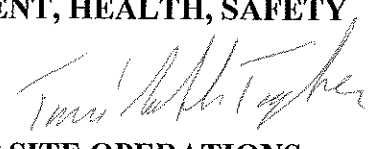




Department of Energy
Washington, DC 20585

September 30, 2016

MEMORANDUM FOR JOSH SILVERMAN
ACTING DIRECTOR, OFFICE OF ENVIRONMENTAL
PROTECTION AND ES&H REPORTING
OFFICE OF ENVIRONMENT, HEALTH, SAFETY
AND SECURITY

FROM: **TANIA SMITH TAYLOR** 
DIRECTOR, OFFICE OF SITE OPERATIONS
OFFICE OF LEGACY MANAGEMENT

SUBJECT: Annual Site Environmental Reporting for Department of Energy
Office of Legacy Management Sites (2015)

The U.S. Department of Energy Office of Legacy Management (LM) is submitting the attached *Office of Legacy Management's Summary of Annual Site Environmental Reports* for calendar year 2015 to meet the intent of DOE Order 231.1B with a scaled-down approach as identified in the Annual Site Environmental Report (ASER) preparation guidance. LM is committed to ensuring environmental protection, compliance, and sustainability in the performance of our mission, vision, and operating principles.

Please review the summary and attachments and contact Tracy Ribeiro at (303) 410-4817 if you have any comments or questions.

Attachment

cc w/ attachment:

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File: ADM 0115.02 (rc grand junction)

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U.S. DEPARTMENT OF
ENERGY | Legacy
Management



Summary of Annual Site Environmental Reports

Calendar Year 2015



LMS/S14598

Cover photo captions:

Top left: Lowman, Idaho, Disposal Site

Bottom left: Heavy equipment is used to repair road damage that occurred during an extreme weather event at the Rocky Flats, Colorado, Site.

Right inset: The Eastern Meadowlark is just one of the songbird species to find a comfortable habitat in the Weldon Spring, Missouri, Site prairie that was planted after remediation was complete.

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Attachment

Attachment 1 Legacy Management Sites and Related Reports and Summary of Groundwater Monitoring Program

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Abbreviations

AEA	Atomic Energy Act of 1954
ARAR	applicable or relevant and appropriate requirement
ASER	Annual Site Environmental Report
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	<i>Code of Federal Regulations</i>
COC	contaminant of concern
CWA	Clean Water Act
CY	calendar year
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
EISA	Energy Independence and Security Act
EMS	Environmental Management System
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
EPEAT	Electronic Product Environmental Assessment Tool
ESL	Environmental Sciences Laboratory
FFCA	Federal Facilities Compliance Act of 1992
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIMS	Facility Information Management System
FUSRAP	Formerly Utilized Sites Remedial Action Program
ISO	International Organization for Standardization
LM	Office of Legacy Management
LTS&M	long-term surveillance and maintenance
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NR	National Register of Historic Places
NRC	U.S. Nuclear Regulatory Commission
NWPA	Nuclear Waste Policy Act
POC	point of compliance

RCRA	Resource Conservation and Recovery Act
RPP	radiation protection program
RTC	Riverview Technology Corporation
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SSP	Site Sustainability Plan
TSCA	Toxic Substances Control Act
ULP	Uranium Leasing Program
UMTRCA	Uranium Mill Tailings Radiation Control Act
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1.0 Reporting Requirement

U.S. Department of Energy (DOE) Order 231.1B Admin. Chg. 1, *Environment, Safety and Health Reporting*, requires that each DOE site prepare an Annual Site Environmental Report (ASER) documenting the site's environmental conditions and compliance with DOE reporting requirements. The ASER is submitted to DOE Headquarters annually and is available to the public. DOE's *Guidance for the Preparation of the 2015 Department of Energy Annual Site Environmental Reports* for calendar year (CY) 2015, dated May 2016, recognizes that Office of Legacy Management (LM) sites have unique characteristics and suggests two alternatives to the preparation of the ASER: (1) prepare a scaled-down or streamlined version of the ASER that reflects the current nature and extent of site operations and monitoring programs, or (2) submit equivalent documentation that provides the results of the relevant environmental monitoring programs. This report is submitted to meet the intent of DOE Order 231.1B Admin. Chg. 1 with a scaled-down approach, as identified in the ASER preparation guidance, by summarizing our programmatic and site-specific environmental reporting activities.

2.0 Introduction

LM was established in 2003 to manage DOE's post-closure responsibilities at sites under DOE's care and ensure the future protection of human health and the environment at those sites. The histories of the legacy sites vary, as do the regulatory regimes under which the sites are managed. Long-term surveillance and maintenance (LTS&M) plans or equivalent documents are prepared for the majority of the sites. These LTS&M plans, which are available to the public, include site descriptions, information about site history, nature and extent of contamination, closeout condition of the site, present and future monitoring and surveillance programs, and institutional controls. Examples of the types of sites and their regulatory framework are provided below and in the following link: http://www.lm.doe.gov/pro_doc/references/framework.htm.

- LM currently manages sites where remediation was conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Resource Conservation and Recovery Act (RCRA) regulations. These sites were radiologically and/or chemically contaminated by federal milling, processing, research, or weapons-manufacturing operations. LM managed eight CERCLA/RCRA sites during the reporting period.
- Underground nuclear testing was conducted at sites in five states for various purposes, including stimulating natural gas production and cataloging seismic detonation signatures. The Nevada Offsites program manages sites where underground nuclear tests and experiments were performed outside of the Nevada National Security Site (formerly the Nevada Test Site). LM managed nine Nevada Offsites during the reporting period.
- The Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (Title 42 *United States Code* Section 7901, as amended) provides for the remediation and regulation of uranium mill tailings at uranium mill sites addressed under Titles I and II of UMTRCA.
 - Title I sites are former uranium mill sites that were unlicensed and essentially abandoned when UMTRCA was implemented on January 1, 1978. LM managed

21 UMTRCA Title I sites during the reporting period. Title I of UMTRCA designated inactive uranium-ore-processing sites for remediation. Remediation of these sites resulted in the creation of 19 disposal cells that contain encapsulated uranium mill tailings and associated contaminated material.

- Title II of UMTRCA addresses remediation and reclamation of uranium mill sites that were under specific license on or after January 1, 1978. LM managed six UMTRCA Title II sites during the reporting period, containing seven disposal cells. The number will increase as ongoing site reclamations are completed and the sites are transferred from the U.S. Nuclear Regulatory Commission (NRC) to LM for LTS&M.
- DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Engineer District (“Manhattan Project”) and early U.S. Atomic Energy Commission operations. DOE assessed more than 600 candidate facilities and determined that 46 would require remediation. DOE remediated 25 sites by 1997; Congress directed the U.S. Army Corps of Engineers (USACE) to remediate the remaining 21 designated FUSRAP sites. Remediation of FUSRAP sites follows CERCLA protocols. After USACE completes remediation of a site, it is transferred to LM’s responsibility. LM managed 30 FUSRAP sites during the reporting period. The number will increase as ongoing site reclamations are completed and the sites are transferred from USACE to LM for LTS&M.
- DOE established the Defense Decontamination and Decommissioning (D&D) Program for the remediation of surplus DOE facilities. D&D sites are transferred to LM for LTS&M. LM managed five D&D sites during the reporting period.
- Certain sites with low-level radioactive contamination remediated by the owner under the NRC Site Decommissioning Management Program can be transferred to the federal government under Section 151 of the Nuclear Waste Policy Act (NWPA). NRC will terminate the site license only after concurring with the implemented remedial action, determining that the owner has obtained approval of DOE to accept responsibility for the site, and ensuring future funding for LTS&M. LM managed one NWPA Section 151 site during the reporting period.
- Other LM activities include:
 - Managing records and stakeholder support of 10 additional remediated sites.
 - Maintenance of five calibration facilities for environmental radiation sensors.
 - Managing the Uranium Leasing Program (ULP), which includes administrative monitoring and inspections of 31 lease tracts within southwestern Colorado.
 - Supporting the operation of the Environmental Sciences Laboratory (ESL) which performs applied research and demonstrations of soil and groundwater remediation and treatment technologies.

3.0 Summary of General Environmental Reporting

3.1 Oversight

DOE assigns an LM site manager or program manager to each LM site or activity to oversee the long-term activities of the site or activity, address stakeholder concerns, and ensure that the site or activity remains protective of human health and the environment and the regulatory requirements for the site or activity are met. All reports, including environmental monitoring reports, are reviewed by the site, activity, or program manager (or designee), team lead (or designee), or both. The information is thoroughly reviewed to ensure that accurate data are reported.

