



LMS/POL/S04329-3.0

Environmental Protection Manual

*S*toller
Legacy Management Team

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Environmental Protection Manual Document History

Version No./ Revision No.	Date	Description of Change
3.0	10/07/2011	Updated to include new DOE Order 436.1 and to remove references to DOE Orders 450.1A and 430.2B, which DOE Order 436.1 replaces. Minor editorial changes made throughout the document.
2.0	05/20/2011	Wording was added to Section 4.4.1.1, "Monitoring Wells," to refer the reader to the <i>Environmental Procedures Catalog</i> . This closes out IP-10-03, "Specific Well-Permitting Requirements for Drilling Monitoring Wells in Colorado."
1.0	05/01/2010	This revision includes a review and update of the entire document.
0.1	02/12/2009	Removed obsolete references to the <i>Environmental Services Desk Instructions Manual</i> .
0.0	10/06/2008	Initial issue under the Legacy Management Support contract. This document replaces STO 11, Environmental Management System Implementation Manual, Environmental Management Program.

Approved:



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Abbreviations

AEA	Atomic Energy Act
BOA	Basic Ordering Agreement
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	<i>Code of Federal Regulations</i>
CWA	Clean Water Act
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DQO	Data quality objective
EA	Environmental Assessment
EC	Environmental Compliance
EIS	Environmental Impact Statement
EMS	Environmental Management System
EMS Description	<i>Environmental Management System Description</i>
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FMP	Fire management plan
H&S	Health and Safety
Hazmat	Hazardous materials
HRM	Hazardous and radioactive materials and wastes
HSWA	Hazardous and Solid Waste Amendments
IATA	International Air Transport Association
ICPT	Integrated Contractor Purchasing Team
LM	Office of Legacy Management
LMS	Legacy Management Support
LMS SAP	<i>Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites</i>
MSDS	Material safety data sheet
NCO	NEPA compliance officer

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NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
PCBs	polychlorinated biphenyls
POC	point of contact
PPA	Pollution Prevention Act
PSD	Prevention of Significant Deterioration
QSAS	Quality Systems for Analytical Services
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SA	Sustainable Acquisition
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHPO	State historic preservation officer
SIP	State implementation plan
THPO	Tribal historic preservation officer
TSCA	Toxic Substances Control Act
UMTRCA	Uranium Mill Tailings Radiation Control Act
USACE	U.S. Army Corps of Engineers
U.S.C.	<i>United States Code</i>
USFWS	U.S. Fish and Wildlife Service
UST	Underground storage tank
WFMP	Wildland fire management plan
WM/P2	Waste Minimization and Pollution Prevention

Forms Referenced in This Manual

Forms can be found on the Contractor page of the LM Intranet.

Project/Activity Evaluation	LMS 1005
Job Safety Analysis (JSA)	LMS 1748e
Environmental Aspects/Hazardous Assessment (EA/HA) Checklist	LMF 450.1

Executive Summary

Environmental protection is conducted under the umbrella of the Environmental Management System (EMS) run jointly by the U.S. Department of Energy (DOE) Office of Legacy Management (LM) and the Legacy Management Support (LMS) contractor. The EMS mandates compliance with applicable environmental regulations to ensure that air, water, land, and other natural and cultural resources are protected. It provides a method for minimizing the environmental impacts associated with work activities and services performed by, and products developed or procured by, LM, its contractors, and its subcontractors. Each year, LM and the LMS contractor transition new sites; conduct inspections and site maintenance; review current and potential land-use objectives; collect environmental samples to monitor the air, water, and soil conditions at LM sites across the United States; and evaluate sample data relevant to site-specific regulations, requirements, and agreements in support of the LM mission. This manual describes the LMS contractor's environmental protection programs and summarizes their implementation under the nationwide EMS.

The EMS has two areas of focus: environmental compliance and environmental sustainability. The environmental compliance component of the EMS consists of several environmental compliance and monitoring programs described herein, which implement federal, state, tribal, and local regulatory requirements, agreements, and permitted activities under the LMS contract. The environmental sustainability component promotes and integrates sustainability initiatives, such as energy and natural resource conservation, waste minimization, green construction, and use of eco-friendly products and services into all phases of work. The LM EMS implementation strategy is documented in three manuals:

- [1] The *Environmental Management System Description* (including the LM policy statement) (LMS/POL/S04346), which describes the mechanisms for implementing the EMS.
- [2] The *Environmental Management System Programs Manual* (LMS/POL/S04388), also known as the EMS Programs Manual, which describes the implementation of the nine environmental sustainability programs: Energy Efficiency and Green House Gases, Renewable Energy, Water Conservation, Sustainable Acquisitions, Waste Minimization and Pollution Prevention (WM/P2), Sustainable Buildings, Vehicle and Fuel Use, Electronic Stewardship, and Land Stewardship.
- [3] This *Environmental Protection Manual*, which describes the implementation of environmental compliance and monitoring programs.

The LMS EMS adheres to the “Plan-Do-Check-Act” core principles and the guiding principles outlined in the *Integrated Safety Management System Description with Embedded Worker Safety and Health Program* (LMS/POL/S04328). The EMS provides mechanisms for planning and mitigating negative impacts of proposed projects or actions on the environment by mandating environmental compliance; promoting use of recycled content materials; recycling to the extent practicable; conserving fuel, energy, and natural resources; minimizing the generation of greenhouse gases, the generation of hazardous wastes, and the use of toxic chemicals; and enhancing ecosystems disrupted by DOE activities.

Environmental objectives and targets for the remediation of LM sites are set forth in the Comprehensive Environmental Response, Compensation, and Liability Act; the Resource Conservation and Recovery Act; the Uranium Mill Tailings Radiation Control Act; Federal

Facility Compliance Agreements; and related documentation. Regulatory compliance requirements and sustainability opportunities are evaluated for proposed actions undertaken at LM sites as part of the *LMS Projects and Programs Manual* (LMS/POL/S05760) and the *Conduct of Operations Manual* (LMS/POL/S04374) workflow process, using the Project/Activity Evaluation (Form LMS 1005), any subsequent National Environmental Policy Act of 1969 (NEPA) documentation, and work planning processes. Other LMS systems and documents with requirements that support the implementation of EMS environmental compliance and performance are referenced in applicable chapters of this manual.

