

ANNUAL HISTORICAL SUMMARY

MANAGING TODAY'S CHANGE, PROTECTING TOMORROW'S FUTURE



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

2019



www.energy.gov/lm



Cover/Inside Cover Photo

Students participate in a variety of activities at the Weldon Spring, Missouri, Site Interpretive Center

TABLE OF CONTENTS

Purpose of this Document	4
Overview	4
LM Mission and Vision	5
LM Goals and Objectives.....	6
Goal 1: Protect Human Health and the Environment	7
LM Institutional Control Guidance Updated.....	7
CERCLA/RCRA.....	7
FUSRAP	8
UMTRCA.....	9
Decontamination and Decommissioning.....	10
Plowshare/Vela Uniform Program Sites	11
Applied Studies and Technology	12
Selected Collaborative Efforts.....	12
Goal 2: Preserve, Protect, and Share Records and Information	14
Records.....	14
Information Technology.....	15
Goal 3: Safeguard Former Contractor Workers’ Retirement Benefits	16
Goal 4: Sustainably Manage and Optimize the Use of Land and Assets	18
Accomplishments.....	18
Beneficial Reuse.....	18
ULP.....	20
DRUM	21
Goal 5: Sustain Management Excellence	22
Program Awards and Recognition.....	22
Selected LM Director’s Travel.....	22
Program Budget	23
LM Organizational Charts	24
Goal 6: Engage the Public, Governments, and Interested Parties	26
Selected Public Engagement.....	26
Tribal Engagement Highlights	27
Science, Technology, Engineering, and Math (STEM) Outreach	28
LM Interpretive Center Highlights	30
Manhattan Project National Historical Park Highlights	32
Environmental Justice.....	33
Cultural Resource Management	34
Website Visits	35
Media Coverage	37
Digital Presence	38
2019 Site Map	39
Program Update Articles by Issue	40
2019: A Year in Pictures	42
LM By the Numbers	Inside back cover

PURPOSE OF THIS DOCUMENT

This document records the significant accomplishments achieved by the U.S. Department of Energy (DOE or Department) Office of Legacy Management (LM) during calendar year 2019. The intent is to provide a record for future generations who are interested in the work completed by LM during this year. LM will note any data reflected by the fiscal year (as opposed to the calendar year) when applicable throughout the document. Budget information, identified within the document, reflects the October 1 through September 30 fiscal year.

Annual historical summaries highlight a selection of the many activities performed by LM during calendar years. They also offer information about recent work conducted by LM. Future historians and researchers can use the summaries to place the activities of LM into larger contexts, such as the history of DOE.

OVERVIEW

DOE is committed to managing its responsibilities associated with the legacy of World War II and the Cold War. This legacy includes radioactive and chemical waste, environmental contamination, and hazardous materials at over 100 sites across the United States and the territory of Puerto Rico. DOE has taken major steps toward fulfilling its commitments to clean up this environmental legacy by successfully implementing an accelerated environmental remediation program.

Congress established LM on December 15, 2003. The mission of LM is to fulfill the Department's post-closure responsibilities by providing long-term surveillance and maintenance (LTS&M), records management, benefits continuity, property management, and land use planning. At the end of calendar year 2019, LM managed 100 legacy sites in 28 states and Puerto Rico. In addition to stewardship responsibilities at legacy sites, LM maintains five radiometric calibration facilities and manages the Uranium Leasing Program (ULP) and the Defense-Related

Uranium Mines (DRUM) program. LM also incorporates improvements in scientific understanding and technology applications through the Applied Studies and Technology (AS&T) program and manages the LM Business Center Records Storage Facility, which is a certified National Archives and Records Administration repository.

LM is the caretaker of legacy sites that played a critical role in America's nuclear history. It works closely with federal, state, local, and tribal governments to set clear expectations and monitor results to ensure public and environmental safety for generations to come. Science drives the work of LM and it is committed to protecting the environment. It's important to LM that members of the public have access to the information they need to be confident in the safety of LM sites. To achieve this, LM strives to be as transparent as possible regarding the role these legacy sites played in U.S. nuclear history, as well as how the agency is working to prevent public exposure to hazardous materials. LM respects and honors



community knowledge. LM only succeeds by partnering and consulting with tribal nations, state and local governments, community organizations and interested members of the public who know an area's history best.

LM Support (LMS), the primary contractor, works to ensure consistency and accountability for protecting human health and the environment at various legacy sites, preserving records, managing land and assets, sustaining management excellence, and engaging stakeholders. Navarro Research and Engineering, Inc. (Navarro) is the current primary support contractor.

LM MISSION AND VISION

Vision

- The Department's legacy workforce, communities, and the environment are well protected and served.
- Consistent and effective long-term surveillance and maintenance protects people and the environment.
- The public has easy access to relevant records and information.
- Because we work together, stakeholders, tribal nations, and state and local governments trust us.
- The Department safeguards former contractor workforce retirement benefits through prudent, timely funding.
- People are treated fairly and have meaningful involvement.

Mission Statement

Fulfill the Department of Energy's post-closure responsibilities and ensure the future protection of human health and the environment.



Washington, D.C., Forrester Building

LM GOALS AND OBJECTIVES

Goal 1

Protect Human Health and the Environment

- Comply with environmental laws and regulations related to radioactive and hazardous materials, to prepare for receiving sites into LM.
- Reduce post-closure-related health risks in a cost-effective manner.
- Improve the long-term sustainability of environmental remedies.
- Address the environmental legacy of defense-related uranium mines and milling sites.



Goal 4

Sustainably Manage and Optimize the Use of Land and Assets

- Enhance sustainable environmental performance for facilities and personal property, and account for climate change in LM site management.
- Optimize public use of federal lands and properties.
- Transfer excess real and personal government property.
- Manage the Uranium Leasing Program.



Goal 2

Preserve, Protect, and Share Records and Information

- Protect and maintain legacy records.
- Make information more accessible.
- Preserve Yucca Mountain Project science and information.



Goal 5

Sustain Management Excellence

- Develop and maintain high standards for planning, budget, acquisition, and project management.
- Sustain a talented, diverse, inclusive, and performance-driven federal workforce.
- Improve the efficiency and effectiveness of administrative actions.



Goal 3

Safeguard Former Contractor Workers' Retirement Benefits

- Ensure prudent funding of former contractor workers' retirement benefits.
- Shelter former contractor workers' retirement benefits from risks.



Goal 6

Engage the Public, Governments, and Interested Parties

- Engage the public in our program, project, and site activities.
- Work effectively with local, state, and federal governments and nonprofit organizations.
- Consult, collaborate, and partner with the people and governments of tribal nations.
- Support development of the Manhattan Project National Historical Park.
- Implement Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, within LM.



/ Mound, Ohio, Plant Workers, Circa 1974

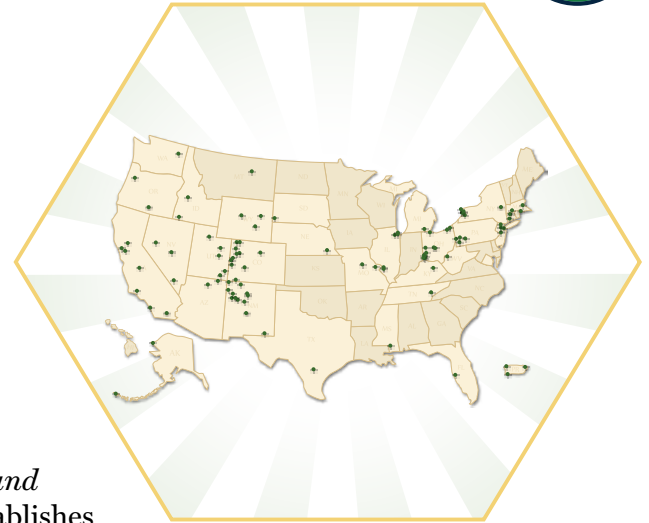
GOAL 1 Protect Human Health and the Environment



At the end of calendar year 2019, LM managed 100 legacy sites in 28 states and Puerto Rico. LM implements long-term care plans that are designed to protect public health and the environment. These plans are site-specific and comply with environmental laws and regulations.

LM Institutional Control Guidance Updated

On February 25, LM issued updated *Guidance for Developing and Implementing Institutional Controls for Long-Term Surveillance and Maintenance at DOE Legacy Management Sites*. The guidance establishes the LM approach to managing, monitoring, and enforcing institutional controls in conjunction with DOE Policy 454.1 and various legal frameworks used to manage sites.



Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)/Resource Conservation and Recovery Act (RCRA) Sites

Rocky Flats Hillside Landfill Repairs

On August 7, DOE began the largest construction project in LM history: repairing two sections of the Original Landfill at the Rocky Flats Site, Colorado. Soil on the steep hillside of the old, closed landfill has been slipping downhill for several years and previous repairs did not provide a long-term fix. The project, which is expected to finish in May 2020, involves installing:

- Steel anchors deep into bedrock that will hold the soil.
- Subsurface drains that will route shallow groundwater away from the slipping areas.

LM Completed Unconditional Closure of Part of the Pinellas Site

In November, LM completed the unconditional closure of a unit of its Pinellas County, Florida, Site. The closure order, issued by the Florida Department of Environmental Protection, specifies that DOE no longer has any responsibilities for the unit, known as the 4.5 Acre Site, and that the landowner has full and unrestricted use of the property. While LM no longer bears responsibility for the 4.5 Acre Site, the office will continue its long-term stewardship activities on other areas of the Pinellas County site.

Fernald Preserve Completed Three-Year Wastewater Treatment Optimization Project

Workers at the Fernald Preserve, Ohio, Site completed a three-year optimization of the site's Converted Advanced Wastewater Treatment (CAWWT) facility to ensure operational certainty until the end of the site's groundwater remediation — currently projected for 2039. CAWWT had a treatment capacity of 1,800 gallons per minute (gpm) when LM took it over in 2006 and was right-sized to 50 gpm with regulator and stakeholder buy-in. LM initiated the three-phase project in 2016.

- Removed used treatment media, piping, and tanks to make room for the new system in the existing building (completed in January 2017).
- Designed, constructed, installed, and started up the new system (completed in spring 2018).
- Removed and disposed of 400 cubic yards of low-level radiological waste from the Backwash Basin and replaced the basin wall panels and liner (completed in winter 2019).

Formerly Utilized Sites Remedial Action Program (FUSRAP) Sites

LM Took on Stewardship at Three Northeast FUSRAP Sites

The Attleboro, Massachusetts; Windsor, Connecticut; and Colonie, New York, sites were cleaned up by the U.S. Army Corps of Engineers (USACE) and transitioned to LM for long-term stewardship under FUSRAP. LM takes over long-term stewardship of FUSRAP sites after USACE completes site cleanup. The Colonie site became the 100th site LM has accepted for long-term stewardship since the office was founded.

- The Attleboro and Windsor sites transitioned to LM on January 25. Stewardship responsibilities at these sites are limited to managing site records and responding to stakeholder inquiries.
- USACE transitioned jurisdiction over the Colonie site to LM for long-term stewardship on October 1. LM responsibilities at the site include routine inspections, monitoring and maintenance, and responding to stakeholder inquiries.

Director Melendez, LM Staff Toured FUSRAP Sites in St. Louis

LM Director Carmelo Melendez joined LM site managers, support contractor site leads, and other federal agency and state representatives to tour the USACE active FUSRAP sites, located in the St. Louis, Missouri, area, on May 8. The visit allowed LM site managers and officials to get a firsthand look at the sites that will be transferring to LM during the next two decades.

- These FUSRAP sites resulted from uranium extraction and processing by the Mallinckrodt Chemical Plant, near downtown St. Louis, Missouri, from 1942 to 1957, under contract with the Manhattan Engineer District and the U.S. Atomic Energy Commission (AEC).
- From 1946 until 1967, radioactive byproducts from Mallinckrodt were stored on-site at the St. Louis Airport. The wastes were later purchased, moved, and stored at the Hazelwood Interim Storage Site.

LM Staff Toured Northeast FUSRAP Sites

During the first week of June, LM toured eight FUSRAP sites in New York and New Jersey, ranging from active industrial facilities to city parks and vacant lots. During the tour, LM met with multiple agencies and community stakeholders, who provided updates on remediation activities and anticipated final site conditions, as well as potential opportunities for beneficial reuse in the future.

- USACE is currently cleaning up the Maywood, Middlesex, and Deepwater sites in New Jersey and the Hicksville site in New York.
- LM recently referred the Staten Island, New York, Site to USACE for consideration for inclusion in FUSRAP.
- The New Brunswick and Wayne, New Jersey, sites have already been cleaned up and are under the stewardship responsibility of LM for records management and stakeholder support.



LM Contracted with Local Firms to Improve Bayo Canyon Site

LM contracted with local firms to remove fencing and minor debris at the Bayo Canyon, New Mexico, Site this summer to improve site access and remove assets that are no longer necessary. The site, owned by Los Alamos County, is open space used by hikers and mountain bikers. Removing these materials improves visitor experience. LM previously arranged for the New Mexico Utility Company to remove utility poles and an associated lightning system at the site.

Fourth Annual Joint FUSRAP Meeting

LM FUSRAP team members attended the Fourth Annual Joint FUSRAP meeting in Omaha, Nebraska, on November 6-7. Over 40 representatives from USACE, LM, and LMS attended the two-day meeting. Joint meetings between USACE and LM promote process improvements and dialogue on how to best streamline efforts and overcome challenges in executing the mission.

Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) Sites

Grand Junction, Colorado, Disposal Site Received Less Material than Anticipated

The 2019 disposal season at the Grand Junction site concluded with the disposal cell receiving much less low-level radioactive materials than expected. A proposed Grand Junction Regional Airport runway project was expected to generate 5,500 cubic yards (yd³) of waste, but changes in the construction project resulted in a mere 400 yd³ of material being received and blended in June. Additional seasonal work included:

- Applied SoilTac copolymer soil stabilizer in July to the open portion of the cell to ensure residual radioactive material is secured.
- Maintenance projects in August and September replaced 800 feet of silt fence around the lower evaporation ponds; repaired 7 miles of ancillary roads and 700 square yards of secondary asphalt roads around the site; installed a solar-powered aluminum gate on the main access road; painted Buildings B, D, and support structures; and constructed new Americans with Disability Act-compliant stairs for Building B.
- The AS&T group conducted a vegetation study on the closed portion of the cell to learn about revegetation with native plants.