3.2 Summary of 2015 Site-Specific Activities

During CY 2015, LM managed the long-term care of 90 sites. The sites and their respective categories are listed in the *LM Site Management Guide* (Update 18, January 2016), which is updated annually and available at <http://energy.gov/lm/downloads/site-management-guide>. Each geographic site location is counted as one site in the *LM Site Management Guide*, including those locations having both a former processing site and a disposal site.

LM classifies the sites as either Category 1, Category 2, or Category 3 based on the actual or anticipated LTS&M activities associated with that site. In general, the smaller the category number, the fewer activities and less environmental monitoring occur at the site, resulting in less documentation and reporting. However, a site's category can change depending on changes in site conditions (e.g., changes in groundwater remediation strategies, regulatory changes). The three categories of LM sites and their 2015 site counts are as follows (note that multiples sites at one geographical area such as Grand Junction, Colorado, are counted as one site, however the sites are addressed individually in Tables 1–4):

1. Category 1 sites:
 - Are listed in Table 1 of Attachment 1.
 - Include 31 LM sites.
 - Are expected to require only records-related activities and stakeholder support.
 - Are not routinely inspected or sampled for environmental monitoring data.
 - Have historical information about the site accessible online for stakeholders.
 - Do not require annual reporting.
2. Category 2 sites:
 - Are listed in Table 2 of Attachment 1.
 - Include 49 LM sites.
 - Are expected to require routine inspections and maintenance.
 - Require records-related activities and stakeholder support.
 - Typically have some form of administrative controls such as access agreements or control of land use through federal ownership.

- Typically are inspected annually.
 - Have historical information about the site and monitoring results (if LTS&M is required) accessible online for stakeholders.
3. Category 3 sites:
- Are listed in Table 3 of Attachment 1.
 - Include 10 LM sites.
 - Are expected to require operation and maintenance of remedial action systems (e.g., active treatment systems for contaminated groundwater and/or surface water), routine inspections and maintenance, land-use controls, and access agreements.
 - Require records-related activities and stakeholder support.
 - Are generally inspected annually.
 - Include CERCLA and RCRA sites.
 - Have multiple reports issued periodically to the regulators.
 - Have historical information about the site and monitoring results accessible online for stakeholders.
 - Require routine stakeholder communications.

Tables 1 through 4 in Attachment 1 summarize the monitoring and associated reporting for each site. The majority of the information identified in the tables is available on site-specific websites that can be accessed from the main LM website (<http://www.lm.doe.gov/default.aspx?id=120>) or from the site-specific links provided in Attachment 1 of this report. Any additional information is available upon request. Primary stakeholders, including state and federal regulators, are generally sent copies or notices of electronic availability when annual inspection and monitoring reports are issued. LM is providing Attachment 1 as a summarized version of the environmental reporting in lieu of individual reports.

In addition to long-term care of sites, other LM activities include:

4. Calibration facilities:
- Includes 5 calibration facilities for radiation detection sensors.
 - Are expected to require records-related activities.
 - Do not require stakeholder support. LM provides access to the sites as requested by users.
 - Require annual inspection reports.
 - Are expected to require periodic cleaning and occasional maintenance.
5. ULP:
- Includes 31 lease tracts within southwestern Colorado.
 - Requires annual inspections of mining operations by LM to assure lease holders adhere to lease stipulations.
 - Requires LM oversight of lease holder routine maintenance activities.

- Produces an annual status and activities report that summarizes LM activities for the ULP in that calendar year.
 - Due to the Court-ordered injunction, lease holders did not perform any exploration, development, mining/extraction, or reclamation activities on the DOE lease tracts.
6. ESL:
- Located at the Grand Junction, Colorado Site to support LM programs.
 - ESL scientists perform applied research and laboratory-scale demonstrations of soil and groundwater remediation and treatment technologies.
 - Is inspected quarterly for health and safety.
 - Is routinely inspected for contamination.
 - Requires maintenance of a Chemical Hygiene Plan, Procedures Manual, and Safety Data Sheets.
 - Does not require stakeholder support.
 - Activities are reported annually in the Applied Studies & Technology Annual Report.

4.0 Summary of Environmental Management System and Sustainability

As required by prior DOE orders and DOE Order 436.1, *Departmental Sustainability*, LM has a fully implemented Environmental Management System (EMS). The LM EMS was implemented in October 2005. LM has declared full implementation of our EMS every three years starting in 2009 with the latest declaration on June 30, 2015. LM's EMS is a comprehensive system to incorporate life-cycle environmental considerations into all aspects of the LM mission to maximize beneficial resources, minimize wastes and adverse environmental impacts, and meet or exceed compliance with applicable environmental, public health, and resource protection laws, regulations, and DOE requirements. The EMS serves as the platform for adhering to, implementing, and tracking environmental requirements for compliance and sustainability. The LM EMS is consistent with the framework of the International Organization for Standardization (ISO) standard 14001, *Environmental Management System*, the Integrated Safety Management System requirements of DOE Policy 450.4A, *Integrated Safety Management Policy* and Title 10 *Code of Federal Regulations* Section 851 (10 CFR 851), *Worker Safety and Health Program*.

The LM EMS encompasses all LM sites under LTS&M custody and federal and contractor facilities where work is conducted throughout the United States.

The LM EMS public website describes the EMS and provides links to many of the documents and reports identified in this section (http://www.lm.doe.gov/Office_of_Site_Operations/Environmental_Management_System.aspx). The following programmatic documents describe LM's EMS and are accessible on the LM EMS public website on the *Guiding Documents and Links* page:

- LM's *Environmental Policy* (LM PO 436.1a, currently posted policy)
- LM's *Environmental Management System Description*

4.1 Performance Measures

The following is a summary of reporting mechanisms for the EMS and Sustainability Requirements, some of which are available on the LM EMS public website on the *Goals/Progress/Plans/Reports* page.

- LM Site Sustainability Plan (SSP): LM reports past performance and future plans for meeting sustainability goals in the SSP. This assists DOE with meeting its sustainability goals, objectives, and targets established in Executive Order (EO) 13693 (which superseded EO 13423 and 13514 on March 19, 2015); DOE Order 436.1, Departmental Sustainability; and the DOE Strategic Sustainability Performance Plan.
- Annual Energy Report, also known as the Consolidated Energy Data Report: Gathers information on electronics stewardship, energy and water usage, waste diversion data, renewable energy generation, greenhouse gas emissions, high-performance sustainable buildings, and sustainability projects.
- Energy Independence and Security Act (EISA) Section 432 Report: EISA reinforces the energy reduction goals for federal agencies put forth in EO 13693. Section 432 requires federal agencies to identify facilities that constitute at least 75 percent of the agency's facility energy use. Comprehensive energy and water evaluations of 25 percent of facilities are completed each year so that an evaluation of each facility is completed once every four years. Section 432 reports are submitted annually to provide a status on energy and water evaluations, benchmarking, and project implementation and measures follow up.
- LM EMS Annual Facility Data Report : Collects information on status of EMS.
- Facility Information Management System (FIMS) updates: FIMS collects real property attributes and use, including a list of assets excluded from the energy intensity reduction goal. The database also stores data on buildings that have been assessed or are scheduled to be assessed against the High Performance Sustainable Building goals.
- Federal Acquisition Statistical Tool updates: Collects current and past federal fleet fuel use, vehicle inventory, and vehicle acquisitions for the current year in addition to plans 2 years into the future.
- LM Significant Environmental Aspects: The environmental aspect of an activity is the portion of it that creates a possibility for a significant environmental impact if not controlled. This document describes the four categories of significant environmental impacts identified based on LM site activities.

As required by DOE Order 436.1, LM had an audit by an external third party in early 2015. The 2015 EMS Audit Report was provided by Orion Registrar, Inc. This audit fulfills the DOE Order 436.1 requirement to have a third-party audit every 3 years to provide a basis for self-declaring conformance to the ISO 14001, *Environmental Management System*, standard.