Executive Order (EO) 13423 and “Instructions for Implementing EO 13423” require LM sites to have an EMS that includes an environmental compliance program. This manual and the associated documents and procedures referenced herein meet the requirements of an environmental compliance program as defined by the orders.

The President signed EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, in October 2009. The EO reinforces compliance with the Emergency Planning and Community Right-to-Know Act Tier 1 and Tier 2 reporting requirements. This emphasis has been reflected in the Chemical Management Program in Chapter 11.0 of this document. EO 13514 also establishes greenhouse gas emissions reduction as a comprehensive and integrated performance metric for all federal agencies, and focuses on increasing solid waste diversion, including construction debris and compostable food wastes, from landfills. The EMS Programs Manual aligns with the sustainability strategies outlined in EO 13514.

DOE Order 436.1, *Departmental Sustainability*, was issued in early 2011. This order replaces DOE Orders 450.1A and 430.2B and allows for more flexibility in implementing sustainable practices, while committing to compliance with the U.S. Environmental Protection Agency’s environmental regulations and requirements.

1.0 Environmental Regulatory Compliance and Oversight

1.1 Purpose

This chapter provides an overview of the environmental and regulatory compliance requirements that are generally applicable to work activities conducted by the Legacy Management Support (LMS) contractor for the U.S. Department of Energy (DOE) Office of Legacy Management (LM). This chapter also outlines individual and oversight responsibilities for performing work activities in compliance with applicable federal, state, tribal, and local environmental regulations and DOE requirements, including orders, guides, and policies. The primary purpose of environmental laws and regulations is to prevent or minimize adverse impacts to human health or the environment, and such laws are requisite to preserving, protecting, and restoring the quality of the environment.

It is the LMS contractor's policy to meet or exceed environmental protection standards by conducting operations and activities in full compliance with applicable environmental laws, regulations, and DOE requirements. Failure to comply with these laws, regulations, and requirements may pollute the environment and result in unfavorable consequences for DOE, the LMS contractor, and individuals. Such consequences may include fines, contractual penalties, termination of employment, and even imprisonment for willful disregard and violation of environmental regulations. Consequently, all employees must have a sound understanding of their job assignments and responsibilities and the environmental rules and regulations that apply to their individual duties.

1.2 Scope

Compliance with environmental regulations applies to activities and operations that the LMS contractor and its subcontractors perform for LM. LMS contractor personnel and subcontractors, temporary employees, and vendors providing support and services for the LMS contractor are expected to be knowledgeable of and compliant with the environmental rules, regulations, and requirements relative to their job assignments.

Many LM sites are subject to state directives, regulatory compliance orders and permits, and Federal Facility Agreements that establish the post-closure regulatory approach and other requirements at particular sites. Additionally, some sites maintain Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) permit waivers or enforce applicable, relevant, and appropriate requirements for sites implementing CERCLA Records of Decision (RODs). These types of compliance documents and associated requirements are implemented through site-specific plans and procedures and are addressed only in general terms in this document.

The following table provides a summary of the major federal environmental statutes, executive orders, and DOE requirements that govern many of the activities and operations performed by the LMS contractor.

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Federal Environmental Statutes^{a,b}
Archaeological Resources Protection Act of 1979
Atomic Energy Act of 1954 (AEA)
Clean Air Amendments of 1977
Clean Water Act of 1977 (CWA)
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)
Endangered Species Act of 1973 (ESA)
Energy Policy Act of 2005
Federal Facilities Compliance Act of 1992 (FFCA)
Federal Insecticide, Fungicide, and Rodenticide Act of 1972 (FIFRA)
Federal Land Policy and Management Act of 1976
Low-Level Radioactive Waste Policy Amendments Act of 1985
Migratory Bird Treaty Act of 1918
National Environmental Policy Act of 1969 (NEPA)
National Historic Preservation Act of 1966
Native American Graves Protection and Repatriation Act of 1990
Oil Pollution Act of 1990
Pollution Prevention Act of 1990 (PPA)
Resource Conservation and Recovery Act of 1976 (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA)
Safe Drinking Water Act of 1974 (SDWA)
Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, also known as the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)
Toxic Substances Control Act of 1976 (TSCA)
Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA)
Wild and Scenic Rivers Act of 1968
DOE Orders
DOE Order 144.1, <i>American Indian Tribal Government Interactions and Policy</i>
DOE Order 231.1A, <i>Environment, Safety, and Health Reporting</i>
DOE Order 435.1, <i>Radioactive Waste Management</i>
DOE Order 436.1, <i>Departmental Sustainability</i>
DOE Order 451.1B, <i>National Environmental Policy Act Compliance Program</i>
DOE Order 460.2A, <i>Departmental Materials Transportation and Packaging Management</i> , and implementing guide
DOE Order 5400.5, <i>Radiation Protection of the Public and the Environment</i>
Executive Orders
Executive Order 11514, <i>Protection and Enhancement of Environmental Quality</i>
Executive Order 11593, <i>Protection and Enhancement of the Cultural Environment</i>
Executive Order 11988, <i>Floodplain Management</i>
Executive Order 11990, <i>Protection of Wetlands</i>
Executive Order 12898, <i>Environmental Justice in Minority Populations and Low-Income Populations</i>
Executive Order 13007, <i>Indian Sacred Sites</i>
Executive Order 13175, <i>Consultation and Coordination with Indian Tribal Governments</i>
Executive Order 13287, <i>Preserve America</i>
Executive Order 13423, <i>Strengthening Federal Environmental, Energy, and Transportation Management</i> , and "Instructions for Implementing Executive Order 13423"
Executive Order 13514, <i>Federal Leadership in Environmental, Energy, and Economic Performance</i>

^a Many of these federal statutes have implementing regulations that have been promulgated by individual states and tribes. Although many states have been authorized to implement various regulatory programs, the authorization status for any given statute may vary from one state to the next. Therefore, compliance with many federal regulations also must be determined and verified at the state and tribal level.

^b Although this is not an all-inclusive list, it does provide a summary of the major environmental statutes and orders that apply to the LMS contractor's activities performed in support of LM.

