Spring Site in Missouri. Roberts explained that through a robust long-term surveillance and maintenance program, LM has demonstrated the disposal cell protects human health and the environment, is functioning as designed, and meets all safety and environmental requirements.
- LM's Jonathan Damiano presented a paper, developed with LMSP Elizabeth DuQuette, Pete Lemke, and Gary McKay, that addressed the application of risk buy-down methodologies for major projects. Damiano discussed the Hazard and Operability study approach and how it was successfully implemented at the Shiprock, New Mexico, Disposal Site's water treatment system along with other processes and methodologies, including effective performance testing and verification.
- LM's Ken Kreie presented a paper, developed with Darina Castillo, Melissa Lutz, LaTerri Paulino, Roberts, and Jeff Austin; LMSP Chelsie Creps; and U.S. Army Corps of Engineers' (USACE) Lindsay Keller, Nicki Fatherly, and Ivanna Goldsberry, that addressed agreement for specialized radiological services. Kreie discussed a unique funding agreement between DOE and USACE that provides USACE with faster and wider access to the world-class resources and innovative radiological capabilities offered by DOE's national laboratories and directorates. Kreie explained the agreement for these services has led to several innovative collaborations that strengthen the nation's ability to manage government legacy radiological hazards at Formerly Utilized Sites Remedial Action Program (FUSRAP) sites.



LMSP Corey Wallace presents at the Waste Management Symposia March 9.



The Office of Legacy Management booth in the Waste Management Symposia's exhibit hall.

- LMSP Corey Wallace presented a paper, developed with LM's Meghan Hurt and Ian Shafer. Wallace explained the challenge of predicting uranium transport because of complex hydrogeology and limited monitoring. He indicated that by analyzing multiple scenarios, LM identifies expected plume patterns and areas of uncertainty and improves predictions, offering a practical, data-driven path for effective site management.
- LMSP Ashton Andrade presented a paper, developed with LM's Padraic Benson and LMSP Taylour Whelan, Jamie Hubert, Frances Boyens, Kevin McCarthy, and Richie Ashcraft, on oral histories at LM's interpretive centers. Andrade explained that oral histories preserve the voices and experiences of workers, stakeholders, and community members tied to the nation's nuclear weapons production and energy research. Andrade indicated that by documenting and sharing these histories, LM honors those who shaped its mission while creating a valuable resource for future generations.

Tuesday | March 10

- LM's Joni Tallbull participated in a panel on how the Network of National Laboratories for Environmental Management Stewardship supports the DOE Office of Environmental Management (EM) and LM programs. The panel addressed the development of DOE sites' climate vulnerability assessment plans, independent review of groundwater remediation and monitoring strategies, and high-risk site assessments. Tallbull was joined on the panel by Pacific Northwest National Laboratory's Frederick Day-Lewis and Christian Johnson and Savannah River National Laboratory's Thomas Danielson, Emily Fabricatore, and Evan Koelker. LM's Castillo and EM Senior Advisor Ming Zhu co-chaired the panel.



LM's Bill Frazier presents his paper, authored with LMSP's Zack Shuler and RSI's Lesley Cusick, March 10.

- LM's Bill Frazier presented a paper, authored with LMSP Zack Shuler and RSI's Lesley Cusick. Frazier explained how borders can be barriers and how LM will be supporting a community leadership institute to help the Hopi Tribe with initiatives designed to reduce barriers and assist in the development of an interpretive exhibit in Tuba City, Arizona.
- LMSP Chris Jarchow presented a paper, developed with LM's Kreie, Angelita Denny, and Jalena Dayvault and LMSP Mike Morse and Ray Johnson that addressed an LM internship program that prepares students for careers in radioactive waste management. Jarchow discussed LM's Applied Studies and Technology internship program, which provides mentors for the LM Mentorship for Environmental Scholars and the Florida International University fellowship programs and provides direct internship opportunities to undergraduate and graduate students.
- LM's Kate Whysner and Kreie participated in a panel

that addressed decades of interagency collaboration between DOE and USACE. DOE and USACE closely coordinate under FUSRAP, which has been comanaged by the two agencies since 1997. DOE and USACE also work together through a Memorandum of Agreement signed in 2021 that allows DOE to leverage USACE expertise for technical services, engineering design, construction management, and other services. Other panelists included USACE's Fatherly, Matt Vielhaber, and Matthew Allen, and the panel was co-chaired by LM's Roberts and USACE's Helen Edge.