4.2 Accomplishments, Awards, and Recognition

LM received three 2016 awards for EMS related activities conducted in 2015. The awards were:

- An Electronic Product Environmental Assessment Tool (EPEAT) Purchasers Award for purchasing EPEAT-rated electronic equipment.
- A DOE Sustainability award in the Waste Reduction and Pollution Prevention category for “Sustainability Innovations Improve Groundwater Treatment while Reducing Waste and Pollution” at the Rocky Flats, Colorado, Site.
- A GreenGov Presidential award in the Keeping it Clean category for “Sustainable Innovation - Tweaking Treatment/Reducing Waste” at the Rocky Flats, Colorado, Site.

The 2015 EMS Audit Report identified 14 strengths, some of which are listed below:

- “Best in Class” recognition for LM’s strategic planning approaches.
- Organization has a robust environmental management system with implementing documentation.
- Top management support of the EMS and to the continuous improvement of that system.
- The Training Information System provides a quick review of employee’s required and completed training records.

LM continues to meet or exceed sustainability goals. The table below shows LM’s overall ranking compared with the other 14 DOE program offices:

Scope 1&2 Greenhouse Gas Progress (%)	Scope 3 Greenhouse Gas Progress (%)	Energy Use Intensity Progress (%)	Water Use Intensity Progress (%)	2015 Renewable Energy (%)	2015 High Performance Sustainable Buildings (%)	2015 Power Management (%)
4th out of 15	3rd out of 15	2nd out of 15	1st out of 15	3rd out of 15	1st out of 15	Tied for 1st with 4 other offices

5.0 Summary of Environmental Compliance

LM sites were remediated under different regulatory regimes. The regulations under which a site was remediated often prescribe post-closure care requirements. Other LM activities are also regulated under various regulations based on the activities being conducted and other factors. Requirements vary by regulation. The following subsections summarize compliance with applicable regulations and the related reporting that occurred during CY 2015.

5.1 Environmental Restoration and Waste Management Compliance Status

CERCLA: CERCLA was enacted by Congress on December 11, 1980, to enforce cleanup and reporting requirements on contaminated property. The U.S. Environmental Protection Agency (EPA) initiates a response action under CERCLA if there is a release or a substantial threat of a release of a hazardous substance into the environment. LM sites that are regulated by EPA or authorized states under CERCLA have completed remedial actions with the exception of long-term monitoring and active groundwater remediation at several sites. The sites are now conducting long-term surveillance, groundwater remediation through active treatment or natural

attenuation, and site maintenance. The status of the activities at each site is available on site-specific links provided in Attachment 1 of this report. A Five-Year Review report is required to be prepared for a CERCLA site (see Table 2 and Table 3) to evaluate whether the remedy at the site remains protective of human health and the environment.

- A Five-Year Review report was started in early 2015 for the Laboratory for Energy-Related Health Research, California, Site and is expected to be complete in September 2016.
- A Five-Year Review report was started in August 2015 for the Fernald Preserve, Ohio, Site and is expected to be completed in September 2016.
- A Five-Year Review report was started in October 2015 for the Mound, Ohio, Site and is expected to be completed in September 2016.
- A Five-Year Review report was started in December 2015 for the Weldon Spring, Missouri, Site and is expected to be completed in September 2016.

RCRA: RCRA was enacted by Congress on October 21, 1976, to govern the management of solid and hazardous waste and establish standards by which waste generators are regulated. RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments (HSWA). Among other requirements, HSWA mandated waste minimization and the land disposal restrictions for hazardous waste. RCRA remains an applicable or relevant and appropriate requirement (ARAR) at many of the sites for disposal cell maintenance and groundwater monitoring, and the sites maintain compliance with these ARARs.

- During CY 2015 each site that generated hazardous waste maintained the status of a Conditionally Exempt Small Quantity Generator, and no RCRA waste was manifested offsite.
- The Pinellas County, Florida, Site maintains an active RCRA Hazardous and Solid Waste Act corrective action permit issued by the state of Florida, which includes requirements for remedial action at the site under the state Global Risk-Based Corrective Action regulations. Pinellas maintains compliance with this permit, which was renewed as a 10-year permit in January 2012.

Federal Facilities Compliance Act of 1992 (FFCA): The FFCA waved sovereign immunity for federal government facilities with regard to the imposition of administrative and civil fines and penalties under RCRA for the proper management and disposal of solid, hazardous, radioactive and mixed wastes. The Clean Water Act (CWA) has similar provisions. The FFCA gave EPA the authority to issue administrative compliance orders to other federal agencies that violate RCRA or the CWA and requires EPA to conduct annual inspections of Part B permitted federal treatment, storage, and disposal facilities. During the initial visit by these regulators, they are mandated to review and comment on the facilities groundwater protection program. LM sites recognize this waiver and maintain LM-wide policies and plans and site-specific plans and procedures, as needed, to comply with all applicable requirements under RCRA and the CWA.

- No LM sites currently maintain RCRA-permitted treatment, storage, and disposal facilities.

Emergency Planning and Community Right to Know Act (EPCRA) Superfund Amendments and Reauthorization Act (SARA): EPCRA reports under SARA Section 312. EPCRA reports are required annually for sites that store chemicals in amounts that exceed threshold planning quantities.

- In CY 2015, EPCRA reports were submitted for the Rocky Flats Site, Colorado, and Tuba City, Arizona, Disposal Site, which stored chemicals in quantities that exceeded EPCRA threshold planning quantities.

National Environmental Policy Act (NEPA): NEPA documentation is typically not required for CERCLA sites that considered NEPA values in their decision documents. Actions at non-CERCLA sites are typically within classes of actions that are categorically excluded. The evaluations of these actions are documented in Environmental Checklists and Categorical Exclusion Determination Forms. LM site Categorical Exclusion Determination Forms are available for public review on the DOE and LM NEPA websites.

An annual summary of proposed or ongoing environmental assessments, environmental impact statements, and mitigation action plans is provided to the DOE Office of General Counsel and reported on the following website: <http://energy.gov/lm/services/joint-environmental-management-system-ems/national-environmental-policy-act-nepa>.

- LM NEPA documents completed during the reporting period included:
 - Environmental Checklists: 9
 - Environmental Assessments:0 (Note- An Environmental Assessment was initiated for the Tuba City, Arizona, Disposal Site during this reporting period, however the proposed action required further review and the Environmental Assessment was canceled.)
 - Environmental Impact Statements:0

Toxic Substances Control Act (TSCA): The TSCA, enacted in 1976, regulates the control of toxic substances (including their manufacture, use, distribution in commerce, and disposal), asbestos and lead-based paint abatement, and indoor radon abatement. LM's sites often have older buildings that required abatements of TSCA-regulated substances, especially asbestos.

- No specific actions were taken under TSCA at LM sites during this reporting period.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): FIFRA regulates the chemicals, use, and control of pesticides and requires that a "Certified Applicator" must supervise the application of herbicides or pesticides on property other than their own.

- Herbicides and pesticides are used at many LM sites. Policies, procedures, and manuals are in place to ensure that they are used in compliance with FIFRA and under the control and instruction of a Certified Applicator.

5.2 Radiation Protection Compliance Status

Atomic Energy Act of 1954 (AEA): The purpose of the AEA is to assure the proper management of source, special nuclear, and byproduct material. The AEA and the statutes that

amended it delegate the control of nuclear energy primarily to DOE, NRC, and EPA. DOE established LM to ensure that DOE's post-closure responsibilities are met and for providing DOE programs for LTS&M, records management, work force restructuring and benefits continuity, property management, land use planning, and community assistance.

Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA Title I and II): UMTRCA is a federal law that provides for the safe and environmentally sound disposal, long-term stabilization, and control of uranium mill tailings in a manner that minimizes or eliminates radiation health hazards to the public. Under Title I of UMTRCA, DOE remediated 22 inactive uranium-ore-processing sites in accordance with standards promulgated by EPA. Uranium-ore-processing sites addressed by Title II of UMTRCA were active when the act was passed in 1978. DOE administers Title II sites under the provisions of a general NRC license. LM manages UMTRCA Title I and Title II sites, including inspection, monitoring, and maintenance activities.

- Requirements for inspections, monitoring, and maintenance activities are detailed in site-specific long-term surveillance plans and Groundwater Compliance Action Plans, which are reviewed and concurred upon by NRC.
- Two LM-wide Inspection and Monitoring Reports, one for Title I sites and one for Title II sites, describing activities and demonstrating protectiveness and compliance at each of the UMTRCA sites, are compiled and submitted annually to NRC for each calendar year.
- Data Validation Packages are developed for every major sampling event and sent to NRC and placed on the applicable site webpage.