The following chapters of this manual provide a framework for implementing the regulations and orders that drive environmental compliance activities:

- Chapter 2.0 National Environmental Policy Act Program
- Chapter 3.0 Environmental Monitoring Program
- Chapter 4.0 Groundwater Protection Program
- Chapter 5.0 Surface Water Protection Program
- Chapter 6.0 Air Quality Protection Program
- Chapter 7.0 Natural Resources Management Program
- Chapter 8.0 Cultural Resource Management Program
- Chapter 9.0 Waste Management Program
- Chapter 10.0 Transportation Program for Hazardous and Radioactive Materials and Wastes
- Chapter 11.0 Chemical Management Program
- Chapter 12.0 Wildland Fire Management Program

1.3 Responsibilities

LMS contractor employees and subcontractors are responsible for conducting activities in compliance with federal, state, tribal, and local environmental laws and regulations, Executive Orders (EOs), and DOE requirements. Additional responsibilities for LMS contractor employees include the following.

1.3.1 All Employees

- Be aware of and assist with the implementation of the basic “Plan-Do-Check-Act” elements of the *Environmental Management System Description* (EMS Description) (LMS/POL/S04346) and this manual as they apply to employees’ job duties and responsibilities.
- Understand and implement the LM Environmental Safety and Health Policy, located in the EMS Description.
- Report environmental concerns and observations to management and the Environmental Compliance (EC) group. If an employee has questions regarding any aspect of his or her work or is unsure if a certain activity is legal, that employee is responsible for raising the concern to management and EC. Issues and situations involving noncompliance with environmental requirements must be reported to the EC manager and site lead/line manager as soon as possible.
- Be energy-efficient, minimize wastes produced, prevent pollution to the greatest extent possible, and perform work activities in a manner that minimizes impacts to the environment and preserves natural resources.

- Support the success of the EMS compliance and sustainability programs through the purchase and procurement of green products and services.
- Provide input and feedback on ways to improve operations and activities associated with environmental protection through the Continuous Improvement Program.

1.3.2 Management and Site Leads

- LMS managers and project planning staff are responsible for contacting the EC manager or other pertinent EC staff at the conceptual design phase of project planning, whether planning a new action or changing the scope, schedule, or implementation strategy of an existing action.
- Site leads/line managers, in cooperation with the EC and Health and Safety (H&S) staffs, are responsible for using the Job Safety Analysis (JSA) (Form LMS 1748e) and Project/Activity Evaluation (Form LMS 1005), which are available on the LM Intranet under “Forms,” to identify potential environmental impacts and health and safety hazards associated with new work activities or changes in scope of existing work. The Project/Activity Evaluation Checklist is discussed in Section 1.4.2.
- Site leads/line managers are responsible for including EC personnel in weekly meetings, work readiness reviews, constructability reviews, site inspections by regulatory agencies, and reviews of relevant regulatory correspondence.

1.3.3 Environmental Compliance

Although compliance with applicable environmental regulatory requirements is the responsibility of all employees, the EC organization, in support of the site lead/line manager, is responsible for overseeing environmental compliance and regulatory affairs associated with planning and executing work performed for LM. EC has primary responsibility for identifying and communicating applicable environmental regulatory compliance requirements to project staff and management and for ensuring that all programs, projects, and day-to-day work activities are conducted in an environmentally responsible and compliant manner. More specifically, EC is responsible for:

- Serving as a contact with DOE and the various environmental regulatory agencies to define and interpret the environmental requirements that apply to a given scope of work.
- Participating in project planning and task order development activities to ensure that environmental compliance requirements are identified up front, properly funded, and executed.
- Developing and maintaining LMS contractor environmental project and program documents.
- Coordinating activities necessary to maintain the EMS.
- Developing guidance, procedures, and other implementing instructions as necessary to support DOE’s environmental policy and work activities.
- Providing qualified technical resources to support implementation of environmental requirements by programs and facilities and ensure their consistent application.
- Preparing, obtaining, modifying, and ensuring compliance with environmental permit requirements in coordination with project staff.

- Preparing National Environmental Policy Act (NEPA) documentation in coordination with project staff.
- Determining and implementing waste- and chemical-management requirements.
- Coordinating, preparing, and submitting compliance-related reports, documents, and notifications that may be required by DOE orders; environmental permits; or federal, state, tribal, or local statutes (e.g., wastewater effluent discharge monitoring reports, annual National Emission Standards for Hazardous Air Pollutants reporting, annual site environmental reports, Resource Conservation and Recovery Act of 1976 [RCRA] biennial hazardous waste management reports, chemical inventory reporting).
- Identifying environmental training requirements and communicating those requirements to management and the LMS contractor training coordinator. EC will provide subject-matter expertise to assist in the development of applicable training and to ensure that the environmental-protection training meets site and employee needs.
- Coordinating and conducting environmental oversight, monitoring, surveillance, and measurement activities as appropriate to support mission objectives and goals.
- Determining off-site disposal needs and developing waste disposal subcontracts for disposal of hazardous, toxic, mixed, and low-level radioactive wastes.
- Fulfilling other EC responsibilities, as described in this manual.

1.4 Procedure

1.4.1 Organization

The EC manager establishes an EC point of contact (POC) for each site under the LMS contract. The EC POC serves as the EC team member for the sites to which he or she is assigned. Should expertise from other EC personnel be necessary, the EC POC will request assistance from the EC organization. If assistance from outside the EC organization is necessary, it is the POC's responsibility to contact the EC manager and request it.

1.4.2 Planning and Integration of Environmental Requirements

Planning is the cornerstone of an effective regulatory compliance program. Therefore, the procedure for regulatory compliance and oversight emphasizes the need to integrate the identification of environmental requirements into the planning stages of work activities.

During task order development, the site lead/line manager budgeting for project-specific or site-specific activities that may impact the environment will contact the EC manager to ensure that environmental compliance requirements are identified and budgeted for each task order. The EC manager will review and revise, as necessary, the LM Environmental Aspects/Hazardous Assessment (EA/HA) Checklist (Form LMF 450.1), which is available on the LM Intranet under "Forms." The EC manager then designates an EC POC to accomplish the compliance tasks associated with the assigned sites.

For new and significant changes to site activities, including any subcontracted work, the EC POC, H&S staff, and the site lead/line manager will complete a Project/Activity Evaluation to identify the specific environmental impacts and health and safety hazards associated with new

work activities or changes in work scope. The Project/Activity Evaluation is a part of the LMS contractor's conduct of operations workflow process and allows EC and H&S to become involved in the early planning stages, such that environmental sustainability, environmental compliance, and worker safety concerns are addressed and integrated into the planning process. This manual and the EMS Description discuss the regulatory and environmental aspects of LMS contractor work activities identified on the Project/Activity Evaluation form. The Project/Activity Evaluation is also part of the "LMS Contractor Workflow" diagram and implementing instructions in the *LMS Projects and Programs Manual* (LMS/POL/S05760). The five core functions of Stoller's Integrated Safety Management System (including the EMS) form the basis for the LMS contractor workflow process. These functions are defined in the *Integrated Safety Management System Description with Embedded Worker Safety and Health Program* manual (LMS/POL/S04328).