Mexican Hat Interim Cover Project

From August 7 to September 6, LM addressed disposal cell cover erosion at the Mexican Hat, Utah, Disposal Site. Several shallow depressions on the cell cover were discovered during a routine site inspection and investigated to determine the cause and whether they indicate underlying erosion.

- The Interim Cover Project excavated and repaired a 20,000-square-foot section of the side slope containing the eroded sections and installed an interim cover.
- The interim activities ensure contaminated materials remain safely within the cell and the cell remains protective, while a long-term solution is designed and implemented.



Decontamination and Decommissioning Sites

LM Removed Asbestos from the Decommissioned Reactor in Piqua, Ohio

LM completed asbestos abatement at the Piqua, Ohio, Decommissioned Reactor Site in September, despite encountering additional quantities of asbestos (vermiculite) that were not originally identified. The asbestos removal was a necessary step in evaluating the long-term path forward for the site.

- The project removed more than 4,000 linear feet of asbestos-wrapped pipe dope and pipe insulation, as well as more than 6,000 square feet of asbestos floor tile at the site.





Plowshare/Vela Uniform Program Sites

LM Took Responsibility for 175 Non-Nuclear Test Sites

In the fall, DOE Office of Environmental Management (EM), National Nuclear Security Administration, and LM formally signed a Memorandum of Agreement, assigning LM responsibility for 175 Plowshare/Vela Uniform Program sites. The program consists of sites where non-nuclear tests were conducted or where nuclear tests were canceled after some activities had occurred.

- 171 of the sites will be managed as a single “Records Only” site called the Plowshare/Vela Uniform Records, Nevada, Site.
- LM will conduct minor maintenance activities and some additional investigations at four sites — Bronco, Colorado, Site; Pre-Gondola, Montana, Site; Pre-Schooner, Idaho, Site; and Utah, Utah, Site — to determine whether there are outstanding liabilities from operations by the AEC.

Applied Studies and Technology

Colorado Mesa University Internship at the Grand Junction Office

As part of the Persistent Secondary Contaminant Sources Project, Jordan Drake, a Colorado Mesa University geology major and student intern, completed work that improves the techniques used to identify uranium in geologic samples using scanning electron microscopes. The project, which is part of the AS&T program, is focused on determining how uranium at LM sites may be retained in persistent secondary source zones below and at a distance from the former mill tailings piles, even when the original uranium tailings materials have been removed.

AS&T Released Draft Disposal Cell Cover Vegetation Study Report

In October, the LM AS&T team delivered a draft report on a study evaluating potential effects of plants growing on engineered disposal cell covers for uranium mill tailings. The *Uptake of Elements of Concern by Plants Growing on UMTRCA Disposal Cell Covers, October 2019* study is part of the long-term cover performance project that LM has been investigating for years.

- Previous studies have shown that contaminant concentrations in plants growing directly on tailings are most often low, but sometimes plant concentrations exceed soil concentration.
- These results can inform site-specific evaluations of the pros and cons of allowing plants to grow on uranium mill tailings disposal cells.

Selected Collaborative Efforts

LM, IAEA Signed Three-Year Uranium Technical Support Agreement

On January 8, LM and the International Atomic Energy Agency (IAEA) signed a three-year “Practical Arrangements” agreement to provide technical support for IAEA activities involving uranium legacy sites around the world. LM will support the Coordination Group for Uranium Legacy Sites in the central Asian republics of Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan. LM will also help develop safety standards for remediation, long-term stewardship of legacy uranium sites, and support training and site visits for regulators and other professionals from IAEA member states.

LM Completed Endangered Species Consultation for Colorado River Basins

On March 8, the U.S. Fish and Wildlife Service (USFWS) issued the last of two biological opinions stating that LM LTS&M activities are not likely to adversely affect threatened and endangered species in all basins of the Colorado River. In early spring, LM completed programmatic consultation with USFWS (under Section 7 of the Endangered Species Act of 1973) that evaluated for these species and critical habitat.

LM Hosted National Laboratory Meeting

Representatives from LM, LMS, and nine of the DOE National Laboratories met to develop an integrated path forward for potential future support to LM at a meeting in Augusta, Georgia, on April 16 and 17. In March 2018, LM, EM, and Savannah River National Laboratory (SRNL) signed a Memorandum of Understanding to designate SRNL as the lead laboratory for LM. SRNL is facilitating LM interaction with DOE National Labs to provide technical innovations in science and technology for the next decade.



LM Shared Stakeholder Relations Experience at IAEA Conference in Portugal

From September 23-27, LM participated in an IAEA workshop in Portugal on the “Concept of Social License in the Remediation of Uranium Legacy Sites.” Social license refers to the tacit acceptance and approval by residents of an organization’s work in their community. Workshop participants included representatives from various regions of South America, Europe, Asia, Africa, and Australia. LM presented information on:

- Educating stakeholders on the difference between naturally occurring metals in the environment and metals introduced by uranium mining and milling operations.
- DOE/stakeholder relations during environmental cleanup through present day long-term stewardship at the former Feed Materials Production Center (now the Fernald Preserve, Ohio, Site).

LM Visited Germany

Director Carmelo Melendez and LM staff traveled to Chemnitz, Germany, to collaborate with international colleagues on the long-term stewardship of legacy sites, during the week of October 6. The group participated in the Wismut International Mining Symposium (WISSYM) and a concurrent IAEA Uranium Mining Remediation Exchange Group meeting.

- WISSYM allows attendees to share their diverse experiences in remediation and their strategies for achieving a sustainable future at legacy sites.



LM Shared Lessons Learned in Environmental Data Management

LM collaborated with the Hanford Mission Support Alliance and EM Nevada Program Office during 2019, regarding implementation of a new environmental data management system.

In early 2019, LM migrated from an older system to EarthSoft’s EQUIS environmental mission support data management system and gained valuable experience addressing migration from one environmental data management system to another.

- The Hanford, Washington, Site is migrating data from two aging databases currently used for Hanford’s Environmental Surveillance program. Similar collaboration recently occurred with the Nevada Program Office.
- LM provided computer code, data-table templates, and associated process documentation to facilitate the Hanford data migration.

LM and EM Formalized Collaboration on Moab UMTRA Project

LM and EM signed a memorandum of understanding in 2019 to collaborate on the EM Uranium Mill Tailings Remedial Action (UMTRA) project in Moab, Utah. EM is currently excavating uranium mill tailings from the former Atlas Uranium Mill Site, along the Colorado River, and transporting the tailings to an engineered disposal cell near Crescent Junction, Utah. EM is considering alternate cover designs for the disposal cell, including an evapotranspiration (ET) cover, which would likely reduce the cost of completing the cell and improve its long-term performance.

- LM will provide the LMS AS&T group’s more than 20 years of knowledge, skills, and abilities in cover design and cell performance of ET covers.
- LM will gain knowledge and insight concerning the engineering design and construction of the Crescent Junction disposal cell, for which LM will eventually be responsible.

LM Advances Departmental Geospatial Collaboration

In September, LM and DOE Office of the Chief Information Officer co-sponsored the re-chartering of the DOE Geospatial Science Program Management Office (GS-PMO). GS-PMO will provide the governance structure, strategic direction, mission alignment, and communication for the geospatial science and technology implementations within the Department.

GOAL 2 Preserve, Protect, and Share Records and Information

While transferring records to the Legacy Management Business Center (LMBC) in Morgantown, West Virginia, LM adopted new technologies for retention and disposal. LM will continue to maintain its records collections with the goal of providing the highest possible value.

Records

Records Transfer Completed for Northeast FUSRAP Sites

Records delivered to LMBC in June and July marked the completion of the transition of three Northeast FUSRAP sites from USACE cleanup to LM stewardship.

- Dozens of boxes of paper and multiple electronic Administrative Record (AR) and Permanent Record collections for the Tonawanda, New York; Attleboro, Massachusetts; and Windsor, Connecticut, sites were delivered.
- LM posted the redacted ARs for the Attleboro and Windsor sites on the LM website and individual site webpages, empowering stakeholders to view and download the CERCLA cleanup decision documents.

Rocky Flats Records Transferred to LMBC

On April 25, LM completed the transfer of over 19,000 boxes of Rocky Flats Site, Colorado, records from the Denver Federal Records Center to the LMBC.

- Rocky Flats records were originally stored at the Denver Records Center due to a litigation hold filed in 1994 that prohibited the records from leaving the state of Colorado. The litigation hold was lifted in April 2018, allowing the transfer to LMBC.
- The records were transferred via 17 shipments.





BONUS Records Management Project

In September, LM completed indexing and archiving 394 boxes of original records for the Boiling Nuclear Superheater (BONUS), Puerto Rico, Decommissioned Reactor Site in Rincón. The records, which belong to the Puerto Rico Electric Power Authority (PREPA), were transferred from their San Juan office to LMBC for long-term stewardship.

Information Management Improved by new Enterprise Content Management System

LM improved on its information management and governance program in 2019. The more powerful Enterprise Content Management (ECM) software replaced LM's aging recordkeeping tools. Installed this year, the new software:

- Empowers all staff to organize and utilize their own information, doing away with bottlenecks inherent in the previous system.
- Ensures compliance with federal recordkeeping requirements and information management best practices.
- Provides additional ECM tools to help LM streamline information holdings by identifying redundant, trivial, and obsolete data.

GEMS Mapping Data Integrated into EPA Cleanups in My Community Website

In 2019, LM collaborated with the U.S. Environmental Protection Agency (EPA) to integrate LM's Geospatial Environmental Mapping System (GEMS) mapping data with EPA's Cleanups in My Community (CIMC) application and website (www.epa.gov/cimc). Combining the DOE locations and boundaries with the contextual data and EPA site data in CIMC, enables the general public to access more information about hazardous waste cleanup sites — all in one online location.

Information Technology

LM Upgraded Computers to Windows 10 Platform

The Information Technology (IT) End User Services team upgraded more than 750 computers actively in use by migrating them from Windows 7 to the Windows 10 platform and Office 365, providing up-to-date and consistent technical tools and a secure operating environment.

- The upgrade project began in January 2019.
- Microsoft is suspending support of Windows 7 in January 2020.

LM Modernized Asset Management System

LM installed Archibus, a commercial off-the-shelf system to manage facilities, personal property, and fleet assets. Data from several existing sources was mapped to the new database structure and imported into the new system. Extensive testing is wrapping up and a production date is expected in spring 2020.

LM Upgraded Their Collaboration Capabilities and Implemented SharePoint 2016

LM replaced their aging SharePoint environment with SharePoint 2016. This upgrade ushered in a new level of collaborative capabilities and business platform support.

LM Completed Environmental Data Management System Migration

In 2019, LM migrated environmental data from an older system to EarthSoft's EQUIS environmental data management system to improve data management effectiveness as more data is managed and technology advances.

- EQUIS is a suite of software tools that support task management, field data collection, analytical data checking, data verification and validation, reporting, graphics, and visualization.

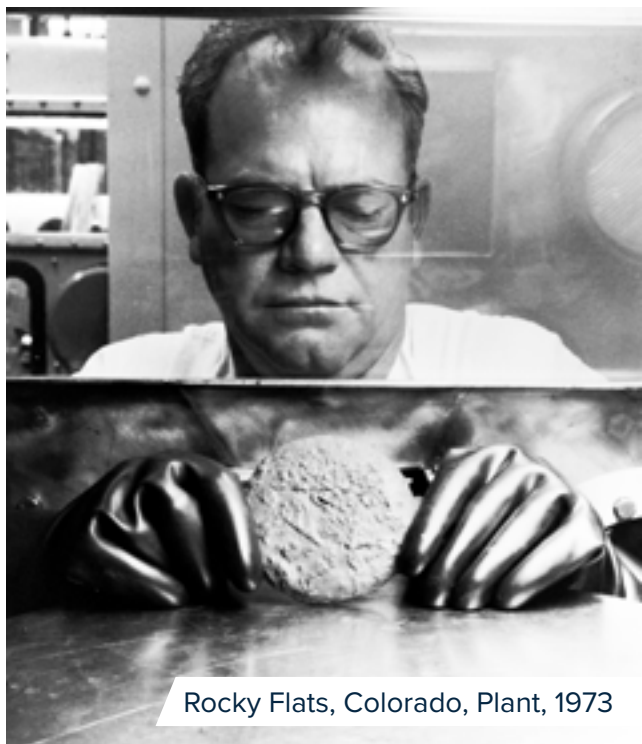
GOAL 3 Safeguard Former Contractor Workers' Retirement Benefits