DOE Order 458.1, Radiation Protection of the Public and the Environment: DOE Order 458.1 establishes requirements to protect the public and the environment against undue risk from radiation associated with radiological activities conducted under the control of DOE.

- At the end of this reporting period the Legacy Management Support contractor to LM began implementing DOE Order 458.1 Chg 3 instead of DOE Order 5400.5 Chg. 2. The contract was modified to include DOE Order 458.1 Chg 3 as a contractual obligation in July 2016.

5.3 Air Quality and Protection Compliance Status

Clean Air Act (CAA): The CAA was enacted to control sources of air pollution that generally fall into three categories: new and existing sources, which are subject to ambient air quality regulations through source-specific emission limits (national ambient air quality standards) specified in state implementation plans; new sources, which are subject to more stringent control technologies and permitting requirements; and specific air pollution problems, including hazardous air pollutants and visibility impairment, which are subject to stationary source standards known as National Emission Standards for Hazardous Air Pollutants (NESHAP). A comprehensive operating permit program was established in 1990 to have all applicable requirements for a given source of air pollution under one program. Title V regulations and permits are a part of this program. NESHAP monitoring and the Title V permitting program were implemented as required at LM sites in the past.

- There were no major sources of criteria air pollutants or hazardous air pollutants at the LM sites in CY 2015. CAA permits or monitoring are not presently required at any of the LM sites.

5.4 Water Quality and Protection Compliance Status

Clean Water Act (CWA): The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the CWA, EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. In CY 2015, multiple LM sites maintained NPDES permits. These NPDES permits include discharge permits, storm water permits, and a Section 404 nationwide permit and are as follows:

- The Fernald Preserve, Ohio, CERCLA Site conducts compliance sampling for non-radiological pollutants from uncontrolled runoff and treated effluent discharges from the Fernald Preserve under a state-administrated NPDES permit.
- The Mound, Ohio, CERCLA/RCRA site discharges treated groundwater under a CERCLA authorization demonstrating compliance with the CWA. No discharge has occurred since September 15, 2014, to allow for undisturbed evaluation of the enhanced remediation effort using the injection of edible vegetable oil.
- The Weldon Spring, Missouri, CERCLA site maintained an NPDES permit during CY 2015. This permit covers discharges from the Leachate Collection and Removal System and is maintained as a contingency to current disposal methods. A renewal application for this permit was submitted on December 15, 2015.
- The Rocky Flats Site, Colorado, CERCLA/RCRA site maintains a Section 404 nationwide permit Number 43 related to breaching of earthen dams. This permit will be terminated in 2016.
- LM sites that implement a pest management program conduct activities in accordance with the EPA Pesticide General Permit or a state-issued general permit (for geographic areas where EPA is not the NPDES permitting authority).

Safe Drinking Water Act (SDWA): The SDWA, enacted in 1974, authorized EPA to regulate contaminants in drinking water and required EPA to establish national standards to be

implemented and enforced by authorized states. SDWA is an ARAR for many LM sites in regard to groundwater contamination. ARAR information is detailed in the environmental monitoring reports for each site.

Stormwater Management and the Energy Independence and Security Act of 2007 (EISA):

Under Section 438 of EISA, federal agencies are required to reduce stormwater runoff from federal development and redevelopment projects to protect water resources. LM evaluates all construction projects involving footprints greater than 5,000 square feet to ensure that predevelopment hydrology of the property is maintained or restored.

- The Monticello, Utah, CERCLA/RCRA site managed site storm water during 2015 in accordance with a storm water pollution prevention plan that met the substantive requirements of a Utah Pollutant Discharge Elimination System General Permit for Discharges from Construction Activities, although the state of Utah agreed that no formal NPDES or equivalent UPDES permit was required because of the CERCLA permit exclusion.

Executive Order 11988 Floodplain Management: EO 11988 requires that federal agencies avoid, to the extent possible, short or long-term work, activities, or disruption causing adverse impacts in floodplains and avoid direct and indirect development in floodplain areas wherever there is a practical alternative. LM considers working alternatives to avoid floodplains when possible and complies with this EO and other federal, state, tribe, and local requirements, as applicable.

Executive Order 11990 Protection of Wetlands: The purpose of EO 11990 is to “minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.” To meet these objectives, the order requires LM to consider alternatives to work in or near wetland sites and to limit potential damage if an activity affecting a wetland cannot be avoided. LM avoids conducting activities in or around wetlands that would adversely affect them. When unavoidable, LM complies with the requirements specific to the applicable nationwide permit and any applicable state or tribal requirements. LM promotes the ecological sustainability and enhancement of wetlands when considering the disposition and reuse of federal lands.

5.5 Other Environmental Statutes Compliance Status

Endangered Species Act (ESA): Under Section 7 of the ESA, DOE consults with the U.S. Fish and Wildlife Service (USFWS) on any action that may affect threatened or endangered species or their designated critical habitat. LM evaluates the potential presence of federally listed threatened or endangered species or their designated critical habitat during the project planning and/or NEPA process or whenever relevant changes in listings occur. For example, LM performs an evaluation if a candidate species is elevated to threatened or endangered status or if critical habitat is established at or near an LM site. The USFWS’s Information for Planning & Conservation online tool is used to obtain information on species occurrence and habitat on nontribal lands. If LM determines that a listed species may be affected by its activities, a Section 7 consultation with USFWS is initiated and a biological assessment is prepared.

- In 2015, LM began consultation with USFWS for impacts to the newly listed Gunnison sage-grouse and western yellow-billed cuckoo and their designated and

proposed critical habitat for actions on the ULP Tracts. LM continues to evaluate potential impacts on these species from activities at other sites.

- For planned activities on tribal land, LM must contact individual tribes for project consideration. Each tribe has a different process for consideration and different authority over federally listed species. Within the Navajo Nation, the Navajo Nation Natural Heritage Program responds to LM requests involving federally and tribally listed threatened or endangered species. In CY 2015, LM activities did not affect any listed species on tribal land.
- In some instances, water depletions from river basins may affect federally listed fish species in the Colorado River. In CY 2015, LM continued to track water use related to LM site activities and began to evaluate the basin wide effects of activities on these listed species.

Migratory Bird Treaty Act (MBTA): The MBTA prohibits the possession or destruction of migratory birds or their parts, eggs, and nests without a permit from USFWS. Most birds present at LM sites are protected under this act, and compliance is often achieved by timing disruptive activities to avoid the nesting season of migratory bird species.

- A report for the Council for the Conservation of Migratory Birds was submitted in 2016 detailing actions LM completed in CY 2015 to protect migratory birds.

Bald and Golden Eagle Protection Act: This act provides additional protection to bald and golden eagles by prohibiting “take” of these species, which includes possession, destruction, harassment, or disturbance without a permit from the Secretary of the Interior.

- No specific actions were taken under the Bald and Golden Eagle Protection Act at LM sites during this reporting period.

National Historic Preservation Act (NHPA): This act established a comprehensive national policy concerning historic and archaeological resource protection. Federal historic preservation regulations, such as the Section 106 process, are based on this act. The Section 106 process directs federal agencies to consider the effects of federal projects on historic and archaeological resources, even if projects are not located on federal lands (i.e., LM must consider projects on both LM-administered and non-LM-administered property). LM complies with NHPA Section 106 by using subcontractors for cultural resource inventories prior to commencing ground-disturbing activities.

- In CY 2015, the following cultural resource inventories were conducted:
 - Riverton, Wyoming, Processing Site (an UMTRCA Title I site): No cultural sites were identified on private property areas as a result of the inventory.
 - Shoal, Nevada, Site (a Nevada Offsite): An inventory of areas potentially disturbed by proposed drilling activities resulted in the identification of several isolated areas that were considered part of a historic district potentially eligible for nomination to the National Register of Historic Places (NR). LM relocated a staging area to avoid the need for further consultation.
 - Shiprock, New Mexico, Disposal Site (an UMTRCA Title I site): No historic property subject to the Section 106 process was identified as a result of a pedestrian archaeological (Class III) survey at the Shiprock site.