- LMSP Jarchow also presented a poster that was authored by Jarchow, LM's Alison Kuhlman, and the University of Montana's Jinyang Du and John S. Kimball. The poster demonstrated the application of an innovative methodology to monitor daily soil moisture profile dynamics using global navigation satellite system interferometric reflectometry, satellite remote sensing, and machine learning technologies.



The LM booth was a popular stop for attendees of the symposium.

Wednesday | March 11

- LM's Bud Sokolovich presented a paper authored with LMSP Ann Wei that explained the unique aspects of LM sites and the properties near or adjacent to them and their potential for further use and development. Sokolovich also referenced case studies of LM sites to show examples of the types of requests received and how LM is developing tools and processes as this environment changes.



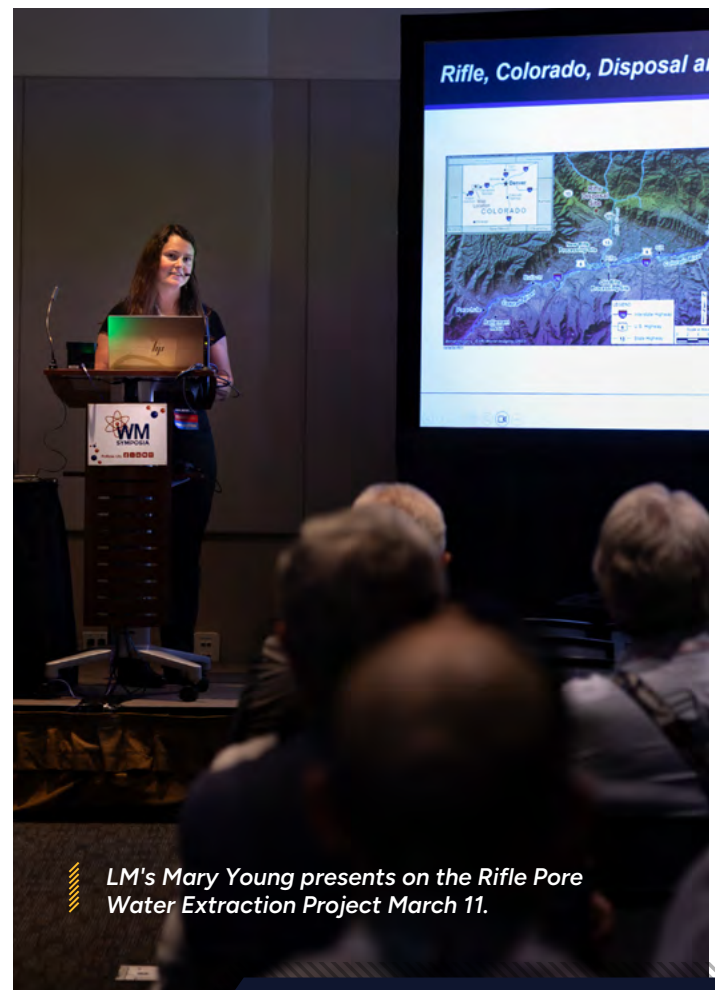
LM's Bill Frazier engages attendees at the LM booth.