Weldon Spring, Missouri, circa 1957



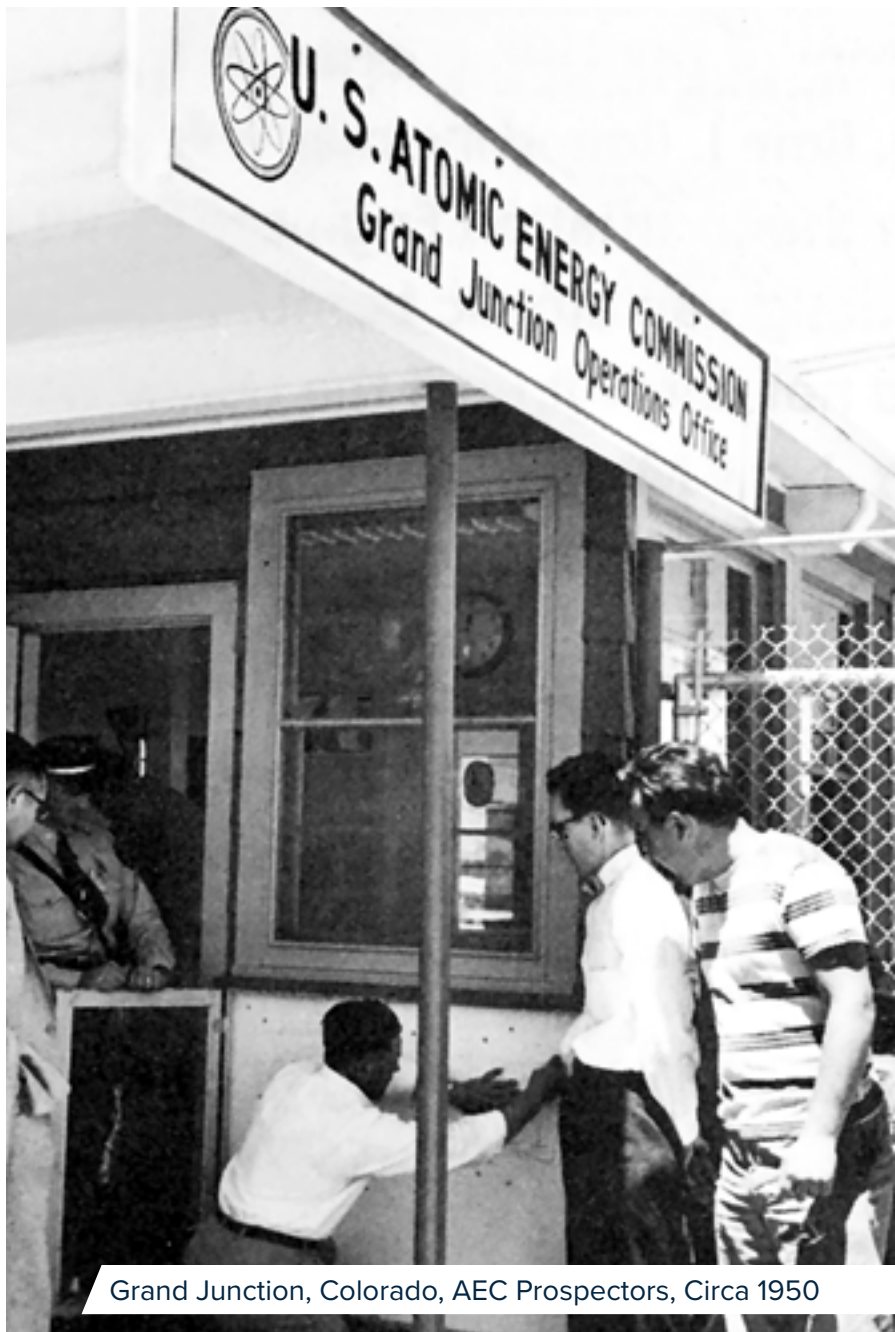
Pinellas, Florida, Pinellas Peninsula Plant, Circa 1957



Rocky Flats, Colorado, Plant, 1973



Fernald, Ohio, Plant, Circa 1982



Grand Junction, Colorado, AEC Prospectors, Circa 1950

LM funds pensions and post-retirement medical and life insurance benefits for more than 12,000 former contractor workers and their spouses.

GOAL 4 Sustainably Manage and Optimize the Use of Land and Assets

While LM provides technical site management, it is also a steward of the land through sustainable management of land and assets. Where possible, LM supports beneficial reuse so that former sites can turn into community assets.

Accomplishments

LM Recognized for Sustainable Purchasing

On May 22, LM received a 2019 Electronic Product Environmental Assessment Tool (EPEAT) Purchaser Award at the EPEAT Purchaser Awards Ceremony, during the Night Out with the Green Electronics Council in Portland, Oregon. This is LM's fifth consecutive year earning the highest rating at the event, which annually celebrates and honors representatives from organizations that advance sustainability through technology and procurement.



Recycling X-Rays Earned LM More Than \$17,500

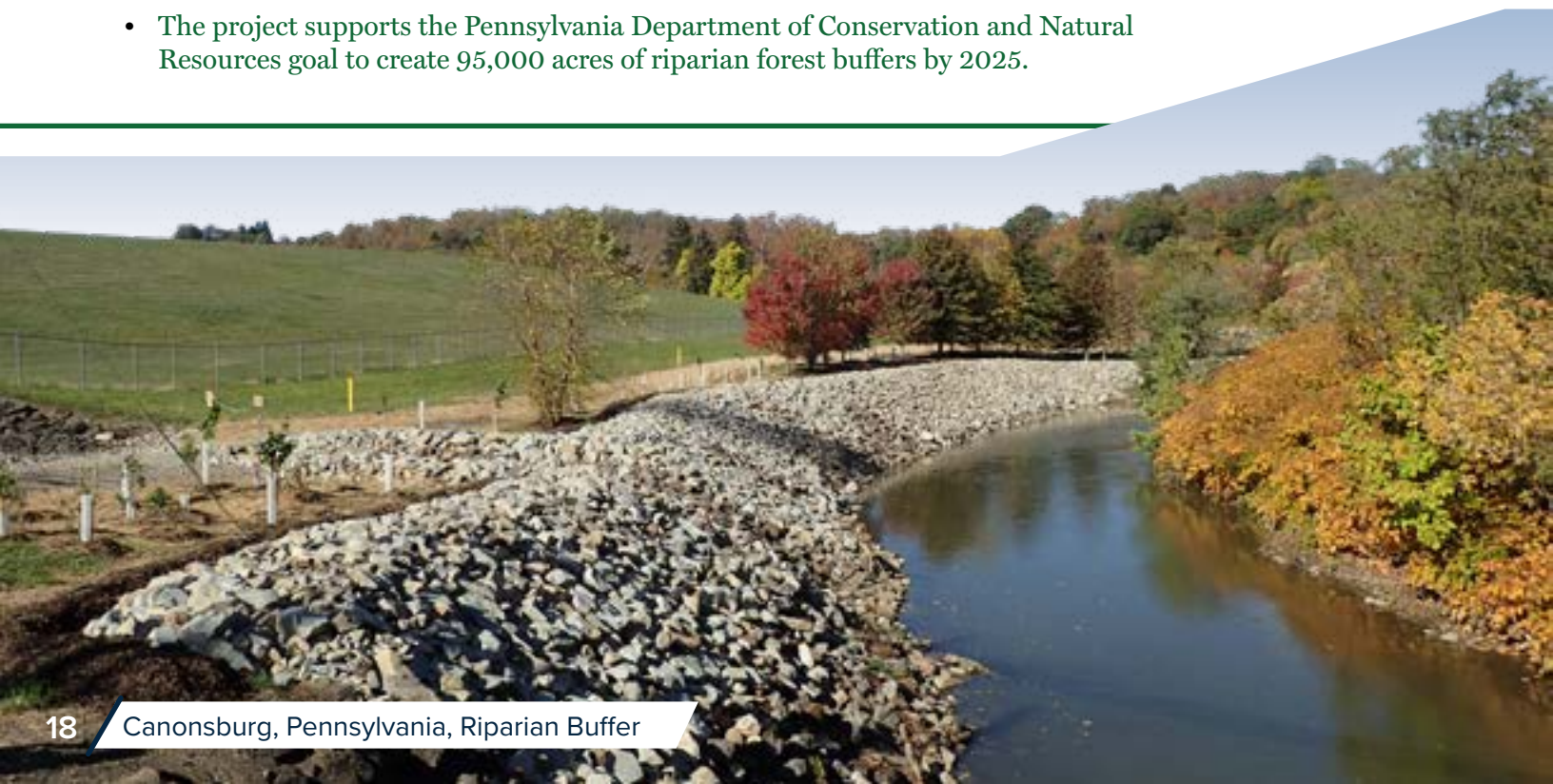
LM recycled a total of 18,025 pounds of degrading X-rays collected from the Rocky Flats Site, Colorado, and Mound, Ohio, Site. The original X-rays were scanned, digitized, and stored in the LM records system. The recycled materials consisted of 12,551 pounds of double-emulsion film, 16 pounds of single-emulsion film, 1,069 pounds of pallets and boxes, and 4,389 pounds of medical file jackets. Recycling the X-ray films and associated materials not only avoided disposing of them as waste, but also earned LM a \$17,582.60 payment.

Beneficial Reuse

Conservation Reuse Efforts at Pennsylvania Site

Ongoing revegetation efforts at the Canonsburg, Pennsylvania, Disposal Site are part of the habitat restoration and enhancement components emphasized in the LM Beneficial Reuse Management Plan.

- An expanded riparian buffer is being established as part of streambank protection efforts along Chartiers Creek that will improve stream quality, reduce flooding impacts, and prevent erosion.
- The project includes seeding native grasses and wildflowers, as well as planting more than 500 native trees and shrubs.
- The project supports the Pennsylvania Department of Conservation and Natural Resources goal to create 95,000 acres of riparian forest buffers by 2025.



Fernald Preserve Won EPA Site Reuse Award

On July 11, EPA announced that the Fernald Preserve, Ohio, Site, won the second annual “National Federal Facility Excellence in Site Reuse” award for the National Priorities List category. EPA established the annual award program in 2018 to recognize outstanding efforts to remediate and restore federal sites for reuse, with the hope of teaching best practices for other sites to replicate. Environmental remediation, ecological restoration, and continuing long-term stewardship of the Fernald site have converted the former Cold War production facility to a 1,050-acre undeveloped park with an emphasis on wildlife.



Final Transfer of Mound Site from DOE to Mound Development Corporation

On September 10, LM transferred the last property parcel at the Mound, Ohio, Site from LM to the Mound Development Corporation, a nonprofit community development arm of the city of Miamisburg, for beneficial reuse.

- DOE transferred ownership of remediated parcels on the 306-acre former weapons and research facility from 1999 to 2019.
- The site is now the Mound Business Park, home to more than 16 businesses that employ approximately 400 people.

LM Joined Groundbreaking at Grand Junction Riverfront Park

On September 24, LM participated in the groundbreaking of the Riverfront at Las Colonias Park, located at the former Grand Junction, Colorado, Processing Site. The Climax Uranium Mill processed uranium and vanadium from 1950-1970. The groundbreaking was the ceremonial kickoff for the next phase of development, which will include:

- Public parks, ponds, and habitat improvement along the Colorado River.
- A business park with a variety of retail and restaurant attractions, as well as a zip line from Eagle Rim Park across the Colorado River.



Uranium Leasing Program (ULP)

Renewed ULP Comes with Stricter Environmental Standards

In October, DOE restarted uranium mine leasing on public lands, while incorporating more stringent environmental standards into the process. ULP leases land in the Uravan Mineral Belt in southwest Colorado to private companies for uranium mining. The program was previously on hold since 2011 when an injunction was issued in federal court halting all mining activities until a Programmatic Environmental Impact Statement was completed. All leases for these mining sites will require a detailed environmental assessment of the impacts of future mining on the area to ensure protection of air, water, wildlife, and cultural resources, with a renewed emphasis on safety.

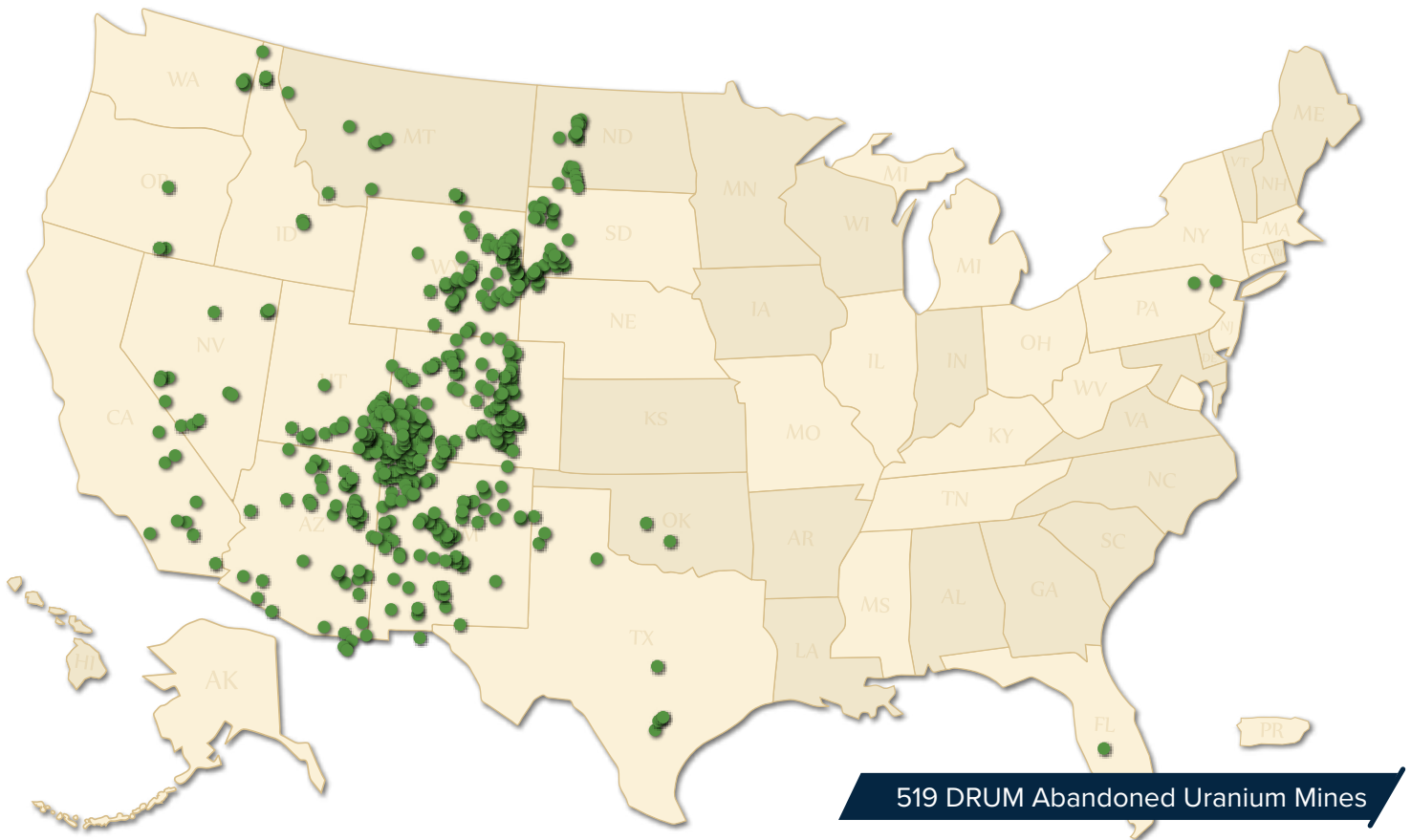


DRUM

DRUM Program Verified and Validated 519 Abandoned Uranium Mines

The DRUM program added a fifth field team in June to meet the demands of verifying and validating data on 519 mines by the end of September, surpassing the planned 500.