1.4.3 Compliance Actions

Once the site lead/line manager and the EC POC have discussed the nature and scope of upcoming work and the environmental compliance requirements, the EC POC or a designee will proceed with evaluating potentially applicable regulatory requirements. EC staff will work with the project team and LM to integrate regulatory requirements, permits, and monitoring requirements into schedules, documents, plans, and procedures; obtain necessary permits and approvals to conduct work; and monitor the progress of required compliance actions.

1.4.4 Change in Scope of Task Order or Planned Activities

DOE-approved changes in task-order scope or schedule may require changes in environmental actions or requirements. In these cases, the site lead/line manager will contact the EC POC to discuss the change in scope and determine if changes to the NEPA approach or the regulatory compliance approach are required.

1.4.5 Communications and Negotiations with Regulators

To maintain consistency and professionalism in implementing environmental regulations for which EC has been assigned responsibility, EC staff will be party to LMS contractor communications and negotiations with federal, state, tribal, and local environmental agencies. Communications with environmental regulators must be documented, distributed to all affected parties (including the LMS contractor and DOE), and retained as a record in the project file.

1.4.6 Task Completion, Tracking, and Reporting

The EC POC will track and report the progress of EC-assigned environmental tasks to the site lead/line manager. EC personnel assigned to general compliance tasks are responsible for communicating the status to the EC manager, ensuring that actions are completed on time, and ensuring that records associated with the assigned tasks are properly managed. Copies of LM-wide environmental deliverables, which are forwarded to DOE and approved by DOE or approved by an outside agency and returned to DOE, will be provided to the applicable project managers for tracking and reporting purposes.

1.5 Training

The EMS Description requires periodic environmental training to ensure that all employees are aware of their responsibilities to comply with environmental rules and DOE requirements. The EMS Description recognizes the differences in the level of awareness required for each position and contains provisions for general awareness training (required for all employees) and competence training. Competence training is required for employees whose work activities have the potential to significantly affect the environment. Competence training may include specialized courses, such as annual RCRA training, U.S. Department of Transportation (DOT) training, and International Air Transport Association (IATA) Dangerous Goods training. Training specific to a regulation is identified in the appropriate chapters of this manual.

1.6 Records

The LMS contractor's Records Management Program provides guidance so that records created and received are managed effectively. The guidance was developed in accordance with applicable DOE and regulatory requirements and sound business practices. Management of records created as a result of environmental compliance tasks will comply with the records management guidance provided by the *Records Management Manual* (LMS/POL/S04327) and federal and state records retention requirements. Specific records requirements for any environmental element in this manual will be identified in the appropriate section of each chapter.

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2.0 National Environmental Policy Act Program

2.1 Purpose

This chapter describes how the LMS contractor implements the NEPA (Title 42 *United States Code* Section 4321 et seq. [42 U.S.C. 4321]) documentation and review process wherever it applies to work performed for LM. It is the LMS contractor's policy to follow the letter and spirit of NEPA, to comply fully with applicable regulations, and to follow the requirements of LM's NEPA Compliance Program.

2.2 Scope

The LMS contractor and its subcontractors will apply the NEPA review process early in the planning and decision-making stages to proposed actions on federal property and for federally financed activities. As the project evolves, changes to the scope of actions previously evaluated under NEPA may require further NEPA review. No ground-disturbing actions may begin until the appropriate levels of NEPA review, determination, documentation, and approval are completed.

In order to reduce potential duplication, special consideration is provided for sites that are remediated under CERCLA or RCRA. If the documentation that is completed under CERCLA or RCRA includes NEPA values, no additional NEPA documentation is necessary. The difficulty with this option is that the ROD may not include a specific project that is proposed after completion of the remedial action or may not include NEPA values. Work that is required to maintain and monitor the remedy is generally considered "covered" under the CERCLA integration of NEPA. In cases where it is unclear if NEPA values have been considered during the CERCLA process, the LM NEPA compliance officer (NCO) has the authority to make the final determination.

The following laws, regulations, and DOE requirements are pertinent to the LM NEPA Compliance Program.

NEPA (42 U.S.C. 4321 et seq.): This act instituted a national environmental policy and established the Council on Environmental Quality (CEQ) to implement the act. It requires all federal agencies to evaluate and document the environmental impacts of their proposed actions on the physical, biological, and cultural environments and to consider reasonable alternatives to those actions.

Title 40 Code of Federal Regulations Parts 1500 through 1508 (40 CFR 1500–1508): Regulations promulgated by the CEQ for implementing the procedural provisions of NEPA.

10 CFR 1021: DOE NEPA Implementing Procedures.

DOE Order 451.1B: This order establishes DOE's internal requirements and responsibilities for implementing NEPA.

LM Procedure 451.1B: The procedure describes LM's internal requirements, and the LMS contractor's requirements and responsibilities for implementing NEPA.

2.3 Responsibilities

Task managers, site leads/line managers, and EC staff work cooperatively to perform the NEPA planning and review process. Responsibilities are described for manager functions, for the EC POC, and for the LMS contractor NEPA coordinator.

2.3.1 Management and Site Leads

- Task managers and project planning staff are responsible for contacting the EC POC assigned to the site at the conceptual design phase of project planning or if an existing action is changed in scope or schedule.
- The site lead/line manager is responsible for budgeting and scheduling for the appropriate level of NEPA review and documentation for planned activities. This is done during the task order development or task order modification process.