- LM's Lutz presented a paper, developed with LMSP Alex Lamore and Savannah River National Laboratory's Brian Looney and Holly Vermeulen. The presentation addressed how LM has employed enhanced bioremediation at the Pinellas County, Florida, Site to treat chlorinated volatile organic compounds at the Building 100 Area. Lutz also discussed LM's engagement with Savannah River National Laboratory to help inform future decisions related to the ongoing bioremediation.
- LM's Hallie Katz presented a paper authored with LM's Frazier and LMSP Zack Schuler that addressed how aging infrastructure at the Tuba City, Arizona, Disposal Site presents new challenges. Katz explained the aging infrastructure prompted LM to complete electrical upgrades in 2024 and conduct a Site Condition Assessment to guide future system improvements and ensure long-term protection of human health and the environment.
- LM's Tiffany Drake presented a paper authored with LM's Andrea Dolch and LMSP Greg Lupton and Wei that addressed the final piece of DOE property at the Mound, Ohio, Site that was transferred to the community in 2025. Drake explained the multiyear process that involved meeting property transfer requirements and regulatory requirements for a Record of Decision amendment, as well as lessons learned.

- LMSP Wei presented a paper authored with LM's Katz and Tallbull. Wei addressed the unique aspects of discussions related to LM's request to the Navajo Nation General Land Development Department to ensure land interests and access for projects planned on Uranium Mill Tailings Radiation Control Act Title I sites on the Navajo Nation. Wei focused on the Shiprock site projects and the related Tribal and regulatory requirements and stakeholder interactions with the Navajo Nation.

Thursday | March 12

- LM's Denny was a panelist during a session on the performance of cell caps and covers for long-term stewardship of residual radioactive materials. Other panelists included Desert Research Institute's Julianne Miller, Navajo Nation Abandoned Mine Lands' Benjamin Deans, Applied Soils LLC's Morgan Williams, and USACE's Jonathan AuBuchon.
- LMSP David Holbrook presented a paper developed with LM's Mary Young; LMSP Mickey Guziak, Jarchow, Jon Luellen, Morse, Clark Murphy, and Connor Mueller; and Applied Soils LLC's Ted Johnson and Williams. Holbrook described LM's Rifle Enhanced Cover Application Pilot Test to evaluate evapotranspiration-enhanced covers as a proactive, long-term management strategy at the Colorado disposal site.



LM's Mary Young presents on the Rifle Pore Water Extraction Project March 11.



LM Director Carmelo Melendez (left) and LM Deputy Director Lara Beasley (right) at the Waste Management Symposia.

LMSP Sonya Daly presented a paper authored with LM's Jennifer O'Brien, Joyce Chavez, Young, Hurt, Shafer, Nicole Olin, and Michelle Franke; LMSP Linda Sheader, Danika Marshall, and Anna Blackford; and the Colorado Department of Agriculture's Dan Bean. The session addressed classical biological control, a regulated type of biocontrol that uses U.S. Department of Agriculture-approved, host-specific insects, mites, or pathogens such as fungi that control targeted invasive species but do not harm other species. The session was co-chaired by LM's Sara Woods and Hanford Mission Integration Solutions' Joy McCrea.

LMSP Ron Kent presented a paper authored with LM's Tallbull and LMSP Ray Johnson that explored how LM is working to better understand and address groundwater contamination at the Monument Valley, Arizona, Processing Site.

"It is encouraging to see how our team contributed so significantly in such a profiled setting, throughout the entire event," said David Von Behren, supervisor of LM's Education, Communication, History, and Outreach team. "Professionals from across the globe convene in Phoenix to address some of the most complicated environmental issues in the world. It is meaningful that our team members contributed so heavily to this cooperative effort."