- The new field team consists of an ecologist, geologist, radiation control technician, and a field team lead.
- Teams reconciled data on 960 DRUM sites, nearly doubling the 500-mine deliverable. 730 were identified as sites that need to have verification and validation activities performed and 230 were identified as duplicate sites.



LM Explained DRUM Program to Abandoned Mine Lands Partners

LM presented an overview of the DRUM program at the annual meeting of the Southwest Abandoned Mine Lands Partnership in Glenwood Springs, Colorado, on August 7. The presentation included:

- History of the program.
- Overview of the data collection, reporting, and mine risk-scoring processes.
- LM's vision for the program's future direction.



GOAL 5 Sustain Management Excellence

Goal 5 focuses on internal management and is led by LM Director Carmelo Melendez. In his third year in the program, he has continued implementing a strategic path forward. LM could not effectively conduct its work without the efforts of federal and LMS staff members. Under Melendez's leadership, LM and LMS have created a partnership aligned to achieve the vision of "One Team, One Mission." All employees — federal staff, support contractors, and teaming partners — hold themselves to a shared set of performance expectations. In support of this vision, LM now considers and refers to LMS as the Legacy Management Strategic Partner, rather than just the contractor.

DOE Issued Procurement Notice for Expiring LM Contract

Headquarters Procurement issued a pre-solicitation notice for LM's post-remediation LMS contract on June 19. The current contract expires in May 2020 and will be replaced with a competitive five-year small business set-aside, indefinite delivery, indefinite quantity contract.

Warm Welcome for the First DOE LM Fellows from Florida International University

Two environmental engineering students from Florida International University (FIU), Olivia Bustillo and Beatriz Perasso, were inducted as DOE Fellows in November. The two FIU STEM students were selected as the first fellows to work with LM, in addition to the twelve that will work with EM. They are part of a program that shapes future candidates for the DOE workforce. As part of their fellowship, Bustillo and Perasso will learn about the challenges of long-term stewardship.

Program Awards and Recognition

Two Winners of the Philip C. Leahy Employee of the Year Award

Of the 18 staff members who received the Philip C. Leahy Award, the award committee determined there was a two-way tie for Employee of the Year: Nicole Pino and Padraic Benson.

- Pino, a member of the Financial Audits and Contracts Services Team, was recognized for her role in developing a strategic uncosted balance prediction model, a financial tool that plays a key role in forecasting the optimal levels of carry-over and informing management of the best pathways forward for funding.
- Benson serves as a member of the Communication, Education, and Outreach Team. He also supports the site operations teams to which he is assigned and serves as a historian for LM, covering both the history of the organization and the history of the sites now under LM stewardship.



Philip C. Leahy

Selected LM Director's Travel

LM Director Carmelo Melendez, LM Staff Toured FUSRAP Sites in St. Louis

On May 8, Melendez joined LM site managers, support contractor site leads, and other federal agency and state representatives to tour the USACE active FUSRAP sites, located in the St. Louis, Missouri, area.

Nevada Site Visits

From September 2-6, Melendez toured two Nevada LM sites and one site scheduled for accelerated transition to LM. The Nevada sites, Project Shoal and the Central Nevada Test Area, are underground nuclear test sites located off the Nevada National Security Site (formerly the Nevada Test Site). He also visited the EM cleanup sites on the Tonopah Test Range (TTR). EM and LM are on schedule to transition the TTR cleanup sites to LM for long-term stewardship next year, two years ahead of schedule.



FIU Visit

Melendez visited FIU on November 6 and 7. The director attended the induction of the 2019 class of fellows for FIU Science and Technology Workforce Development Program for EM. He met with FIU faculty and students on November 6 to discuss LM science and technology needs. LM has agreed to host two FIU Fellows as part of a collaboration with EM and expansion of the FIU program.

Recognition of LM Contractors in West Virginia and Colorado

Melendez met with LM contract employees and their management at LM offices in Morgantown, West Virginia, and Grand Junction and Westminster, Colorado, during the week of November 17-22.

- Melendez recognized specific contractor employees for their significant contributions to the LM mission during 2019.
- He discussed the LM Strategic Direction for 2020 with LM and LMS, answered questions, and reinforced the message of “One Team, One Mission.”

2019 Program Budget (in millions)

\$158.88



2020 Program Budget Request

On March 11, DOE rolled out its 2020 budget request, which included approximately \$303 million for LM.

OLD LM ORGANIZATIONAL CHART

**As of
01/01/2019**

LM 1

C. Melendez, Director
M. Downing, Environmental Justice Program Manager

LM 2

P. O'Konski, Deputy Director
T. Atkins, Program Manager
T. Carter, Senior Policy Advisor

Executive Operations Team - LM 4

P. Poole-Shirriell, Team Leader
C. Johnson-Freeman, Program Analyst
R. King, Correspondence Specialist
E. Jackson, Staff Assistant
E. Valencia, Staff Assistant
Q. Clyburn, Program Analyst

Communication, Education, and Outreach Team - LM 3

K. Edson, Public Participation Specialist
P. Benson, Program Analyst
K. Frolich, Public Participation Specialist

Office of Business Operations - LM 10

T. Smith-Taylor, Director
T. Collins, Business Operations Specialist

Archives and Information Management Team - LM 11

E. Parks, Team Leader
T. Garlow, IT Specialist
R. Walker, IT Specialist
M. Garrett, Program Analyst
J. Linard, Program Analyst
K. Brown, IT Specialist

Financial, Audits, and Contracts Services Team - LM 12

I. Colbert, Financial Management Specialist
J. Chinkhota, Financial Analyst
J. Austin, Project Controls Analyst
T. Johnson, Financial Analyst
N. Pino, Financial Analyst
J. Gueretta, Management Analyst

Asset Management Team - LM 13

B. Sokolovich, Team Leader
E. Holland, Property Management Specialist
C. Haggard, Program Analyst
J. Chavez, Physical Scientist
P. Robinson, Realty Specialist
G. Cummings, Facilities Manager
D. McNeil, Realty Specialist
O. Akers, Industrial Property Manager

Office of Site Operations - LM 20

D. Shafer, Director
D. Tan, EPS Site Operations

ESHQ Group

S. Gutierrez, General Engineer
J. Damiano, Quality Assurance Specialist
T. Ribeiro, Environmental Protections Specialist

UMTRCA/NVOS Team - LM 21

A. Kleinrath, General Engineer
M. Kautsky, Hydrologist
J. Dayvault, Hydrologist
J. Nguyen, Physical Scientist
A. Denny, Physical Scientist
W. Frazier, General Engineer
B. Tsoie, General Engineer
K. Kreie, Physical Scientist
T. Jasso, Physical Scientist
D. Barr, Physical Scientist

RCRA/CERCLA/FUSRAP Team - LM 22

G. Hooten, Team Leader
S. Surovchak, Physical Scientist
C. Carpenter, General Engineer
K. Starr, General Engineer
D. Castillo, General Engineer
S. Smiley, Physical Scientist
J. Murl, Physical Scientist
A. Keim, Physical Scientist
B. Zimmerman, Physical Scientist

Uranium Mine Team - LM 23

D. Steckley, Physical Scientist
W. Dam, Hydrologist
B. Lewis, Physical Scientist
C. Gauthier, Physical Scientist

CURRENT LM ORGANIZATIONAL CHART

**As of
12/31/2019**

LM 1

C. Melendez, Director

LM 2

P. O’Konski, Deputy Director
T. Atkins, Program Manager
M. Downing, Environmental Justice Program Manager

Communication, Education, and Outreach Team - LM 3

K. Holmes, Supervisor
K. Edson, Public Participation Specialist
P. Benson, Program Analyst
D. Freeman, Communications Liaison
S. Montgomery, Public Participation Specialist

Executive Operations Team - LM 4

P. Poole-Shirriell, Supervisor
C. Johnson-Freeman, Program Analyst
R. King, Correspondence Specialist
E. Jackson, Staff Assistant
E. Valencia, Staff Assistant
Q. Clyburn, Program Analyst

Office of Site Operations - LM 20

D. Shafer, Director
D. Tan, EPS Site Operations

ESHQ Group

J. Damiano, Quality Assurance Specialist
T. Ribeiro, Environmental Protections Specialist
B. Stewart, Industrial Hygienist

UMTRCA/NVOS Team - LM 21

P. Kerl, Supervisor
A. Kleinrath, General Engineer
M. Kautsky, Hydrologist
J. Dayvault, General Engineer
J. Nguyen, Physical Scientist
A. Denny, Physical Scientist
W. Frazier, General Engineer
B. Tsosie, General Engineer
K. Kreie, Physical Scientist
T. Jasso, Physical Scientist

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G. Hooten, Supervisor
S. Surovchak, Physical Scientist
C. Carpenter, General Engineer
K. Starr, General Engineer
D. Castillo, General Engineer
S. Smiley, Physical Scientist
J. Murl, Physical Scientist
A. Keim, Physical Scientist
B. Zimmerman, Physical Scientist

Uranium Mine Team - LM 23

J. Glascock, Supervisor
D. Barr, Physical Scientist
B. Lewis, Physical Scientist
C. Gauthier, Physical Scientist

Office of Business Operations - LM 10

T. Smith-Taylor, Director
T. Collins, Business Operations Specialist

Archives and Information Management Team - LM 11

E. Parks, Supervisor
T. Kichi, IT Specialist
R. Walker, IT Specialist
M. Garrett, Program Analyst
J. Linard, Program Analyst
K. Brown, IT Specialist

Financial, Audits, and Contracts Services Team - LM 12

I. Colbert, Supervisor
J. Chinkhota, Financial Analyst
R. Rogers, Budget Analyst
L. Martin, Budget Analyst
J. Austin, Project Controls Analyst
T. Johnson, Financial Analyst
N. Pino, Financial Analyst
J. Gueretta, Management Analyst
C. Haggard, Financial Analyst

Asset Management Team - LM 13

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P. Robinson, Realty Specialist
G. Cummings, Facilities Manager
D. McNeil, Realty Specialist
O. Akers, Industrial Property Management Specialist
D. Steckley, Physical Scientist

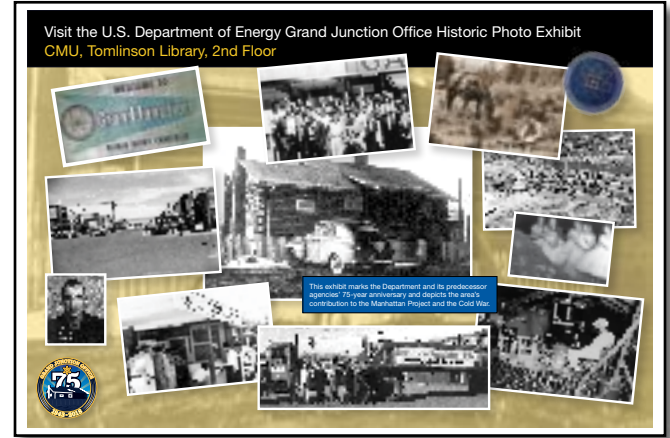
GOAL 6 Engage the Public, Governments, and Interested Parties

Engaging the public, governments, and interested parties is a high priority for our agency. This is accomplished through strategic outreach, interpretive services, and participation in environmental justice efforts. Outreach often takes the form of person-to-person interaction between LM and community members at open houses, site tours, and interpretive centers.

Selected Public Engagement

LM Displayed Historical Photo Exhibit at Colorado Mesa University

LM installed an exhibit, titled “DOE Grand Junction Office Marks 75 Years of Contribution to the Nation’s Defense Program,” at the Colorado Mesa University Tomlinson Library in Grand Junction in January. The exhibit displayed photos of western Colorado and its residents during World War II through the Cold War uranium boom. It also documented ongoing cleanup efforts and addressed the environmental legacy of uranium in the area.



New Mexico Congressional Staff Toured Bluewater Site

New Mexico’s U.S. Congressional delegation staff toured the Bluewater, New Mexico, Disposal Site on May 15. Participants included field representatives for Senator Martin Heinrich, Senator Tom Udall, Representative Debra A. Haaland, and Representative Ben Luján. In addition to the tour, LM and LMS personnel briefed the congressional staffers on several topics.

Local Officials Toured the Canonsburg Site

On May 31, LM provided a tour of the Canonsburg, Pennsylvania, Disposal Site to Pennsylvania State Senator Camera Bartolotta (46th District), borough of Canonsburg Mayor David Rhome, and Pennsylvania Department of Environmental Protection Bureau of Radiation Protection staffer Dwight Shearer. The senator was especially interested in learning more about the history of the site and how her office might work with LM and the borough to better inform the public about the site.

Freshman Colorado Representative’s Staff Toured Rocky Flats

Four staff members from the office of U.S. Representative Joe Neguse toured the Rocky Flats site in Colorado on August 7. Elected in 2018, Neguse represents Colorado’s 2nd Congressional District, which includes the Boulder area. LM staff provided a high-level overview of the site history, cleanup efforts, treatment systems, and ongoing monitoring and maintenance activities; USFWS staff provided information on the adjacent Rocky Flats National Wildlife Refuge.