- Fernald Preserve, Ohio Site: Two Phase I archaeological surveys were conducted in advance of construction activities within approximately 56 acres of the site. One survey resulted in the identification of a potential historic site, but a subsequent Phase II survey determined that the site was not eligible for listing. Several other potential historic sites were identified in the second location, but they would not be disturbed by construction activities so no further action was required. The archaeological surveys were reported pursuant to the *Programmatic Agreement U.S. Department of Energy Office of Legacy Management and the Ohio Historic Preservation Office Regarding Archaeological Surveys at the Fernald Preserve*.
- LM provided support to the Riverview Technology Corporation (RTC), the local property owner of the Grand Junction, Colorado, Site, as RTC seeks to get the Grand Junction site listed on the NR. The Grand Junction site demonstrated historic significance for uranium exploration and milling technological advances during World War II and the Cold War. LM provided direct support during the development of the NR nomination package for the Grand Junction site. The draft NR nomination package was submitted to the Colorado State Historic Preservation Officer in October 2015.
- LM provided ongoing support to the RTC for the rehabilitation of the Cabin, one of the oldest buildings on the Grand Junction site. The Cabin was the administrative center of the facility when the Grand Junction site was operated by the Manhattan Engineer District during World War II (1943–1945). The Cabin is being rehabilitated into an interpretive center where visitors can learn about the Grand Junction site’s historic missions during World War II and the Cold War (1945–1991).

5.6 Summary of Environmental Violations

This subsection identifies unique instances of noncompliance and other types of enforcement actions related to operations and activities at sites under LM’s management. The following are examples of what may be identified (as applicable): notices of violation (NOVs), environmental occurrences, and lawsuits.

- Violations: No NOVs were issued to LM sites during CY 2015.
- Occurrence Reports: There were no reportable environmental occurrences that required notification to an outside regulatory agency.
- Lawsuits: There were no new lawsuits directly related to LM activities during the reporting period.

6.0 Additional Natural and Cultural Resources Management

In addition to the actions taken under specific regulations, as listed above in subsection 5.5, LM completes the following activities for natural and cultural resources management:

- LM submits a *Report on Federal Archaeology Program Activities* annually to the DOE Office of Environment, Health, Safety and Security, Office of Sustainability Support. The Office of Sustainable Environmental Stewardship compiles reports from all DOE offices and submits them to the Department of Interior, National Park

Service. The report summarizes annual activities related to cultural resources and includes the total acreage surveyed to date, the number of cultural sites determined to be eligible or ineligible for the NR, and the costs associated with managing the cultural resources program.

- On May 19, 2015, the Secretary of the Department of Agriculture and the Administrator of the U.S. EPA, on behalf of the Pollinator Health Task Force, issued the *National Strategy to Promote the Health of Honey Bees and Other Pollinators* (Strategy). Developed through a collaborative effort across the Executive Branch, this Strategy outlines a comprehensive approach to tackling and reducing the impact of multiple stressors on pollinator health, including pests and pathogens, reduced habitat, lack of nutritional resources, and exposure to pesticides. LM formed a group to assess pollinator health and potential efforts at LM sites.
- LM annually renews the following permits:
 - Goose Damage Permit for the Fernald Preserve, Ohio, CERCLA site, issued by the Ohio Department of Natural Resources
 - Wild Animal - Scientific Collection Permits for the Fernald Preserve, Ohio, CERCLA site, issued by the Ohio Department of Natural Resources
 - Special-Purpose Salvage Permit for the Fernald Preserve, Ohio, CERCLA site, issued by the USFWS

7.0 Summary of Groundwater Protection Program

This section summarizes the site-specific groundwater monitoring program for applicable LM sites. For each LM site with a groundwater monitoring program, Table 4 in Attachment 1 presents the following information:

- Whether the site is regularly sampled for radiological analytes (including uranium isotopes)
- Whether the site is regularly sampled for nonradiological analytes (including elemental uranium)
- A list of the contaminants of concern (COCs)
- The number of active monitoring wells that are sampled for groundwater monitoring purposes
- The number of point of compliance (POC) wells, defined as wells at which regulatory standards apply
- COC exceedances at POC wells during the reporting period

Annual reports discussing COC exceedances at POC wells are referenced in the Table 4 footnotes and are available at the LM public website.

8.0 Summary of Environmental Radiological Protection Program

LM has a radiological protection program (RPP) that implements the requirements necessary to ensure that radiological operations at LM sites and facilities are conducted in a manner that protects the health and safety of employees, the public, and the environment. The implementing documents of the RPP include the *Radiation Protection Program Plan* and *Radiological Control Manual*. The purpose of the *Radiation Protection Program Plan* is to implement the requirements of 10 CFR 835, “Occupational Radiation Protection.” The *Radiological Control Manual* further defines the contractor’s LM-specific radiological control responsibilities. LM also ensured compliance with DOE Order 5400.5 Chg. 2, *Radiation Protection of the Public and the Environment*. This order was canceled by DOE Order 458.1 (currently Chg. 3), *Radiation Protection of the Public and the Environment*. In 2015, the Legacy Management Support contractor to LM began implementing DOE Order 458.1 instead of DOE Order 5400.5 Chg. 2. The contract was modified to include DOE Order 458.1 as a contractual obligation in July 2016.

LM uses the RPP at all LM sites and activities to ensure that radiation exposure to workers and the public and releases of radioactivity to the environment are maintained below regulatory limits and to further reduce exposures and releases to levels as low as reasonably achievable. Environmental cleanup at LM sites was completed according to all applicable statutes and regulations, and LM conducts LTS&M to verify that site conditions have not changed and that established institutional controls remain effective. There were no unplanned radiological discharges in CY 2015.

9.0 Summary of Quality Assurance

Quality Assurance provides a management system to perform work in a quality manner while minimizing potential hazards to the environment, the public, and the workers. The management system incorporates the requirements of the U.S. Department of Energy Order 414.1D, *Quality Assurance*, using ISO standard 9001:2015, *Quality Management Systems – Requirements*, as the national standard, and DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*, as well as other customer-requirement documents.

The Quality Assurance management system ensures that requirements are identified and integrated into LM procedures and that activities are described in documents such as statements of work, project-specific work plans, procedures, and other documented control measures. Assessments are performed to confirm compliance and evaluate LM performance. Assessments are recorded on an Oversight Schedule and issues are tracked in the Corrective Action Tracking System. The Oversight Schedule includes independent assessments conducted by assessors independent of the area or function being assessed; management assessments conducted as self-assessments; and surveillances conducted by Quality Assurance.

Quality Assurance policy includes the identification and control of items and equipment for sampling control and analysis. Additional site-specific requirements for sampling activities at LM sites are defined in the *Sampling and Analysis Plan for the U.S. Department of Energy Office of Legacy Management Sites* (LM Sampling and Analysis Plan). This document provides detailed procedures for the field sampling teams so that water, air, soil and sediment, and ecological samples are collected in a consistent and technically defensible manner. These

procedures are reviewed annually and updated as required to ensure that the most up-to-date processes are used.

Guidelines for evaluating sample collection and field measurement activities against the requirements found in the LM Sampling and Analysis Plan are detailed in the Standard Practice for Validation of Environmental Data in the *Environmental Procedures Catalog*. Field quality assurance procedures include:

- Following the procedures discussed in the LM Sampling and Analysis Plan.
- Collecting and analyzing quality control samples including field duplicates, equipment blanks, and trip blanks.
- Inspecting and maintaining monitoring wells.

Validation of environmental data is performed to determine if data meet the specific technical and quality criteria established in the applicable quality system documents and to establish the usability and extent of bias of any data not meeting those criteria. Validation can include evaluation of all activities that impact data quality. The Standard Practice for Validation of Environmental Data also includes guidelines for evaluating laboratory analyses against the requirements found in the reference analytical procedures, the Statement of Work, and *Quality Systems for Analytical Services*, when applicable. Samples are analyzed by subcontracted offsite laboratories that participate in the Consolidated Audit Program and the Mixed Analyte Performance Evaluation Program.