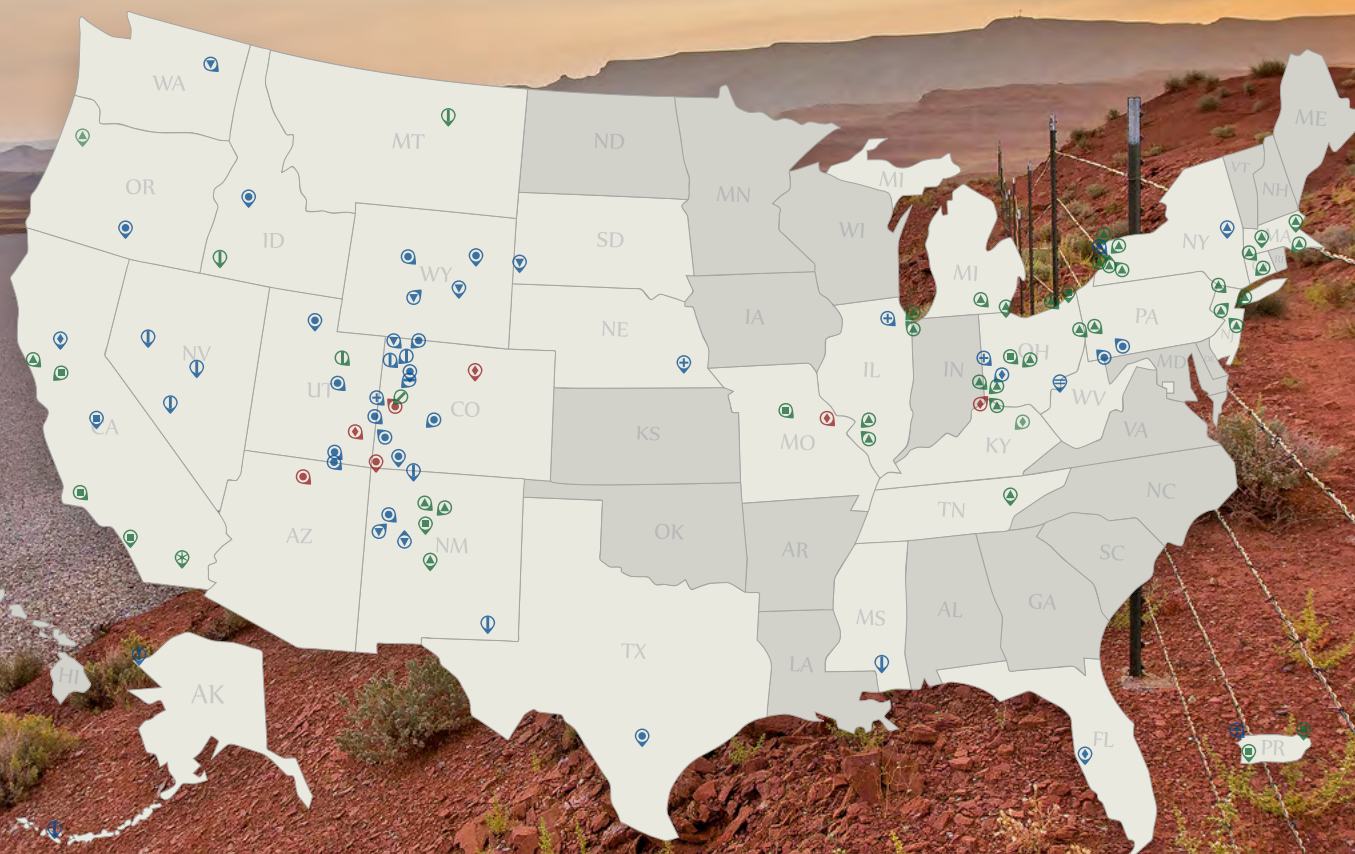
Office of Legacy Management attendees at the 2026 Waste Management Symposia.

WOULD YOU LIKE TO Learn More



You can get valuable information about the U.S. Department of Energy Office of Legacy Management on our website.

www.energy.gov/lm



Also, be sure to follow us on our social media platforms — Facebook and LinkedIn — to keep up with events and news related to our mission.



U.S. DEPARTMENT
of **ENERGY**

Office of Legacy Management



U.S. DEPARTMENT
of **ENERGY**

Office of Legacy Management

2597 Legacy Way, Grand Junction, CO 81503



◀ Scan the QR code to view the digital edition of this *Program Update* and access previous editions.