2.3.2 Environmental Compliance

- The EC POC initiates the NEPA planning and review process by informing the NEPA coordinator of the proposed actions and schedule.
- The NEPA coordinator and the EC POC discuss the appropriate level of NEPA documentation and discuss NEPA aspects with the site lead.
- The NEPA coordinator is responsible for the following:
 - Ensuring that required NEPA documentation is completed (e.g., Environmental Checklist, Environmental Assessment [EA], Environmental Impact Statement [EIS]).
 - Establishing the necessary teams; ensuring EC POC, project management, and DOE involvement; and assigning responsibilities as appropriate to the level of NEPA documentation required and in accordance with the LM procedure.
 - Ensuring that NEPA-required reviews, determinations, and approvals are completed for proposed and continuing actions.
 - Coordinating NEPA-related tasks and concerns with the EC POC, the site lead and the LM NCO.
 - Communicating any schedule impacts and NEPA completion dates.
 - Preparing quarterly and annual reports, status summaries, and other documents required by NEPA-related regulations, DOE orders, guidance, and procedures.

2.4 Procedure

The NEPA planning and review process generally proceeds as follows.

- The site lead consults with the EC POC assigned to the site when any of the following occur: (1) a new action is proposed (conceptual design phase), (2) a change occurs in the scope of work of an existing action, (3) a change occurs in the implementation strategy of an existing action, (4) a new task order is initiated, or (5) a change occurs in a task order that affects the operation, location, or potential environmental impacts of an action.
- The EC POC contacts the NEPA coordinator to initiate a NEPA review.

- The NEPA coordinator prepares the appropriate NEPA documentation. During the documentation process, the NEPA coordinator may contact contractor subject-matter experts for assistance, as necessary.
 - For routine actions, the NEPA coordinator prepares an Environmental Checklist and upon EC POC review submits the NEPA documentation to the appropriate DOE site manager and LM NCO through the task manager. The LM NCO requires a minimum approval schedule of 2 weeks prior to any surface-disturbing actions.
 - For nonroutine actions, the applicable LM site manager and LM NCO determine the final required level of NEPA compliance, documentation, and path forward. The NEPA coordinator may provide a summary of concerns as well as the level of public interest to assist in the NEPA determination.

It is recommended that the NEPA coordinator be given a minimum of 30 days of advance notice before starting ground-disturbing actions, to allow scheduling time for the NEPA Environmental Checklist documentation process. If an EA is required, a minimum of 9 months of advance notice is recommended. If an EIS is required, a minimum of 18 months of advance notice is recommended. EISs require a significant level of team effort and public involvement. The NEPA coordinator will assist DOE in establishing the team, providing oversight, and ensuring that the EIS is developed in accordance with applicable requirements of the LM NEPA Procedure.

In addition to these internal procedures for incorporating NEPA, specific process requirements are available in DOE Order 451.1B and 10 CFR 1021.

2.5 Training

The LMS contractor NEPA coordinator, who is responsible for implementing the CEQ NEPA regulations as implemented by the DOE LM NEPA Procedure, must be experienced in the various applications of NEPA and related resource regulations. The coordinator must also have experience in evaluating multidisciplinary projects and determining the level and duration of potential impacts related to proposed projects.

2.6 Records

In addition to federal records retention requirements, all NEPA documents and documentation will be maintained in applicable project records in accordance with procedures in the *Records Management Manual*. Records may include biological assessments, human health assessments, transportation assessments, and any other supporting data and documentation used to make a NEPA determination.

In the case of EAs and EISs, an administrative record must also be maintained in accordance with DOE NEPA regulations and guidance.

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3.0 Environmental Monitoring Program

3.1 Purpose

The purpose of this chapter is to describe the key elements associated with LM's Environmental Monitoring Program. Environmental monitoring typically is required by regulations such as RCRA; CERCLA; the Uranium Mill Tailings Radiation Control Act (UMTRCA); or DOE orders, permits, agreements, or other compliance documents. Environmental monitoring must be budgeted, scheduled, and implemented following receipt of permits, notifications, and other forms of communication by authorized agencies.

3.2 Scope

Environmental monitoring may be conducted at any LM site. Required environmental monitoring includes both general and project-specific or permit-specific monitoring. General monitoring of environmental media such as air, surface water, and groundwater is required by federal, state, or tribal regulations to identify the nature and extent of contamination, to demonstrate compliance with regulatory standards, and to demonstrate that existing contamination is acting as predicted. Results of environmental monitoring are used to determine compliance strategies and to ensure the integrity of remedial actions. General monitoring also is required by DOE orders and is used where necessary to prepare annual site environmental reports.

Project-specific monitoring is normally associated with site-specific activities conducted in accordance with a sampling and analysis plan. Project-specific monitoring may be the result of negotiations with the applicable federal or state regulatory authority or may be associated with regulatory permit requirements or environmental laws, such as National Pollutant Discharge Elimination System (NPDES) permits, the Endangered Species Act (ESA), or RCRA, which have site-specific application and may have state- or tribe-specific requirements. Examples include wastewater discharges and mitigation measures identified in site-specific NEPA documents and site-specific terms and conditions identified in federal and state permits, or substantive compliance with permit requirements as applicable to CERCLA remediation activities.

Aspects of particular types of environmental monitoring are discussed further in the following chapters of this manual: Chapter 4.0, "Groundwater Protection ProgramSurface Water Protection Program"; and Chapter 6.0, "Air Quality Protection Program." Environmental monitoring plans should include data quality objectives (DQOs), developed in accordance with internal quality assurance and quality control plans, guidance documents, and applicable regulatory requirements. The DQO process assists the projects in defining the level of uncertainty associated with the results derived from environmental data.

Although contingency planning and emergencies are not within the scope of this document, any site incurring a natural disaster, including fire, earthquake, tornado, hurricane, flood, or significant rainstorm event, will be inspected within 30 days to ensure that monitoring wells, surface sampling locations, air monitoring stations, or other instrumentation or sampling devices remain intact and operational. Additionally, requirements for ensuring that groundwater monitoring well components are impervious to fire, and that groundwater data are not

compromised as a result of prescribed burns or wildland fires, are specified in Chapter 12.0, “Wildland Fire Management Program.” The EC POC shall receive copies of follow-up reports, notifications, and response plans. With DOE approval, the EC POC and the project lead shall provide verbal notification to appropriate environmental agencies.