Attachment 1

Legacy Management Sites and Related Reports and Summary of Groundwater Monitoring Program

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Table 1: Category 1 Sites	
(Typically involves records-related activities and stakeholder support)	
FUSRAP Sites	
Acid/Pueblo Canyon, NM, Site	http://www.lm.doe.gov/Acid/Sites.aspx
Bayo Canyon, NM, Site	http://www.lm.doe.gov/bayo/Sites.aspx
Berkeley, CA, Site	http://www.lm.doe.gov/berkeley/Sites.aspx
Beverly, MA, Site	http://www.lm.doe.gov/beverly/Sites.aspx
Buffalo, NY, Site	http://www.lm.doe.gov/buffalo/Sites.aspx
Chicago North, IL, Site	http://www.lm.doe.gov/chicago_north/Sites.aspx
Chupadera Mesa, NM, Site	http://www.lm.doe.gov/chupadera/Sites.aspx
Columbus East, OH, Site	http://www.lm.doe.gov/columbus_east/Sites.aspx
Granite City, IL, Site	http://www.lm.doe.gov/granite_city/Sites.aspx
Hamilton, OH, Site	http://www.lm.doe.gov/hamilton/Sites.aspx
Indian Orchard, MA, Site	http://www.lm.doe.gov/indian_orchard/Sites.aspx
Jersey City, NJ, Site	http://www.lm.doe.gov/jersey_city/Sites.aspx
New York, NY, Site	http://www.lm.doe.gov/new_york/Sites.aspx
Oak Ridge, TN, Warehouses Site	http://www.lm.doe.gov/oakridge/Sites.aspx
Oxford, OH, Site	http://www.lm.doe.gov/oxford/Sites.aspx
Springdale, PA, Site	http://www.lm.doe.gov/springdale/Sites.aspx
Toledo, OH, Site	http://www.lm.doe.gov/toledo/Sites.aspx
Tonawanda North, NY, Site Unit 1	http://www.lm.doe.gov/tonawanda/Sites.aspx
Tonawanda North, NY, Site Unit 2	http://www.lm.doe.gov/tonawanda/Sites.aspx
Wayne, NJ, Site	http://www.lm.doe.gov/wayne/Sites.aspx
CERCLA/RCRA Sites	
Maxey Flats, KY, Disposal Site	http://www.lm.doe.gov/maxey_flats/Sites.aspx
Other/Additional Sites	
Ashtabula, OH, Site	http://www.lm.doe.gov/Ashtabula/Sites.aspx
Center for Energy and Environmental Research, PR, Site	http://www.lm.doe.gov/CEER/Sites.aspx
Columbus, OH, Site	http://www.lm.doe.gov/Columbus/Sites.aspx
El Verde, PR, Site	http://www.lm.doe.gov/El_Verde/Sites.aspx
General Atomics Hot Cell Facility, CA, Site	http://www.lm.doe.gov/general_atomic/Sites.aspx
Geothermal Test Facility, CA, Site	http://www.lm.doe.gov/geothermal/Sites.aspx
Inhalation Toxicology Laboratory, NM, Site	http://www.lm.doe.gov/ITL/Sites.aspx
Missouri University Research Reactor, MO, Site	http://www.lm.doe.gov/MURR/Sites.aspx
Oxnard, CA, Site	http://www.lm.doe.gov/oxnard/Sites.aspx
Vallecitos Nuclear Center, CA, Site	http://www.lm.doe.gov/Vallecitos/Sites.aspx

Table 2: Category 2 Sites

(Typically involves routine inspection and maintenance, records-related activities, and stakeholder support)

Site Name	Type of Data Collected					Where Data Are Reported				
	Inspection	Groundwater and/or Surface Water Monitoring	Production Water and Gas Monitoring	Air Monitoring	Other Environmental Monitoring (biological, soil, etc.)	Site Inspection Report	CERCLA Five-Year Review Report	Annual Site Inspection and Monitoring Report for UMRCA Title I or Title II Sites	Environmental Monitoring Report ^a	GEMS ^b
UMTRCA Sites										
Ambrosia Lake, NM, Disposal Site http://www.lm.doe.gov/Ambrosia/Sites.aspx	x	x						x	x	x
Bluewater, NM, Disposal Site http://www.lm.doe.gov/bluewater/Sites.aspx	x	x						x	x	x
Burrell, PA, Disposal Site http://www.lm.doe.gov/burrell/Sites.aspx	x	x				x		x	x	x
Canonsburg, PA, Disposal Site http://www.lm.doe.gov/canonsburg/Sites.aspx	x	x				x		x	x	x
Edgemont, SD, Disposal Site http://www.lm.doe.gov/edgemont/Sites.aspx	x							x		x
Falls City, TX, Disposal Site http://www.lm.doe.gov/falls/Sites.aspx	x	x						x	x	x
Green River, UT, Disposal Site http://www.lm.doe.gov/green_river/Sites.aspx	x	x						x	x	x
Gunnison, CO, Processing Site http://www.lm.doe.gov/Gunnison/Processing/Sites.aspx		x							x	x
Gunnison, CO, Disposal Site http://www.lm.doe.gov/Gunnison/Disposal/Sites.aspx	x	x						x	x	x
Lakeview, OR, Processing Site http://www.lm.doe.gov/Lakeview/Processing/Sites.aspx		x							x	x
Lakeview, OR, Disposal Site http://www.lm.doe.gov/Lakeview/Disposal/Sites.aspx	x	x						x	x	x
L-Bar, NM, Disposal Site http://www.lm.doe.gov/Lbar/Sites.aspx	x	x						x	x	x
Lowman, ID, Disposal Site http://www.lm.doe.gov/lowman/Sites.aspx	x							x		x
Maybell, CO, Disposal Site http://www.lm.doe.gov/Maybell/Sites.aspx	x							x		x
Maybell West, CO, Disposal Site http://www.lm.doe.gov/Maybell_West/Sites.aspx	x							x		x
Mexican Hat, UT, Disposal Site http://www.lm.doe.gov/Mexican_Hat/Sites.aspx	x				x			x		x
Monument Valley, AZ, Processing Site http://www.lm.doe.gov/MonValley/Sites.aspx		x			x				x	x
Naturita, CO, Processing Site http://www.lm.doe.gov/Naturita/Processing/Sites.aspx		x							x	x
Naturita, CO, Disposal Site http://www.lm.doe.gov/Naturita/Disposal/Sites.aspx	x							x	x	x

Table 2: Category 2 Sites

(Typically involves routine inspection and maintenance, records-related activities, and stakeholder support)

Site Name	Type of Data Collected					Where Data Are Reported				
	Inspection	Groundwater and/or Surface Water Monitoring	Production Water and Gas Monitoring	Air Monitoring	Other Environmental Monitoring (biological, soil, etc.)	Site Inspection Report	CERCLA Five-Year Review Report	Annual Site Inspection and Monitoring Report for UMRCA Title I or Title II Sites	Environmental Monitoring Report ^a	GEMS ^b
Old Rifle, CO, Processing Site http://www.lm.doe.gov/Rifle/Old_Processing/Sites.aspx	x	x							x	x
New Rifle, CO, Processing Site http://www.lm.doe.gov/Rifle/New_Processing/Sites.aspx	x	x							x	x
Rifle, CO, Disposal Site http://www.lm.doe.gov/Rifle/Disposal/Sites.aspx	x	x						x	x	x
Riverton, WY, Processing Site http://www.lm.doe.gov/Riverton/Sites.aspx		x							x	x
Salt Lake City, UT, Processing Site http://www.lm.doe.gov/Salt_Lake/Processing/Sites.aspx										x
Salt Lake City, UT, Disposal Site http://www.lm.doe.gov/Salt_Lake/Disposal/Sites.aspx	x							x		x
Sherwood, WA, Disposal Site http://www.lm.doe.gov/sherwood/Sites.aspx	x	x			x			x	x	x
Shirley Basin South, WY, Disposal Site http://www.lm.doe.gov/Shirley_Basin/Sites.aspx	x	x						x	x	x
Slick Rock, CO, Processing Site http://www.lm.doe.gov/Slick_Rock/Processing/Sites.aspx		x							x	x
Slick Rock, CO, Disposal Site http://www.lm.doe.gov/Slick_Rock/Disposal/Sites.aspx	x							x		x
Spook, WY, Disposal Site http://www.lm.doe.gov/Spook/Sites.aspx	x							x		x
Decontamination and Decommissioning (D&D)										
BONUS, PR, Decommissioned Reactor Site http://www.lm.doe.gov/bonus/Sites.aspx	x					x				x
Grand Junction, CO, Site http://www.lm.doe.gov/Grand_Junction/Sites.aspx	x	x				x			x	x
Hallam, NE, Decommissioned Reactor Site http://www.lm.doe.gov/hallam/Sites.aspx	x	x				x			x	x
Piqua, OH, Decommissioned Reactor Site http://www.lm.doe.gov/Piqua/Sites.aspx	x					x				x
Site A/Plot M, IL, Decommissioned Reactor Site http://www.lm.doe.gov/SiteA_PlotM/Sites.aspx	x	x				x			x	x
Nevada Offsites										
Amchitka, AK, Site http://www.lm.doe.gov/Amchitka/Sites.aspx	x				x				x	x
Central Nevada Test Area, NV, Site http://www.lm.doe.gov/CNTA/Sites.aspx	x	x				x			x	x
Chariot, AK, Site http://www.lm.doe.gov/chariot/Sites.aspx										x