Left to Right: Cliff Carpenter (LM), Dwight Shearer (DEP), State Senator Camera Bartolotta, and Mayor David Rhome



LM Updated Stakeholders at NRC Grants Mineral Belt Public Meeting

On September 18, LM UMTRCA site managers participated in the annual Grants Mineral Belt Public Meeting at the Cibola County Building, hosted by U.S. Nuclear Regulatory Commission (NRC), in Grants, New Mexico. Managers updated stakeholders on long-term stewardship activities by LM at the Bluewater site and the Bluewater Plume and High Pumping Wells Reports.

Bluewater Site Annual Public Tour

The UMTRCA LM site manager and LMS site lead conducted the annual public tour at the Bluewater site on October 24. Community members have continued to express interest in public tours, which LM began offering in 2018. The cell tour increases the public's awareness of what has occurred at the site in the past and proposed activities for the future.

Tribal Engagement Highlights

Tuba City Site Tour Hosted for University of Arizona Graduate Students

Five graduate students from the Indigenous Food, Energy, and Water Security and Sovereignty program at the University of Arizona (UA), two journalism students, and a university employee toured the Tuba City, Arizona, Disposal Site on March 8. A UA environmental engineering Ph.D. student from Tuba City, whose family still lives in the area, requested the tour. The site hosts many middle school tours, but this was the first tour by a group of university students.

LM Conducted Site Tour and Presentation to DURAC Members in Tuba City

LM staff attended the Navajo Nation Council's Diné Uranium Remediation Advisory Council (DURAC) meeting at the Chapter House in Tuba City, Arizona, on May 16. LM officials presented a status update on long-term stewardship activities and conducted a site tour of the disposal cell near Tuba City. DURAC meets in Navajo communities affected by uranium to listen to the concerns of tribal communities and to take the information back to the Council to implement recommendations for policies, laws, and regulations.

LM Hosted Two Uranium Workshops for Navajo Nation Communities

LM staff and LMS contractors participated in two pilot "Uranium 101" workshops for Navajo Nation community members. Approximately 85 people in total attended the workshops held at the Mariano Lake Chapter House, near Gallup, New Mexico, on June 22, and at the Cove Chapter House outside of Shiprock, New Mexico, on July 10. A third workshop is scheduled for March 2020 in Cameron, Arizona.

Presentation to the Eastern Shoshone Tribal Council

In June, Site Manager Bill Frazier presented to the Shoshone Tribal Council about the Riverton, Wyoming, Site, which is located on the Wind River Reservation of the Eastern Shoshone and Northern Arapaho tribes. The site is the location of a former uranium and vanadium ore processing mill that operated from 1958 to 1963.

Recruiting and Outreach at the Nation's Largest American Indian College and Career Fair

LM staff participated in the American Indian Science and Engineering Society (AISES) Conference from October 10-12 in Milwaukee, Wisconsin. The AISES Conference focuses on educational, professional, and workforce development among indigenous students and has become the premier event for American Indian science, technology, engineering, and math students and professionals. As the largest American Indian college and career fair in the nation, it attracted more than 2,200 attendees from across the country. LM hosted an activity to build and test straw and balloon "rockets" that encouraged the students to consider the impacts of drag, friction, propulsion, and aerodynamics, as they tried to send their rockets the farthest on a 75-foot line of string.



Science, Technology, Engineering, and Math (STEM) Outreach

LM Collaborated with Navajo Nation Abandoned Mine Program on STEM Activities

More than 300 students from Piñon High School in Piñon, Arizona, learned about uranium legacy sites on the Navajo Nation and Hopi Reservation on January 24. The high school welcomed LM to share information about STEM concepts at the event. This outreach was possible through LM collaboration with the Navajo Nation Abandoned Mine Lands program.

Students Participated in STEM Event at Fernald Reserve

In March, more than 100 sophomore honors chemistry students from Kings High School in Cincinnati, Ohio, visited the Fernald Preserve as part of their research on nuclear chemistry, specifically addressing the question of whether the United States should pursue nuclear chemistry for power generation and other applications.

LMS Staff Made STEM Concepts Fun for Grand Junction Elementary Students

On March 7, Thunder Mountain Elementary School's Math and Science Night drew more than 250 people and included 15 interactive booths. LMS presented three booths at the event with hands-on activities that encouraged interaction between students and scientists.

STEM Outreach at Thunder Mountain Elementary

STEM Careers Encouraged by DOE-Sponsored National Science Bowl

The 2019 Greater Cincinnati Regional Science Bowl competition sponsored by the EM Consolidated Business Center and the Cincinnati State Technical and Community College was held March 2.

- Fernald Preserve employees supported the event with an exhibit where staff members engaged with students about STEM careers available in LM.
- They also described the public amenities and educational programs available at the Fernald Preserve.
- The 2019 Science Bowl theme was "Women in Science."

LM Participated in STEM-sation Day at Ganado High School

LM personnel and support staff engaged with Ganado High School students in Ganado, Arizona, as part of STEM-sation Day events on April 26. More than 5,500 students, grades nine through 12, participated from eight different high schools within the Navajo Nation.

LM participants provided students with hands-on materials and information about LM work at various sites within the Navajo Nation and the Bluewater site.

LM Participated in Youth Summer Program at Laguna Pueblo

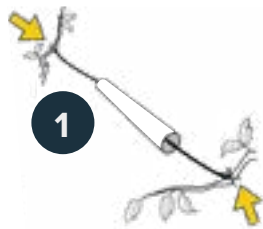
LM personnel participated as instructors for the 2019 Together Raising Awareness in Laguna Summer Youth Prevention Program on June 13. Children, ages 10-18, from the Laguna Pueblo — a community of stakeholders impacted by the L-Bar and Bluewater sites — participated in STEM activities that included balloon races (velocity and friction), an L-Bar erosion project, a Bluewater project, an oil/water environmental problem, and a yo-yo potential energy demonstration.



STEM-sation Days Attracted Thousands of High School Students on Navajo Nation

STEM-sation Days were hosted at various high schools throughout the Navajo Nation. Each high school spent an hour in the school gym visiting the participating agency booth spaces. LM and LMS worked together alongside other agencies to provide STEM demonstrations.

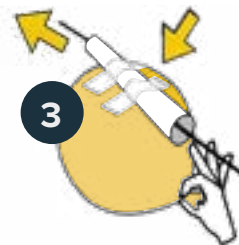
- STEM activities this fall included the yo-yo potential energy, balloon rocket, and hydrology and animated plume demonstrations.
- Approximately 700 kids participated daily at each of the following events: Miyamura High School in Gallup, New Mexico (August 29); Monument Valley High School in Kayenta, Arizona (September 29); Chinle High School in Chinle, Arizona (October 24); and Page High School in Page, Arizona (November 21).



1
THREAD YOUR STRING THROUGH THE STRAW AND TIE THE ENDS OF THE STRING TO TWO FIXED POINTS.



2
BLOW UP THE BALLOON, BUT DO NOT TIE IT AT THE END.



3
CAREFULLY TAPE THE BALLOON TO THE TUBE WITHOUT LETTING ANY AIR ESCAPE. ONCE THE BALLOON IS ANCHORED, LET IT GO!

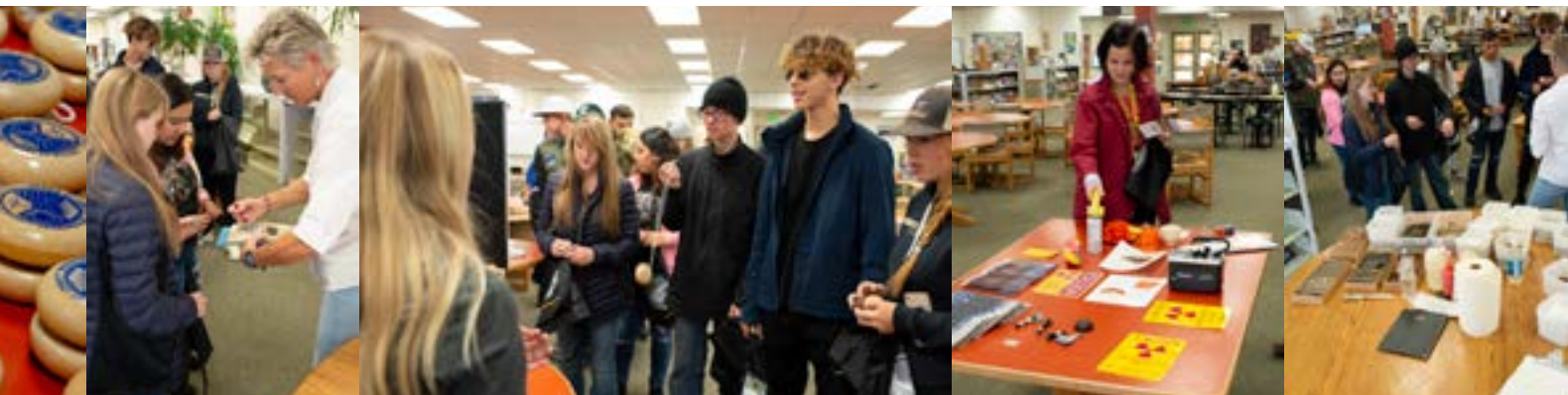
LM Engaged Elementary Students about Mines

On October 28, Defense-Related Uranium Mine Team members presented to approximately 80 Tope Elementary School students in Grand Junction, Colorado. They discussed the DRUM program, so students could learn what happens when a mine is abandoned or no longer in use.

Mesa County Commissioners Proclaimed October 14-18 Nuclear Science Week

On October 15, LM and LMS staff met with the Mesa County Board of County Commissioners in Grand Junction, Colorado, to talk about LM STEM efforts in the county.

- The commissioners proclaimed October 14-18 as “Nuclear Science Week” in Mesa County.
- LM hosted a series of STEM Expo events at local high schools that focused on nuclear science, energy, radiation, soil science, ecology, and botany, as well as the opportunity to explore STEM careers.
- LM scientists and experts were available to discuss all aspects of nuclear science, hand out free giveaways, and teach students about the new Atomic Legacy Cabin interpretive center.



Diné College’s Annual STEM Fest in Tsaile, Arizona

The two-day event was hosted by the Diné College’s Land Grant Extension Office on November 13 and 14.

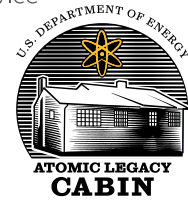
- During the first day, the LM team explained Newton’s three laws of motion to fifth through eighth graders by using balloon rockets.
- On the following day, high school students learned about the various forms of energy via the yo-yo demonstration.
- About 700 students attended the festival.

LM Interpretive Center Highlights

LM has several sites that are regularly open to visitors: Weldon Spring, Missouri; Fernald, Ohio; and Grand Junction, Colorado. LM visitor and interpretive centers provide valuable information to affected communities about the history of LM sites, their cleanups, and ongoing long-term stewardship work. LM also collaborates with other organizations at multiple public interpretive centers related to the mission of LM.



WELDON SPRING SITE
A Legacy of Service



Envirothon: Fernald Preserve Alive With Learning

On April 25, more than 500 high school students and teachers descended on the Fernald Preserve site for the 2019 Region IV Envirothon. The annual event is for high school students who participate in competitive testing on a myriad of natural resource topics.

- Eighty-seven teams, each composed of five students and an advisor, participated in the Envirothon, which encourages group problem solving and team building among student competitors who are poised to become the next generation of environmental leaders.
- The competition was sponsored by the Ohio Federation of Soil and Water Conservation Districts and the Ohio Department of Agriculture, Division of Soil and Water Resources.

LM, USACE Broke Ground on New Interpretive Center at Weldon Spring Site

On May 9, LM and USACE St. Louis District celebrated the beginning of construction of a new interpretive center and administrative office space at the Weldon Spring, Missouri, Site in St. Charles County. USACE provided technical assistance with the design and construction of the new \$7.4 million facility through a support agreement with LM.

- Speakers included LM Director Carmelo Melendez and USACE St. Louis District Colonel Bryan K. Sizemore.
- Approximately 60 second-grade students from McKelvey Elementary School, who were on a field trip to the site, joined the group to assist in the groundbreaking shovel commemoration.
- When open to the public, the new facility will have updated exhibits, an auditorium, four student classrooms for STEM education, and office space.



LM Unveiled the Atomic Legacy Cabin

On June 6, LM hosted a ribbon-cutting ceremony for the Atomic Legacy Cabin, a new interpretive center located at the Grand Junction, Colorado, office. The cabin once was the epicenter of the nationwide search for uranium that was started by the Manhattan Project and later escalated during the Cold War.



Take Me Out to the Ball Game

The Grand Junction Rockies baseball team hosted its third annual Atomic Workers Appreciation Night in recognition of former DOE employees at Suplizio Field in Grand Junction, Colorado, on August 9. LMS staff managed an outreach booth at the event on behalf of the Atomic Legacy Cabin. About 300 baseball fans visited the booth to learn more about the cabin.

LM Renewed Fernald Preserve Beetle Recovery Agreement

In February, LM renewed its agreement to participate in a recovery program for the federally endangered American burying beetle at the Fernald, Preserve, Ohio, Site.

- An agreement with USFWS and the Cincinnati Zoo signed in 2017 allows beetles raised by the Cincinnati Zoo to be released at the Fernald site annually through 2022.
- Annual public programs are offered to allow community members to see and learn about the program and site collaboration with USFWS and the Cincinnati Zoo.

LM-Funded Exhibit at SRS Museum Shared Stories of Residents Displaced for Nuclear Facility

The Savannah River Site (SRS) Museum in Aiken, South Carolina, celebrated its reopening on October 30 with “6,000 Stories,” a new permanent exhibit, fully funded by LM, that shares the accounts of individuals displaced almost 70 years ago to make way for the former nuclear weapons material production site. The interactive exhibit allows museum guests to dig deep into the history of Ellenton, Dunbarton, and other towns lost to the 310-square-mile site by directly listening to the stories of displaced residents.