3.3 Responsibilities

Following is an outline of responsibilities associated with environmental monitoring:

- The site lead/line manager, with the support of the EC POC (for compliance-driven monitoring), is responsible for managing general environmental monitoring activities.
- Environmental monitoring personnel are responsible for developing and implementing site sampling and analysis plans for surveillance monitoring activities.
- EC personnel are responsible for developing sampling and analysis plans pertaining to regulatory requirements and permits.
- The analytical laboratory coordinator is responsible for developing laboratory contracts with DOE-audited commercial laboratories to meet the needs of the LMS contractor and support the LM mission.
- Data quality control specialists are responsible for analytical data review, quality control review, and data entry into the SEEPro environmental database.
- Project staff, functional staff, or EC personnel may be responsible for project-specific environmental monitoring and associated reports (responsible party determined by mutual agreement of site lead/line manager and EC POC).
- EC personnel are responsible for evaluating analytical data as they apply to compliance with permit or permit-like standards, such as those found in an air permit or for discharges to waters of the state.
- All LMS contractor personnel conducting environmental monitoring, whether general or project-specific monitoring, are responsible for ensuring that monitoring data are recorded in the appropriate data repository and, if applicable, are made available to the EC POC to complete reporting and other requirements in a timely manner.

3.4 Procedure

Environmental monitoring procedures will vary, depending on the type of monitoring needed and the environmental media being monitored. The site lead/line manager or the functional manager and the EC POC will determine applicable monitoring procedures on the basis of the project or activity and the associated federal, state, and tribal regulatory requirements and DOE orders.

Key elements to help ensure compliance with environmental monitoring requirements are:

- Adequate project planning to identify actions and their associated potential environmental impacts and regulatory requirements, in accordance with the Project/Activity Evaluation described in the EMS Description.
- Development and implementation of program- or project-specific sampling and analysis plans.

- Knowledge of the regulatory requirements for environmental permitting and monitoring.
- EC oversight and review of permit monitoring and inspection activities.

The site lead/line manager, functional manager, and EC staff will conduct environmental oversight activities to verify that applicable requirements are implemented. In conjunction with normal project oversight, EC staff may conduct periodic internal reviews and assist with management assessments.

3.5 Training

LMS contractor and subcontractor workers who conduct environmental monitoring must be trained to proficiency levels for the equipment and methods used for monitoring activities. Specific environmental sampling and monitoring methods apply to different environmental media, many of which are included in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS SAP) (LMS/PLN/S04351).

EC staff must be knowledgeable of the pertinent regulatory requirements associated with environmental permitting and monitoring.

3.6 Records

Data that result from environmental monitoring are considered records and are used in various documents and to support environmental decision-making. The management of records created as a result of environmental monitoring will comply with the records management guidance provided by the *Records Management Manual* and federal and state records retention requirements.

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4.0 Groundwater Protection Program

4.1 Purpose

The purpose of this chapter is to describe how the LMS contractor manages work it performs for LM in a manner that protects groundwater quality and complies with federal, state, tribal, and local groundwater regulations.

4.2 Scope

The requirements of this chapter apply to any LM activities that may, or do, affect groundwater quality and classifications. LM owns or manages numerous sites, structures, and facilities. Some of the facilities are still operational, but many LM-managed sites are being remediated under various environmental statutes. Such sites may require long-term monitoring and treatment to ensure that groundwater is managed in accordance with federal, state, or tribal requirements. Following is a description of the primary environmental statutes pertinent to LM's Groundwater Protection Program.

Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et seq.): CERCLA was created primarily to authorize the U.S. Environmental Protection Agency (EPA) to clean up releases of hazardous substances from abandoned hazardous waste sites, including federal facilities. EPA was authorized to require potentially responsible parties, including federal agencies, to pay for necessary cleanup actions. CERCLA created the Superfund to pay for site cleanups when no responsible party could be identified. CERCLA requires industries to disclose to their communities the hazardous substances they use and store.

Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq., as amended): In 1976 and as amended in 1984, Congress enacted a comprehensive national program that encourages source reduction, high-technology treatment, and secure disposal of hazardous waste. This national policy mandates the treatment, storage, and disposal of hazardous wastes to minimize the present and future threat to human health and the environment. The Hazardous and Solid Waste Amendments (HSWA) authorized in 1984 expanded RCRA authority to require that permitted hazardous waste treatment, storage, and disposal facilities that have released waste to the environment at any time during their operations must take corrective action for all releases of hazardous constituents and wastes, regardless of when the waste was placed in the unit or whether the unit is active. RCRA permits must contain schedules of compliance for any corrective actions and assurances of financial responsibility for completing cleanup actions. In addition, if deemed necessary, cleanup actions can be required beyond the facility boundary.

Uranium Mill Tailings Radiation Control Act (42 U.S.C. 7901): This act established a program for assessment and remedial action at active and inactive uranium processing sites in order to minimize radiation health hazards to the public. The EPA established cleanup standards for these remedial actions, both for soil and groundwater. These standards are implemented through 40 CFR 192. The act also provides for the stabilization and control of uranium mill tailings in a safe and environmentally sound manner.

Safe Drinking Water Act (SDWA) (42 U.S.C. 300f et seq.): This act protects drinking water resources by establishing primary and secondary drinking water standards and related regulations. The SDWA drinking water standards are used to determine groundwater protection standards under a number of other statutes. The act governs the underground injection of contaminated fluids or wastes to protect groundwater quality. The act also establishes a cooperative program among local, tribal, state, and federal agencies to ensure safe drinking water for consumers.

Ancillary federal, state, tribal, and local requirements that support groundwater monitoring, such as those for well drilling and sampling methods, are also within the scope of this chapter.

Part of groundwater protection is to ensure that groundwater quality is not compromised during a natural or manmade destructive event. Requirements for ensuring that groundwater monitoring well components are impervious to fire and that groundwater data are not compromised as a result of prescribed burns or wildland fires are delineated in Chapter 12.0, “Wildland Fire Management Program.” The EC POC shall receive copies of follow-up reports, notifications, and response plans associated with fire events. With DOE approval, the EC POC and the project lead shall provide verbal notification to appropriate environmental agencies.

4.3 Responsibilities

Following is an outline of responsibilities associated with LM’s Groundwater Protection Program.

- Site leads/line managers are responsible for including the EC POC during project or activity planning, work readiness reviews, constructability reviews, and reviews of pertinent correspondence to ensure that all groundwater quality requirements are identified and properly scoped and budgeted.
- Site leads/line managers are responsible for managing site-specific routine groundwater monitoring, technical tasks, and subcontracted activities to ensure that groundwater is properly protected.
- The EC POC is responsible for ensuring that groundwater is properly protected through compliance with the applicable regulations and the overall Groundwater Protection Program. The POC is also responsible for determining the management of investigation-derived waste (including purge, development, and pumping-test water; drilling mud and soil cuttings; excess sample material; and contaminated personal protective equipment and sampling equipment). See Chapter 9.0, “Waste Management Program,” for more information.
- The EC POC is responsible for determining if SDWA regulations are applicable to specific groundwater-related activities.
- In coordination with the site lead/line manager, the EC POC is responsible for contacting pertinent federal, state, tribal, and local regulators regarding groundwater quality issues.