Table 2: Category 2 Sites

(Typically involves routine inspection and maintenance, records-related activities, and stakeholder support)

Site Name	Type of Data Collected					Where Data Are Reported				
	Inspection	Groundwater and/or Surface Water Monitoring	Production Water and Gas Monitoring	Air Monitoring	Other Environmental Monitoring (biological, soil, etc.)	Site Inspection Report	CERCLA Five-Year Review Report	Annual Site Inspection and Monitoring Report for UMTRCA Title I or Title II Sites	Environmental Monitoring Report ^a	GEMS ^b
Gasbuggy, NM, Site http://www.lm.doe.gov/Gasbuggy/Sites.aspx	x	x							x	x
Gnome-Coach, NM, Site http://www.lm.doe.gov/Gnome/Sites.aspx	x	x				x			x	x
Rio Blanco, CO, Site http://www.lm.doe.gov/Rio_Blanco/Sites.aspx	x	x	x						x	x
Rulison, CO, Site http://www.lm.doe.gov/Rulison/Sites.aspx	x	x	x						x	x
Salmon, MS, Site http://www.lm.doe.gov/salmon/Sites.aspx	x	x				x			x	x
Shoal, NV, Site http://www.lm.doe.gov/Shoal/Sites.aspx	x	x				x			x	x
Nuclear Waste Policy Act Section 151 Site										
Parkersburg, WV, Disposal Site http://www.lm.doe.gov/parkersburg/Sites.aspx	x	x				x			x	x
FUSRAP Sites										
Adrian, MI, Site http://www.lm.doe.gov/Adrian/Sites.aspx	x					x				
Albany, OR, Site http://www.lm.doe.gov/Albany/Sites.aspx	x					x				
Aliquippa, PA, Site http://www.lm.doe.gov/Aliquippa/Sites.aspx	x					x				
Burris Park, CA, Site http://www.lm.doe.gov/BurrisPark/Sites.aspx	x					x				
Chicago South, IL, Site http://www.lm.doe.gov/chicago_south/Sites.aspx	x					x				
Fairfield, OH, Site http://www.lm.doe.gov/fairfield/Sites.aspx	x					x				
Madison, IL, Site http://www.lm.doe.gov/madison/Sites.aspx	x					x				
New Brunswick, NJ, Site http://www.lm.doe.gov/New_Brunswick/Sites.aspx	x					x				
Niagara Falls Storage Site Vicinity Properties, NY, Site http://www.lm.doe.gov/niagara/vicinity/Sites.aspx	x					x				
Seymour, CT, Site http://www.lm.doe.gov/seymour/Sites.aspx	x					x				
CERCLA/RCRA Sites										
Laboratory for Energy Related Health Research, CA, Site http://www.lm.doe.gov/LEHR/Sites.aspx	x	x				x	x		x	x

^a Types of Environmental Monitoring reports include

- Data Validation Packages
- Verification Monitoring reports
- Groundwater Monitoring Reports
- Post-Closure Inspection and Monitoring reports
- Hydrologic and Natural Gas Sampling and Analysis reports

^b GEMS (Geospatial Environmental Mapping System): A custom, web-based application to gather validated information for sites that have been transferred into LM. Stakeholders, regulators, and project personnel can use GEMS to design interactive tabular reports, graphs, and geospatial displays. Available data includes:

- Historical environmental information
- Analytical chemistry data
- Groundwater depths and elevations
- Well logs and well construction data
- Georeferenced boundaries
- Site physical features
- Sampling locations

Table 3: Category 3 Sites

(Typically involves operation and maintenance of remedial action system, routine inspection and maintenance, records-related activities, and stakeholder support)

Site Name	Type of Data Collected					Where Data Are Reported						
	Inspection	Groundwater and/or Surface Water Monitoring Data	Discharge Monitoring	Other Environmental Monitoring (biological, soil, etc.)	Chemical inventories ^a	Site Inspection Report	CERCLA Five-Year Report	Annual Site Inspection and Monitoring Report for UMTRCA Title I or Title II Sites	EPCRA Report	NPDES Report	Environmental Monitoring Report ^b	GEMS ^c
UMTRCA Sites												
Durango, CO, Processing Site and Raffinate Ponds http://www.lm.doe.gov/Durango/Processing/Sites.aspx		x									x	x
Durango, CO, Disposal Site http://www.lm.doe.gov/Durango/Disposal/Sites.aspx	x	x						x			x	x
Grand Junction, CO, Processing Site http://www.lm.doe.gov/Grand_Junction_DP/Processing/Sites.aspx	x	x									x	x
Grand Junction, CO, Disposal Site http://www.lm.doe.gov/Grand_Junction_DP/Disposal/Sites.aspx	x	x			x			x			x	x
Shiprock, NM, Disposal Site http://www.lm.doe.gov/Shiprock/Sites.aspx	x	x		x				x			x	x
Tuba City, AZ, Disposal Site http://www.lm.doe.gov/Tuba/Sites.aspx	x	x	x		x			x	x		x	x
CERCLA/RCRA Sites												
Fernald Preserve, OH, Site ^d http://www.lm.doe.gov/Fernald/Sites.aspx	x	x	x	x	x	x	x			x	x	x
Monticello, UT, Processing Site http://www.lm.doe.gov/Monticello/Sites.aspx	x	x	x			x	x				x	x
Monticello, UT, Disposal Site http://www.lm.doe.gov/Monticello/Sites.aspx	x	x	x			x	x				x	x
Mound, OH, Site http://www.lm.doe.gov/Mound/Sites.aspx	x	x	x			x	x			x	x	x
Pinellas County, FL, Site http://www.lm.doe.gov/pinellas/Sites.aspx	x	x			x						x	x
Rocky Flats Site, CO http://www.lm.doe.gov/Rocky_Flats/Sites.aspx	x	x		x	x	x	x		x		x	x
Weldon Spring, MO, Site http://www.lm.doe.gov/Weldon/Sites.aspx	x	x			x	x	x			x	x	x

^a Certain sites conduct chemical inventories to ensure compliance with EPCRA.

^b Types of Environmental Monitoring Reports include

- Data Validation Packages
- Verification Monitoring reports
- Groundwater Monitoring reports
- Hydrologic and Natural Gas Sampling and Analysis reports
- Federal Facility Agreement Quarterly reports

^c GEMS (Geospatial Environmental Mapping System): A custom, web-based application to gather validated information for sites that have been transferred into LM. Stakeholders, regulators, and project personnel can use GEMS to design interactive tabular reports, graphs, and geospatial displays. Available data includes:

- Historical environmental information
- Analytical chemistry data
- Groundwater depths and elevations
- Well logs and well construction data
- Georeferenced boundaries
- Site physical features
- Sampling locations

^dThis site has an Annual Site Environmental Report as required in *Comprehensive Legacy Management and Institutional Controls Plan* (LMICP) (DOE 2016). It is available on the site specific webpage.