Manhattan Project National Historical Park Highlights

The Manhattan Project National Historical Park is managed through a collaborative partnership by the U.S. National Park Service (NPS) and DOE to preserve, interpret, and facilitate access to key historical resources associated with the Manhattan Project. The park incorporates three of the most significant Manhattan Project sites: Oak Ridge, Tennessee; Los Alamos, New Mexico; and Hanford, Washington. The various interpretive centers associated with the park system are operated by several different organizations. LM has a coordinating role for the park within DOE.

Oak Ridge, Tennessee

Tours

DOE offered public bus tours March through November.

Building Upgrades

The National Nuclear Security Administration funded and implemented upgrades at Building 9731 (Y-12), which support future mission as a training facility. Changes were made in consultation with NPS and the Tennessee State Historic Preservation Officer and will preserve the historic assets in the building.

American Museum of Science and Energy (AMSE)

AMSE relocated to Main Street Oak Ridge in fall 2018, with new exhibits that include the Manhattan Project, Big Science, National Security, and Environmental Cleanup. Video tours created for Buildings 9731 and Beta-3 are available for viewing at AMSE.

Los Alamos, New Mexico

Tours

Public tours were offered in April, July, and October. Tours visited the Pond Cabin, which served as an office for Emilio Segrè's Radioactivity Group studying

plutonium; a battleship bunker used to protect equipment and staff during implosion explosives design testing; and the Slotin Building, site of Louis Slotin's criticality accident.



Technical Assistance from NPS

In partnership with Bandelier National Monument Historic Preservation Crew, the Los Alamos National Laboratory (LANL) funded and developed a historic preservation assessment of the Pond Cabin. Also, based on an interagency agreement, LANL will perform repairs on Pond Cabin and Slotin Building.

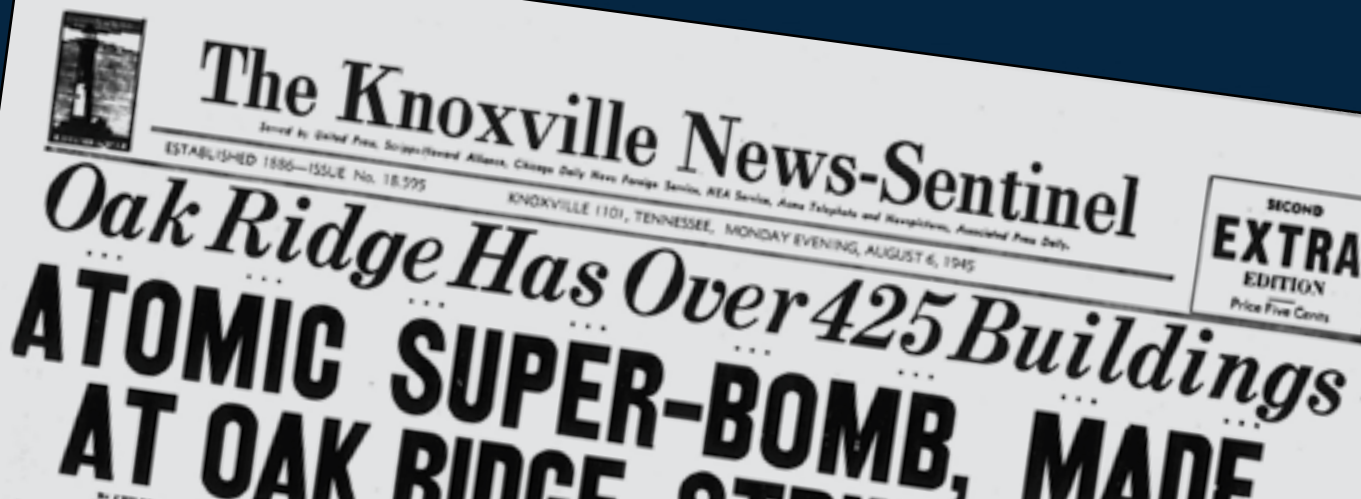
Hanford, Washington

Tours

DOE offered public tours of the B Reactor and the pre-Manhattan Project sites six days per week May through November 2019.

Events

DOE invited the public to a "Ride the Reactor" bicycle ride and a performance by the Mid-Columbia Master Singers inside the B Reactor.



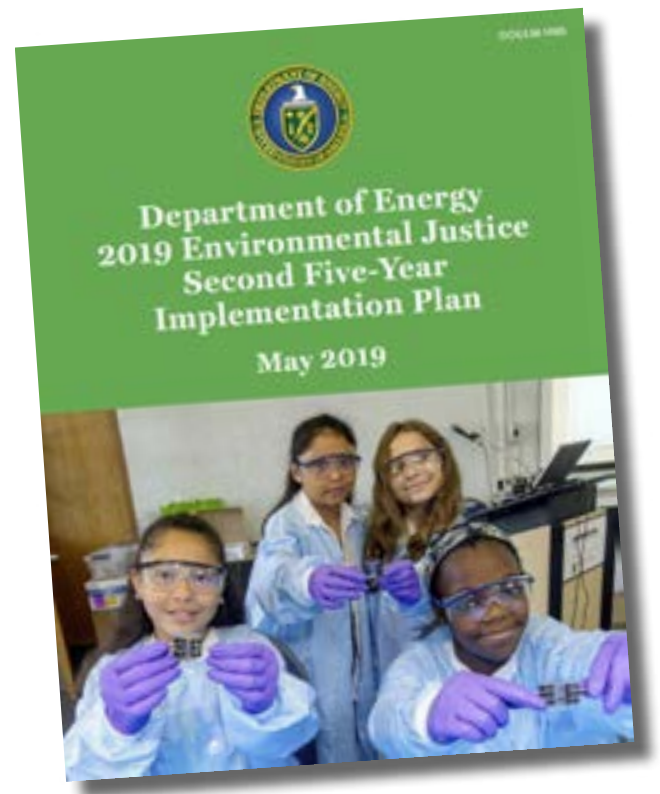
Environmental Justice

2019 National Environmental Justice Conference and Training Program

Approximately 400 participants attended more than 40 technical assistance workshops and training sessions at the 13th National Environmental Justice Conference and Training Program, titled “Education, Learning, and Cooperation in a Diverse World,” in Washington, D.C., on March 13-15. The conference explored the needs and challenges of communities, governments, municipalities, tribes, faith-based organizations, and others with an interest in environmental justice. LM Deputy Director Peter O’Konski spoke during the opening day luncheon.

Environmental Justice Five-Year Implementation Plan Published

In May, DOE published the *2019 Environmental Justice Second Five-Year Implementation Plan*. The plan establishes environmental justice commitments by DOE and implements the goals and objectives of the DOE Environmental Justice Strategy, which complies with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.



Cultural Resource Management

National Historic Preservation Act (NHPA) of 1966 Compliance Data

Section 106 of the NHPA requires federal agencies to consider the effects of their work on historic properties. Agencies must grant the Advisory Council on Historic Preservation a reasonable opportunity to comment. If the responsible federal agency determines its work could potentially affect historic properties, it must consult with the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO).

LM initiated the Section 106 consultation process 17 times in 2019. LM completed the majority of these consultations in 2019. One consultation effort resulted in a finding of adverse effect to historic property if the demolition alternative is selected for the Piqua, Ohio, Decommissioned Reactor Site. Some projects required consultation with both SHPO and THPO/Tribal representatives. Some undertakings, such as the ongoing Piqua project, required more than one letter on the topic; some SHPOs were consulted for more than one site in 2019. For example, the Colorado SHPO was consulted five separate times for three different locations.

LM initiated Section 106 consultations with eight SHPOs, one THPO, and three tribes for 15 LM sites:

LM Site	Consulted Historic Preservation Officers and Tribes
Ambrosia Lake, New Mexico	New Mexico SHPO
Bluewater, New Mexico	New Mexico SHPO
Conquista, Texas	Texas SHPO
Falls City, Texas	Texas SHPO
Grand Junction, Colorado, office	Colorado SHPO
Grand Junction, Colorado, Disposal Site	Colorado SHPO
Lakeview, Oregon	Oregon SHPO, Burns Paiute Tribe, Klamath Tribes, and Fort Bidwell Paiute Tribe
L-Bar, New Mexico	New Mexico SHPO
Monticello, Utah	Utah SHPO
Panna Maria, Texas	Texas SHPO
Parkersburg, West Virginia	West Virginia SHPO
Piqua, Ohio	Ohio SHPO
Ray Point, Texas	Texas SHPO
Shiprock, New Mexico	Navajo Nation THPO
Uranium Leasing Program (Hawkeye Ore Bin)	Colorado SHPO

LM conducts archaeological surveys to identify if there are any prehistoric and historic archaeological resources that could be affected by an undertaking when necessary. LM completed one archaeological survey in 2019.

- LM completed a 25-acre archaeological survey of the Lakeview, Oregon, Disposal Site. The non-disposal cell portion of the site and the adjacent wells located on private property were surveyed for archaeological resources; none were found. The survey results were shared with the Oregon SHPO and three federally recognized tribes.
- LM is continuing to consult with the Ohio SHPO, the Miami Tribe of Oklahoma, Heritage Ohio, and city of Piqua, regarding the decommissioned reactor in Piqua. The consultation is to address the possible demolition of the reactor building, which was determined by LM to be historic property in 2017.

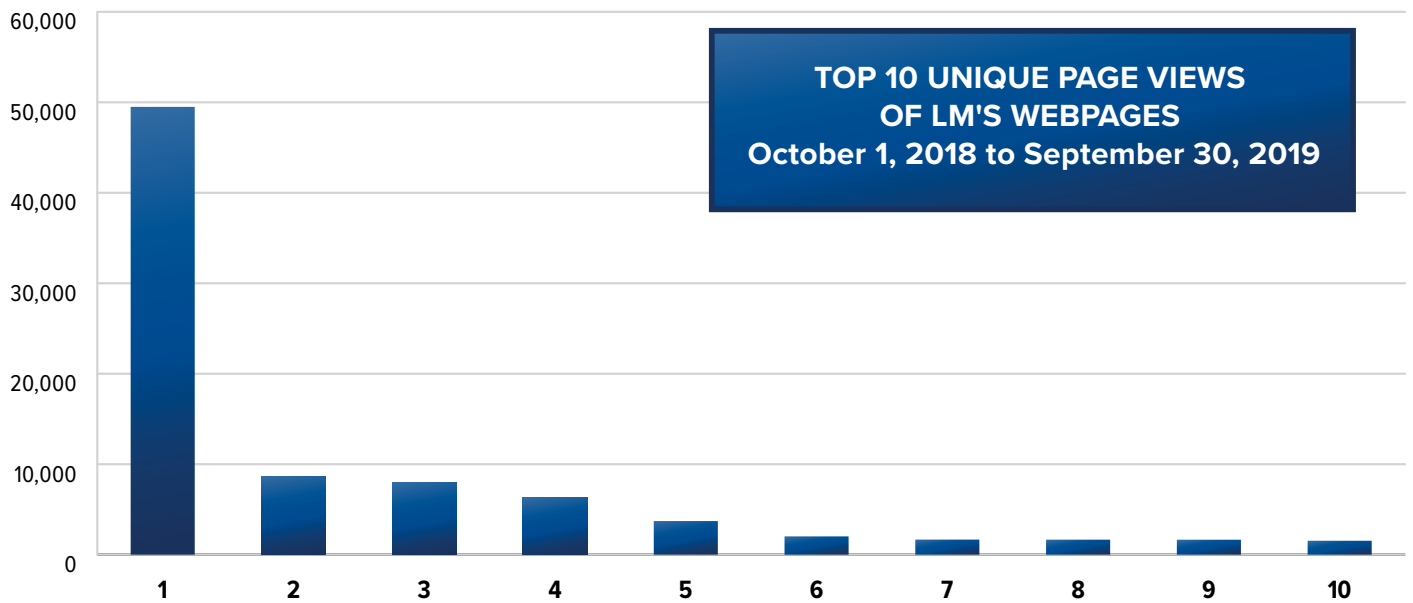
Section 110 of the NHPA of 1966 asks all federal agencies to establish historic preservation programs for the identification, evaluation, and protection of historic properties.

- A draft historic property survey was completed for the Rulison, Colorado, Site.

Website Visits

123LogAnalyzer and Google Analytics Statistical Software track information about visitors to the LM website. These tools report visitors, unique IP addresses, page views, and download numbers. Website traffic varies based on issues, concerns, and media attention throughout the year. During the evaluation period, 38,569 users (31,900 new users) visited the LM website and generated 177,372 page views (125,857 unique page views). Users spent an average of 2 minutes and 43 seconds and viewed an average 1.95 pages per visit.

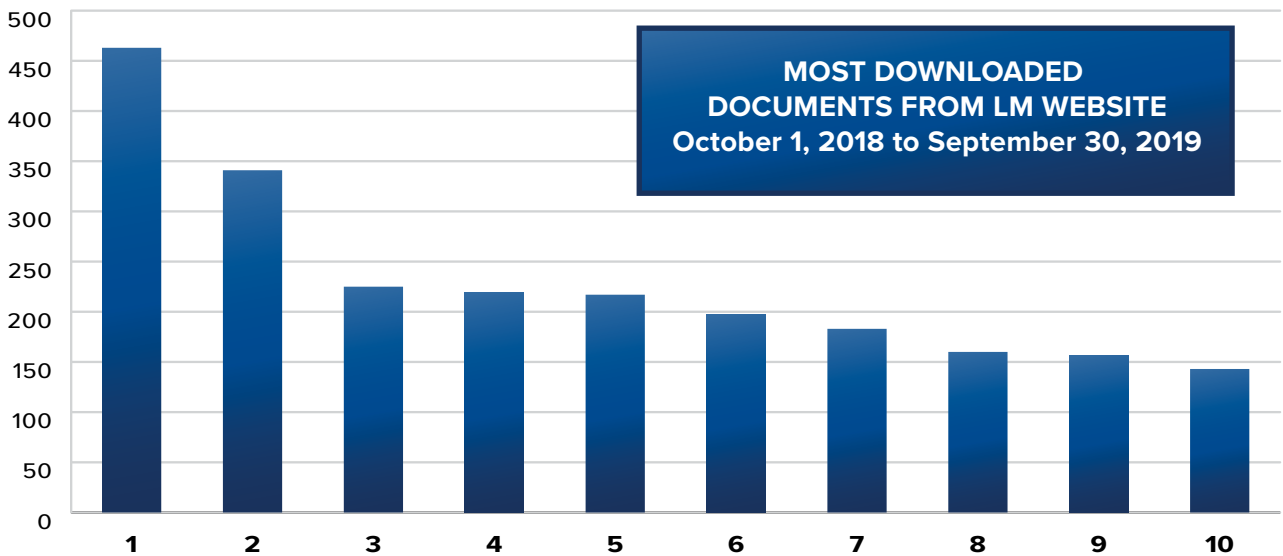
The LM website is subject to visits by internet bots that systematically browse the internet to create indexes and for other reasons. Visits from these bots could not be removed from this analysis and therefore we know the number of reported visits is higher than human visits. Data also includes visits from internal LM and LMS visitors and other internal systems that generate web traffic.