4.4 Procedure

4.4.1 Data Quality

The foundation of a groundwater protection program includes the acquisition of data of known quality from which decisions can be made to protect groundwater resources, human health, and the environment.

Measures taken to ensure data quality includes:

- Following prescribed procedures for installing, developing, maintaining, and decommissioning monitoring wells.
- Sampling groundwater.
- Procuring certified and audited analytical services.
- Maintaining data in a consistent and accessible format.

4.4.1.1 Monitoring Wells

Monitoring wells are the primary mechanism used to obtain groundwater quality and hydrologic data; therefore, they must be designed and installed in a consistent manner that will result in the collection of representative water samples and hydrologic data. Monitoring-well construction and installation details are described in site-specific statements of work or project-specific documents and are developed in accordance with federal, state, or tribal regulations.

To ensure that information for monitoring-well installation and decommissioning is properly completed, the EC POC will assist the site lead/line manager in the preparation of (1) state notifications and permits to drill wells and (2) notices of abandonment documentation, as required by local, tribal, or state regulations. Well-abandonment and installation documentation is maintained in hard copy in the Grand Junction EC files for access agreements and permit and abandonment records. Original files are maintained in the project record files; data relative to each well are captured in the environmental database SEEPro. For specific well-installation documentation and notification protocol for drilling groundwater monitoring wells, including Colorado-specific requirements, refer to the “Technical Comments for Well-Permitting Requirements on ASTM D 5092-04e1—Standard Practice for Design and Installation of Groundwater Monitoring Wells in Aquifers” located in the *Environmental Procedures Catalog* (LMS/POL/S04325).

Monitoring-well inspection and maintenance is an integral part of a groundwater protection program. If a monitoring well is damaged or vandalized, or if the integrity is compromised (e.g., deteriorating surface seal), the data obtained from that well may be adversely affected. Monitoring wells are inspected and maintained according to procedures specified in “Standard Practice for the Inspection and Maintenance of Groundwater Monitoring Wells” in the *Environmental Procedures Catalog*. When a monitoring well is no longer needed for data acquisition, it must be properly decommissioned (i.e., abandoned or transferred) following applicable regulations.

4.4.1.2 Groundwater Sampling

Sample collection procedures are critical to obtaining a representative groundwater sample of known quality. Groundwater samples are collected according to the procedures specified in the LMS SAP, as updated. This plan specifies detailed procedures and quality assurance measures that ensure that groundwater samples are collected in a consistent and technically defensible manner.

4.4.1.3 Analytical Services

As detailed in the LMS SAP, current analytical services for groundwater samples are procured under the DOE Integrated Contractor Purchasing Team (ICPT) Basic Ordering Agreement (BOA) as modified by the *Grand Junction Site Statement of Work for Analytical Laboratory Services* (DOE 2008). The ICPT BOA provides a standardized system for procuring analytical services from commercial laboratories. It includes a Statement of Work for Analytical Services and provisions for laboratory audits. Future analytical services for groundwater samples will be procured under the ICPT BOA.

Commercial laboratories provide these analytical services in accordance with the DOE Quality Systems for Analytical Services (QSAS) to ensure data of known, documented quality. The QSAS provides specific technical requirements and clarification of DOE requirements and conforms to DOE Order 414.1C, *Quality Assurance*. The QSAS requirements were developed as part of EPA's *National Environmental Laboratory Accreditation Conference*, Chapter 5, "Quality Systems" (EPA 2003), and provide a framework for performing, controlling, documenting, and reporting laboratory analyses.

4.4.1.4 Data Validation

Groundwater data are evaluated through the data-validation process to determine if they are of sufficient quality to support project objectives. Data validation involves verifying that field procedures were followed, assessing analytical laboratory performance, and screening for potential anomalies. Data validation is conducted in accordance with procedures in the "Standard Practice for Validation of Laboratory Data" in the *Environmental Procedures Catalog* and in Appendix C of the LMS SAP.

4.4.2 Compliance Monitoring

LM conducts compliance monitoring at numerous sites where DOE activities have affected groundwater resources. Characterization of groundwater contamination at these sites is generally documented in a site observational work plan or a remedial investigation/feasibility study, and the strategy to achieve compliance with applicable regulations is documented in a groundwater compliance action plan or a ROD. Details of the Compliance Monitoring Program, including monitoring program design, compliance requirements, maintenance of institutional controls, contingency plans, reporting, and periodic review, are specified in the site-specific plan that establishes long-term obligations, such as a long-term surveillance and maintenance plan.

4.4.3 Permit-Compliance Monitoring

LM conducts permit-compliance monitoring when active remediation requires a federal or site-specific permit to ensure that permitted activities remain in compliance with state, federal, or tribal standards and other permit-specific requirements. As an example, a wastewater discharge permit resulting from a groundwater treatment system may require sampling of the influent wells and outfalls and sampling at various stages during treatment, depending on the type and size of treatment system, the contaminants involved, and the requirements of the permit. This type of compliance sampling is covered under other chapters of this manual; however, overlap may occur during some sampling activities, and sampling and analytical efficiencies can be realized to avoid duplicating efforts and to reduce travel and overall costs for the projects.

It is the EC POC's responsibility to assist with the evaluation of permit-compliance sample results and ensure that they meet permit standards. It is also the EC POC's responsibility to report permit noncompliances to the project lead and to assist as requested with inspections, regulatory notifications, and reporting requirements under the permit.

4.4.4 Surveillance Monitoring

LM conducts surveillance monitoring, also known as cell-performance monitoring, at numerous sites to detect future impacts to groundwater resources from contaminants encapsulated in disposal cells. Details of the Surveillance-Monitoring Program, including monitoring program design, trigger levels, regulatory drivers, contingency plans, reporting, and periodic review, are specified in the site-specific plan that establishes long-term obligations for each site (e.g., post-closure agreements). Surveillance-monitoring programs for sites that are transferred to LM in the future will be addressed in long-term surveillance and maintenance plans or equivalent documents.