Table 4: CY 2015 Groundwater Monitoring Program Summary

Site Name	Rad Monitoring ^a	Non-Rad Monitoring ^b	COCs ^c	Active Wells	POC Wells ^d	Exceedance at POC Wells
UMTRCA Sites						
Ambrosia Lake, NM, Disposal Site		x	Molybdenum, nitrate + nitrite as nitrogen, selenium, uranium	3	0	
Bluewater, NM, Disposal Site		x	Molybdenum, polychlorinated biphenyls, selenium, uranium	20	4	No
Burrell, PA, Disposal Site		x	Calcium, chloride, iron, lead, magnesium, manganese, molybdenum, nitrate as nitrogen, potassium, selenium, sodium, sulfate, total dissolved solids, uranium	8	0	
Canonsburg, PA, Disposal Site		x	Total uranium	5	3	No
Durango, CO, Disposal Site		x	Molybdenum, selenium, uranium	7	3	No
Durango, CO, Processing Site		x	Cadmium, manganese, molybdenum, selenium, sulfate, uranium	13	8	Yes ^e
Falls City, TX, Disposal Site		x	Total uranium	12	0	
Grand Junction, CO, Disposal Site		x	Molybdenum, nitrate as nitrogen, polychlorinated biphenyls, selenium, sulfate, total dissolved solids, uranium, vanadium	3	0	
Grand Junction, CO, Processing Site		x	Ammonia (as NH ₄), molybdenum, uranium	5	0	
Green River, UT, Disposal Site		x	Nitrate, sulfate, uranium	18	4	No
Gunnison, CO, Disposal Site		x	Calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total dissolved solids, uranium	16	6	No
Gunnison, CO, Processing Site		x	Manganese, uranium	33	26	Yes ^f
Lakeview, OR, Disposal Site		x	Arsenic, cadmium, uranium	9	8	No
L-Bar, NM, Disposal Site		x	Chloride, nitrate + nitrite as nitrogen, selenium, sulfate, total dissolved solids, uranium	11	4	No
Monument Valley, AZ, Processing Site		x	Ammonia total as nitrogen, chloride, sulfate, uranium, vanadium	46	0	
Naturita, CO, Processing Site		x	Uranium, vanadium	9	9	No
Rifle, CO Processing (New) Site		x	Arsenic, molybdenum, nitrate as nitrogen, selenium, uranium, vanadium	16	4	Yes ^g
Rifle, CO Processing (Old) Site		x	Selenium, uranium, vanadium,	8	8	Yes ^h
Riverton, WY, Processing Site	x	x	Manganese, molybdenum, sulfate, uranium	70	53	Yes ⁱ
Sherwood, WA, Disposal Site		x	Chloride, sulfate, total dissolved solids	3	0	
Shiprock, NM, Disposal Site		x	Ammonium, manganese, nitrate, selenium, strontium, sulfate, uranium	128	0	
Shirley Basin South, WY, Disposal Site	x	x	Cadmium, chromium, lead, nickel, radium-226, radium-228, selenium, thorium-230, uranium	14	4	Yes ^j
Slick Rock, CO, Processing Site	x	x	Benzene, manganese, molybdenum, nitrate, radium-226, radium-228, selenium, toluene, uranium	13	13	Yes ^k
Tuba City, AZ, Disposal Site		x	Molybdenum, nitrate, selenium, uranium	124	124	Yes ^l

Table 4: CY 2015 Groundwater Monitoring Program Summary						
Site Name	Rad Monitoring ^a	Non-Rad Monitoring ^b	COCs ^c	Active Wells	POC Wells ^d	Exceedance at POC Wells
CERCLA/RCRA Sites						
Fernald Preserve, OH, Site	x	x	Alpha-chlordane, antimony, Aroclor-1254, arsenic , barium, beryllium, benzene, bis(2-chloroisopropyl)ether, bis(2-ethylhexyl) phthalate, boron , bromodichloromethane, bromomethane, cadmium, carbazole, carbon disulfide , chloroethane, chloroform, chromium(VI), cobalt, copper, ethylbenzene, fluoride, lead , manganese , mercury, methylene chloride, molybdenum , neptunium-237, nickel , total nitrate + nitrite , octachlorodibenzo- <i>p</i> -dioxin, radium-226, radium-228, selenium, silver, strontium-90, technetium-99 , thorium-228, thorium-230, thorium-232, trichloroethene , total uranium , vanadium, vinyl chloride, zinc , 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, 4-methylphenol, 4-nitrophenol, and 2,3,7,8-tetrachlorodibenzo- <i>p</i> -dioxin	179	179	Yes ^m
Monticello, UT, Disposal and Processing Sites	x	x	Arsenic, gross alpha activity, gross beta activity, manganese, molybdenum, nitrate, selenium, uranium, vanadium	157	0	
Mound, OH, Site		x	Tetrachloroethene, trichloroethene, tritium, vinyl chloride, <i>cis</i> -1,2-dichloroethene, <i>trans</i> -1,2-dichloroethene	39	0	
Pinellas County, FL, Site		x	Benzene, trichloroethene, vinyl chloride, 1,1-dichloroethene, 1,4-dioxane, <i>cis</i> -1,2-dichloroethene, <i>trans</i> -1,2-dichloroethene	110	0	
Rocky Flats Site, CO	x	x	Volatile organic compounds, semi-volatile organic compounds, metals, plutonium, americium, uranium, nitrate (For a detailed list of COCs see the site webpage)	88	0	
Weldon Spring, MO, Site		x	Nitrate, nitrobenzene, trichloroethene, uranium, 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2,4,6-trinitrotoluene	106	0	
D&D Sites						
Grand Junction, CO, Site		x	Manganese , molybdenum, selenium, sulfate , uranium	7	7	Yes ⁿ
Hallam, NE, Decommissioned Reactor Site	x		Gamma-emitting nuclides, gross alpha, gross beta, nickel-63, tritium	19	0	
Site A/Plot M, IL, Decommissioned Reactor Site	x		Strontium-90, tritium	19	0	

Table 4: CY 2015 Groundwater Monitoring Program Summary

Site Name	Rad Monitoring ^a	Non-Rad Monitoring ^b	COCs ^c	Active Wells	POC Wells ^d	Exceedance at POC Wells
Nevada Offsites						
Central Nevada Test Area, NV	x		Carbon-14, iodine-129, tritium	10	9	No
Gasbuggy, NM, Site	x		Gamma-emitting nuclides, tritium	5	0	
Gnome-Coach, NM, Site	x		Cesium-137, strontium-90, tritium, enriched tritium	5	0	
Rio Blanco, CO, Site	x		Gamma-emitting nuclides, tritium	4	0	
Rulison, CO, Site	x		Gamma-emitting nuclides, tritium	20	0	
Salmon, MS, Site	x	x	Arsenic, barium, gamma-emitting nuclides, gross alpha, gross beta, lead, tritium	32	0	
Shoal, NV, Site	x	x	Carbon-14, iodine-129, tritium	13	9	No
Nuclear Waste Policy Act Section 151 Site						
Parkersburg, WV, Disposal Site	x	x	Antimony, barium, beryllium, cadmium, calcium, chloride, chromium, gross alpha, gross beta, hafnium, lead, magnesium, mercury, nickel, nitrate + nitrite, potassium, radium-226, radium-228, selenium, sodium, sulfate, thallium, thiocyanate, uranium, zirconium	6	0	

Notes for column headings-

^a Rad Monitoring refers to groundwater sampling for radiological analytes (including uranium isotopes).

^b Non-Rad Monitoring refers to groundwater sampling for non-radiological analytes (including elemental uranium).

^c COCs that have been exceeded at POC wells are in **bold**.

^d For the purposes of this report, a POC well is an active monitoring well at which regulatory standards apply.

Reports that document COC exceedances-

^e Durango, CO, Processing Site: Will be included in the *2019 Verification Monitoring Report for the Durango, Colorado, Processing Site*.

^f Gunnison, CO, Processing Site: *2015 Verification Monitoring Report for the Gunnison, Colorado, Processing Site* (June 2016).

^g Rifle, CO, Processing (New) Site: Data Validation Package for June-July 2015 Groundwater and Surface Water Sampling at the Old and New Rifle, Colorado, Processing Sites (November 2015).

^h Rifle, CO, Processing (Old) Site: Data Validation Package for June-July 2015 Groundwater and Surface Water Sampling at the Old and New Rifle, Colorado, Processing Sites (November 2015).

ⁱ Riverton, WY, Processing Site: *2015 Advanced Site Investigation and Monitoring Report, Riverton, Wyoming Processing Site* (April 2015).

^j Shirley Basin South, WY, Disposal Site: *Data Validation Package for July 2015 Groundwater Sampling at the Shirley Basin South, Wyoming, Disposal Site* (October 2015).

^k Slick Rock, CO, Processing Site: *Verification Monitoring Report for the Slick Rock, Colorado, Processing Sites: September 2015 Sampling* (Est. September 2016).

^l Tuba City, AZ, Disposal Site: *Data Validation Package for August 2015 Groundwater and Surface Water Sampling at the Tuba City, Arizona, Disposal Site* (November 2015).

^m Fernald, OH, Site: *Fernald Preserve 2015 Site Environmental Report* (May 2016).

ⁿ Grand Junction, CO, Site: *Data Validation Package for February 2015 Groundwater and Surface Water Sampling at the Grand Junction, Colorado, Site* (April 2015).

Note- COCs may be exceeded at POC wells without a resultant violation. This is due to differences in the site specific compliance agreements and strategies. See the site specific documents listed above for more information (available at <http://energy.gov/lm/office-legacy-management>).