PAGE RANK	UNIQUE PAGE VIEWS	PAGE NAME
1	49,497	Office of Legacy Management Homepage
2	8,639	LM Sites
3	7,960	What Is Environmental Justice?
4	6,291	Environmental Justice History
5	3,719	About Us
6	2,023	Sites
7	1,669	Legacy Site Programmatic Framework
8	1,661	Resources
9	1,655	Programs and Services
10	1,541	Mission



Visitors from the United States accounted for 36,245 visitors to LM website.



Data consists of downloads from Drupal (our content management software) webpages through Google Analytics.

DOCUMENT	DOWNLOADS	CONTENT
1	463	LM Site Management Guide
2	341	UMTRCA Sites Fact Sheet
3	225	LM 2016-2025 Strategic Plan
4	219	LM Program Update Q1 2019
5	217	LM FUSRAP Fact Sheet
6	197	LM Program Update Q4 2018
7	183	LM Program Update Q3 2018
8	160	LM Organization Chart
9	156	Defense-Related Uranium Mines Program Fact Sheet
10	143	2018 Annual Historical Summary

Media Coverage

Formerly, the news-gathering process involved monitoring news of LM sites and relevant topics using Google Alerts and sending out news clips on an ad hoc basis. Under the new process, LMS continues to use Google Alerts to monitor news, but collects clips throughout the week and compiles them into a weekly digest, which LMS sends out to staff every Thursday afternoon. This streamlined approach allows LM to provide staff with a weekly snapshot of news coverage that can also be fed into the Monthly Media Report.

The monitoring of media interviews captures known occasions when an LM staff member is interviewed by the media. It does not capture encounters between staff and media, such as requests for information or informal conversations, that do not result in publication.

With the current tracking system, LM and LMS do not have the capacity to list individual LM media interviews that took place during FY 2019. A newly procured news media and social media monitoring subscription will enable more thorough

and precise media monitoring and tracking, as well as more sophisticated presentation and analysis. These enhanced features will inform the FY 2020 version of this report.

The “Assorted” category of the 2019 Trending Sites in the News report is a relic of the former monitoring system. With the new platform, LM will track and display media coverage of every individual site, allowing for a higher level of detail.

LM Media Interviews During FY 2019

Fernald Preserve, Ohio, Site: 2

Grand Junction, Colorado, Atomic Legacy Cabin: 2

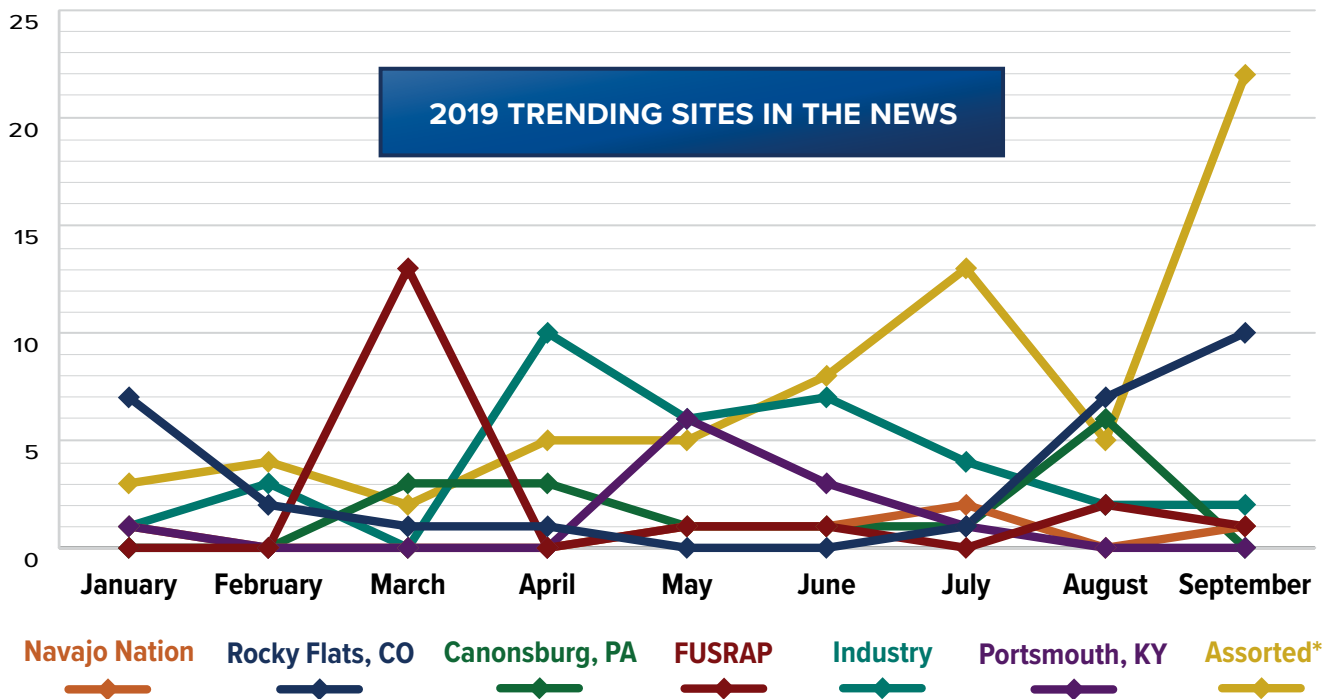
Rulison, Colorado, Site: 2

Shiprock, New Mexico, Disposal Site; 2

Durango, Colorado, Disposal and Processing Sites: 1

Bluewater, New Mexico, Disposal Site: 1

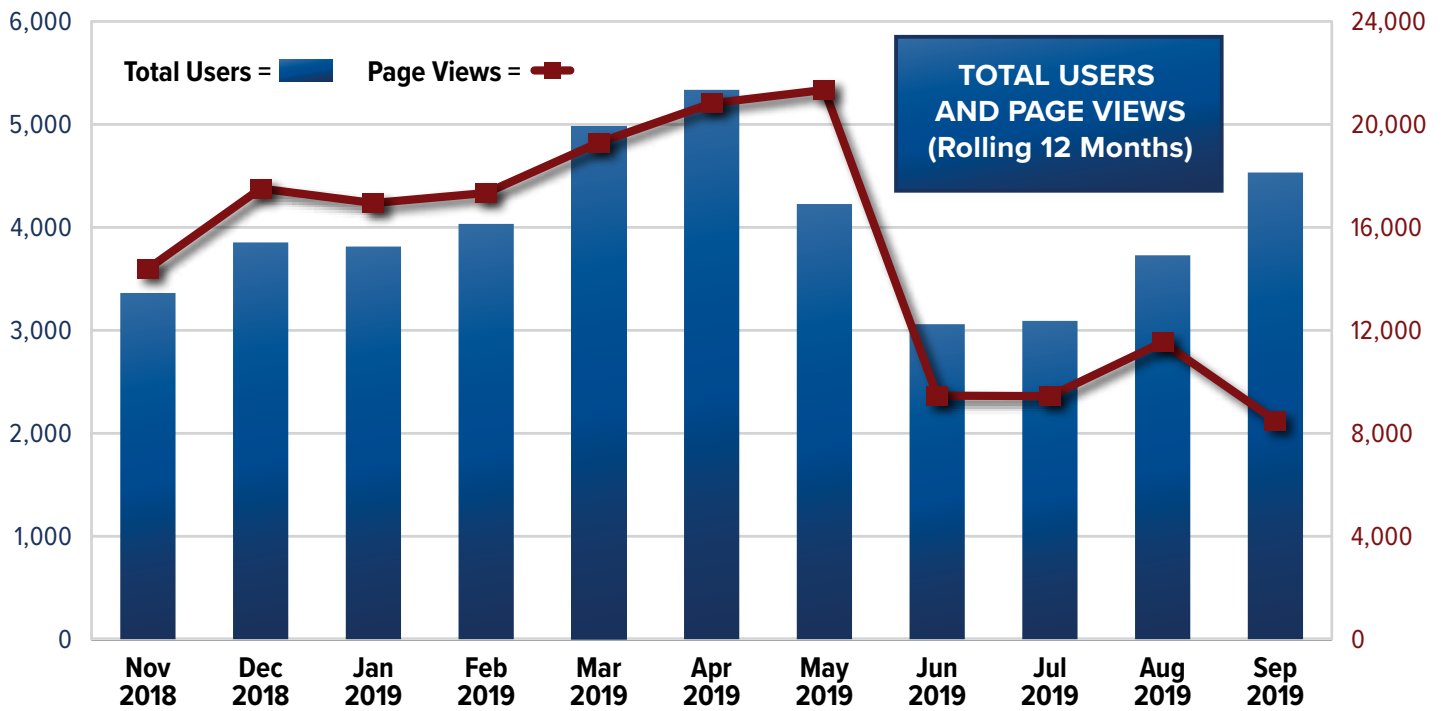
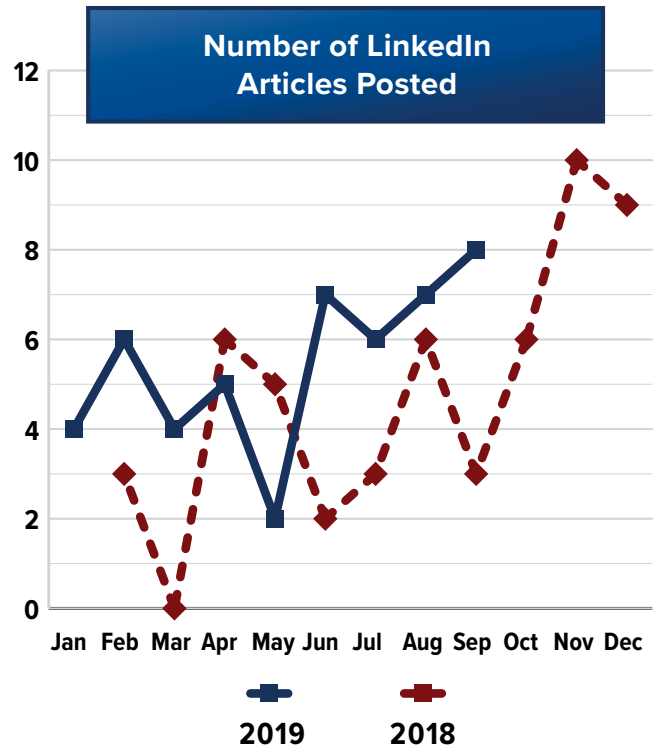
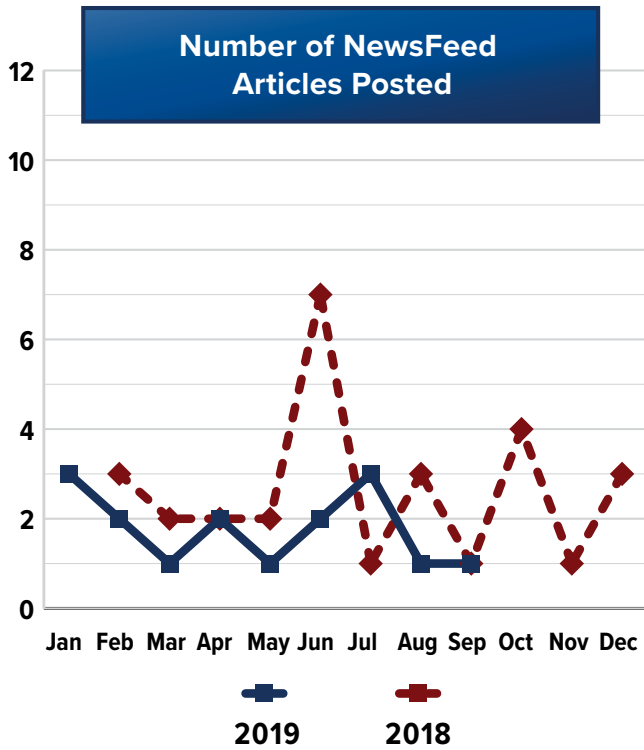
Amchitka, Alaska, Site: 1



Other LM sites and projects not included in this chart.

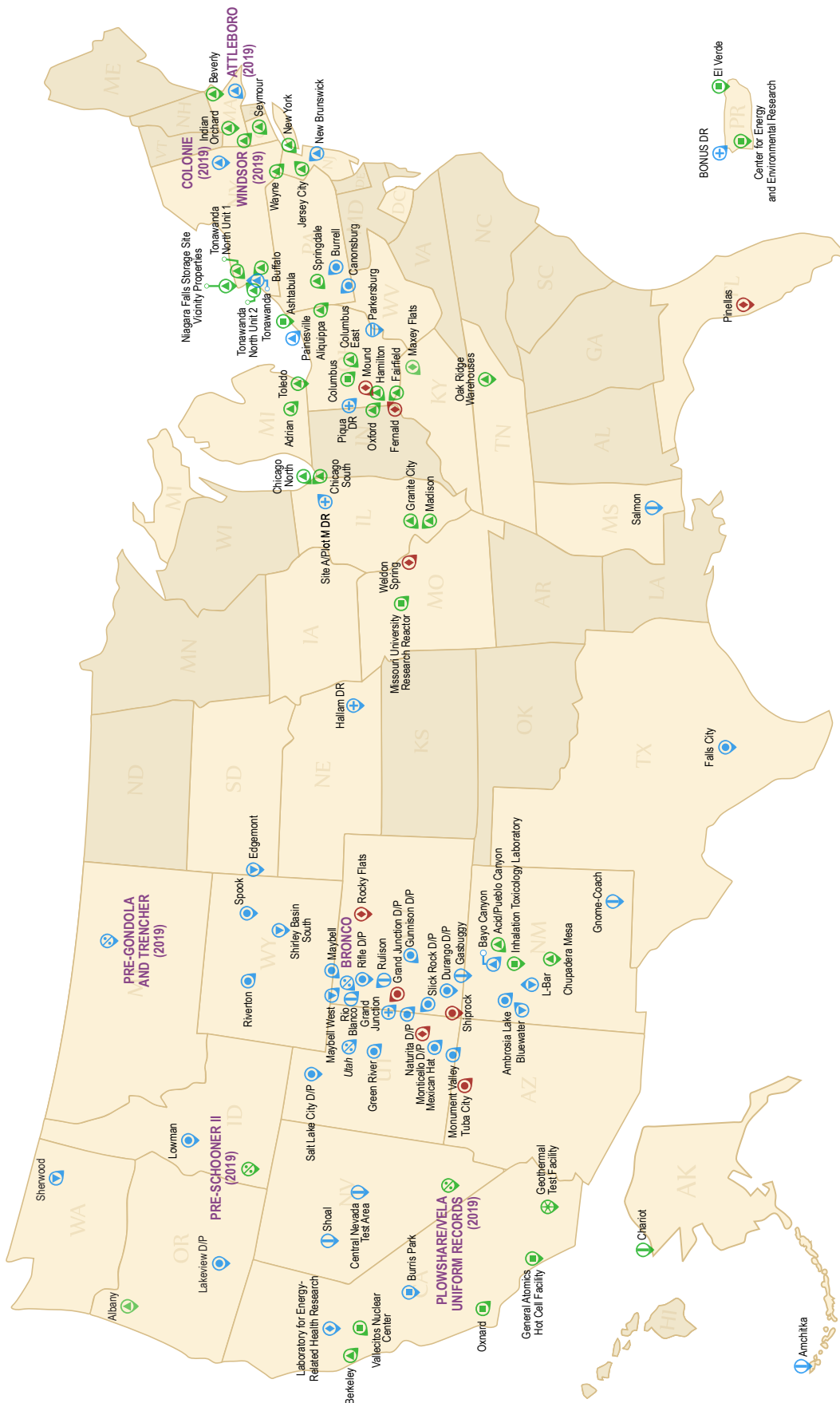
This chart represents the percentage of times (out of a total of 217) that each site shown was mentioned in the news. Although Portsmouth is not currently an LM site, it is a key transition site that was recognized in the media.

Digital Presence



The decrease in page views during the summer months seems to be an annual phenomenon, likely due to users spending more time outdoors during the warmer and longer days.

2019 SITE MAP



Sites in LMI Requiring LTS&M (as of September 30, 2019)

Category 1 activities typically include records-related activities and stakeholder support

Category 2 activities typically include routine inspection (any site visit needed to verify the integrity of engineered or institutional barriers) and monitoring/maintenance, records-related activities, and stakeholder support

Category 3 activities typically include operation and maintenance of active remedial action systems, routine inspection (any site visit needed to verify the integrity of engineered or institutional barriers) and monitoring/maintenance, records-related activities, and stakeholder support

DIP = Disposal/Processing DR = Decommissioned Reactor

PROGRAM UPDATE ARTICLES BY ISSUE

Quarter 1

- Safe Passage: Wildlife-Friendly Fencing Gains Momentum at LM Sites
- STEM Careers Encouraged by the DOE-Sponsored National Science Bowl
- LM Shares Ideas and Lessons Learned at the 45th Annual Waste Management Conference
- Tuba City Site Hosts Tour for University of Arizona Graduate Students
- LM Takes on Stewardship at Two New FUSRAP Sites
- LM Shares Lessons Learned in Environmental Data Management
- LM Makes STEM Concepts Fun for Elementary Students
- GEMS Mapping Data Integrated into EPA Cleanups in My Community Website
- LM Women Celebrated During Women's History Month
- Colorado STEM Events Feature Plants, Soil, and Yo-Yos
- Grand Junction Office Displays Historical Photo Exhibit at Colorado Mesa University
- LM Evaluates Use of Unmanned Aerial Systems for LTS&M



Quarter 2

- LM Site Manager Delivers Atomic History Presentation to Retired Federal Employees
- Students Dive into STEM at Fernald Preserve
- An Apatite for Uranium: Taking a Bite Out of a Persistent Groundwater Contaminant
- Director Melendez, LM Staff Tour FUSRAP Sites in St. Louis
- Bluewater Site Manager Inspires High School Students to Explore Science Careers
- Rocky Flats Records Transferred to LMBC
- LM Conducts Site Tour and Presentation to DURAC Members in Tuba City
- Geotechnical Sampling in Mexican Hat
- DOE, USACE Break Ground on New Interpretive Center at Weldon Spring Site
- Weldon Spring Timeline
- Students Explore STEM Lessons During Weldon Spring Groundbreaking
- Coming in 2020 – The New Weldon Spring Site Interpretive Center
- Legacy Management Hosts National Laboratory Meeting
- New Mexico Congressional Staff Tour Bluewater Site
- Miamisburg Mayor Honored for Role in Economic Development at Mound Site



Quarter 3

- Fernald Preserve Wins EPA Site Reuse Award
- LM Unveils the Atomic Legacy Cabin
- Atomic Legacy Cabin Sparks Outreach in Grand Junction
- We Have a Tie! Two Winners of the Philip C. Leahy Employee of the Year Award
- Colorado Mesa University Internship at the Grand Junction Office: New Frontiers on a Microscopic Scale
- Legacy Management Interns Gain Experience, New Perspectives
- The Savannah River Site Museum and Heritage Foundation Visit
- Geochemical Tracer Testing to Better Understand Contaminant Transport Processes
- International Educational Outreach at the University of the Witwatersrand in Johannesburg, South Africa
- LM Leadership Tours Nevada Offsites
- K-25 History Center Coming Soon
- New Gasbuggy Interpretive Signs
- BONUS, Puerto Rico Records Management Project – A Successful Records Recovery Effort
- LM Staff Tours Northeast FUSRAP Sites
- LM Strengthens Stakeholder Involvement Through Annual Rocky Flats Tour
- DOE Participates in Inaugural “Going Green with Deb” Event
- Conservation Reuse Efforts at Pennsylvania Sites
- Records Transfer Completed for Northeast FUSRAP Sites
- LM and EM Sign Memorandum of Understanding



Quarter 4

- LM Marks Its 100th Site
- Contamination Connoisseur – Dr. Higley Explains Radiation Complexities Across the Country
- LM Achieves First Unconditional Closure of Legacy Site
- From Weapons Production to Business Development
- 3D Hydrogeological Visualizations Bring Data Analysis to Life
- Developing an Aviation Program for Unmanned Aircraft Systems
- Stakeholder Communication and Collaboration Are Key to Site Management
- LM Participates in International Symposium in Germany
- IAEA Explores Concept of Social License in Remediation of Legacy Sites
- Competition Readies the Next Generation of Cybersecurity Professionals
- Grand Junction Office Celebrates International Nuclear Science Week
- LM Plays Integral Part in Grand Junction River Park
- Campus-Style Plan Revealed for New Grand Junction Office
- Going Pink for Breast Cancer Awareness
- LM Engages Community with Public Meeting and Tour of the Bluewater Site
- Warm Welcome for the First DOE LM Fellows from Florida International University
- Tour Highlights Range of LM Programs in the Uravan Mineral Belt
- Collaboration Key to Success of the Formerly Utilized Sites Remedial Action Program
- LM Engages Community in Upstate New York
- Fernald Preserve Wins EPA Award for Beneficial Reuse
- Combined Federal Campaign Offers Opportunity to Give Back
- National Park Foundation Seeks Support for the Manhattan Project National Historical Park
- The Year in Review for Legacy Management



2019: A YEAR IN PICTURES



1



2



3



4



5



6



7



8

1. LM personnel at the 45th Annual Waste Management Conference in Phoenix, Arizona.
2. Kevin McCarthy (LMS interpretive center manager), Alice Wolf (community member), and Carmelo Melendez (LM director) serve cake during the reception following the new Weldon Spring Interpretive Center groundbreaking ceremony.
3. Ki'Ana Speights (left) and Alyssa Renteria (right) forged a strong friendship during their internship at the Grand Junction, Colorado, office.
4. LMS Site Lead Pete Lemke, LM Public Participation Specialist Karen Edson, and LM Site Manager Mark Kautsky attend the Tuba City Chapter House DURAC regular meeting.
5. Uranium Mine Team Supervisor Jay Glascock and Technical Lead Brent Lewis with students at Tope Elementary School in Grand Junction, Colorado.
6. The DOE Fellows Class of 2019 gather for a photo with participants and guests of the induction ceremony.
7. Tania Smith-Taylor, the LM director of Business Operations, and Jon Maraschin, the executive director of the Business Incubator Center of the Riverview Technology Corporation, discuss LM's Grand Junction office expansion plans.
8. In Memoriam: Tony R. Carter.

LM BY THE NUMBERS

49,424

acres of land with long-term surveillance and monitoring

580+

total employees: roughly 80 federal employees and about 500 support services contractor personnel

100

LM sites in 28 states and Puerto Rico, creating a national program with a wide set of responsibilities

123

sites projected to be under LM's responsibility by 2025

98%

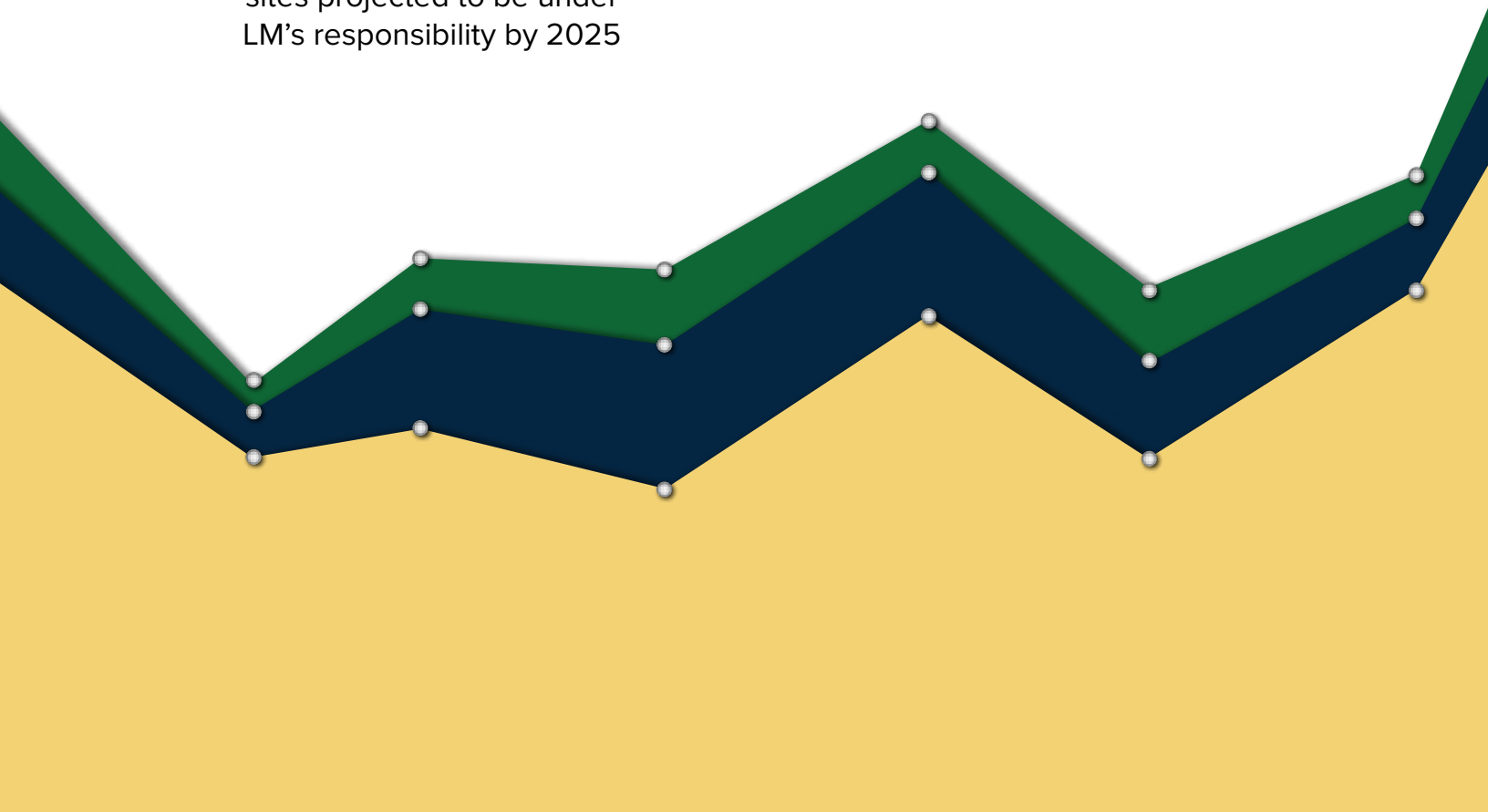
of LM properties are in beneficial reuse through partnership with other federal agencies

12,000+

retired contractor workers' commitments managed by LM

130,000+

cubic feet of non-classified records related to the Cold War nuclear legacy are kept at the Legacy Management Business Center in Morgantown, West Virginia





U.S. DEPARTMENT OF
ENERGY

Legacy
Management

 www.energy.gov/lm

 www.linkedin.com/company/legacy-management