4.5 Training

No federal or state training is required for groundwater monitoring; however, on-the-job training is provided with regard to the implementation of this procedure. In addition, training in well installation, development, sampling, field analysis, and data validation, as noted in Section 4.4.1, is provided by the LMS contractor.

LMS contractor and subcontractor workers who conduct well installation, well development, groundwater sampling, and data validation must be trained to proficiency levels in accordance with applicable requirements in the LMS SAP. EC staff must be knowledgeable of the pertinent regulatory requirements associated with groundwater monitoring and data quality.

4.6 Records

In addition to federal and state records-retention requirements for groundwater data, records associated with the Groundwater Protection Program will be maintained in project files under the pertinent site name. These records will be managed in accordance with procedures in the *Records Management Manual*.

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5.0 Surface Water Protection Program

5.1 Purpose

The purpose of this chapter is to describe how the LMS contractor manages work it performs for LM in a manner that protects surface water quality and complies with federal, state, tribal, and local surface water regulations. The Surface Water Protection Program adheres to the principles of a watershed management approach as required by DOE Order 436.1 and described in the *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* (EPA 2008).

5.2 Scope

The requirements of this chapter apply to LM activities that may, or do, adversely affect surface water quality. The protection of surface water quality is governed by the Clean Water Act (CWA) (33 U.S.C. 1251 et seq.). The goal of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters” (33 U.S.C. 1251 Section 101). The CWA seeks to achieve this goal by imposing limitations on, or otherwise preventing, discharges of pollutants into waters of the United States from outfalls or point sources. These limitations are defined and enforced by EPA through permits, monitoring plans, and penalties for compliance failures. In addition to regulating pollutant discharges from point sources, the CWA regulates discharges of pollutants into surface water from dredge and fill activities within waters of the United States, including wetlands.

Sections 318, 402, and 405 of the CWA contain the provisions of the NPDES Program. The purpose of the NPDES Program is to regulate the discharge of pollutants from any point source into waters of the United States. The discharge of pollutants from a point source into waters of the United States is prohibited unless the discharge is authorized by an NPDES permit. The NPDES Program is designed to purify or treat contaminated wastewater before it is discharged into waterways. The three major types of pollution sources regulated under the NPDES Program are (1) publicly owned treatment works or wastewater treatment facilities that receive residential and commercial sewage for treatment, (2) industrial dischargers that discharge wastewater directly into a waterway, and (3) storm water runoff.

The watershed planning process uses a series of iterative steps to characterize existing and projected future conditions in a geographically defined watershed, identify and prioritize problems, define management objectives, develop protection or remediation strategies, and implement and adapt selected actions as necessary. When evaluating the need for dredge and fill, storm water runoff, or wastewater discharge permits, the LMS contractor will review and integrate applicable watershed management steps and processes to ensure adequate involvement of watershed stakeholders and protection of any associated water bodies.

5.2.1 Wastewater Discharges

Wastewater treatment facilities are sometimes required to support remedial programs and activities that are administered by LM. Consequently, NPDES wastewater discharge permits are sought on an as-needed basis. Jurisdiction for the administration of NPDES wastewater discharge permits and permit requirements vary from state to state and on tribal lands. NPDES permit requirements for wastewater discharges are codified at 40 CFR 122, Subparts A,

B, and C. Communication with the appropriate watershed management authorities is a priority when it is determined that a wastewater discharge permit is necessary.

5.2.2 Storm Water Discharges

The NPDES Stormwater Program regulates storm water discharges from three potential sources: municipal separate storm sewer systems, construction activities, and industrial activities. Most storm water discharges are considered point sources, and operators of these sources may be required to receive an NPDES permit before they can discharge. This permitting mechanism is designed to prevent storm water runoff from washing harmful pollutants into local surface waters such as streams, rivers, lakes, or coastal waters.

Storm water discharge resulting from construction activities associated with remedial or erosion control actions is the most common source of storm water runoff from DOE operations and activities. Section 402(p) of the CWA establishes NPDES permit application requirements for storm water discharges. Jurisdiction for the administration of NPDES storm water discharge permits may vary from state to state and on tribal lands. NPDES permit requirements for storm water discharges resulting from construction activities are codified at 40 CFR 122.26(b)(15).

Most states are authorized to implement the NPDES Stormwater Program and administer their own storm water permitting programs. EPA remains the permitting authority in a few states and territories, and on most tribal lands. For these areas, EPA provides oversight and issues storm water permits.

Communication with the appropriate watershed management authorities is a priority when it is determined that a permit for a small or large construction activity is necessary. The watershed approach for protecting aquatic ecosystems and human health has been important since it was described in 1991. This approach addresses water quality problems more efficiently and effectively than regulating individual pollutants and pollutant sources or implementing independent regulatory or nonregulatory programs.

5.2.3 Dredge and Fill Activities

Section 404 of the CWA regulates the discharge of dredge and fill material into waters of the United States, including wetlands, and establishes a permit program to ensure that such discharges comply with environmental requirements. The Section 404 Program is administered at the federal level by the U.S. Army Corps of Engineers (USACE) and EPA, and often includes cooperative agreements with various state and tribal agencies. Large projects are typically permitted through individual 404 permits, which are lengthy and costly to obtain. Nationwide permits are also available but may require additional information, such as preconstruction notifications, mitigation plans, and other permit-specific conditions. Although USACE is normally the primary permitting agency, EPA has primary jurisdiction on CERCLA sites. Dredge and fill activities may also be subject to CWA Section 401 certification by EPA or tribal agencies. Communication with the appropriate watershed management authorities is a priority when it is determined that a dredge and fill (Section 404) permit or a CWA Section 401 certification is necessary.

Wetlands are considered natural resources and are often subject to regulations in addition to those imposed by the CWA. Therefore, wetlands are addressed in Chapter 7.0, “Natural Resources Management Program.”

5.3 Responsibilities

Following is an outline of responsibilities associated with LM’s Surface Water Protection Program:

- Site leads/line managers are responsible for including EC personnel during project or activity planning, work readiness reviews, constructability reviews, and reviews of pertinent correspondence to ensure that all surface water quality and watershed management requirements are identified and are properly scoped and budgeted.
- In coordination with the site lead/line manager, EC personnel are responsible for serving as the POC with federal, state, and tribal regulators and watershed managers, as applicable, regarding surface water quality issues.
- In coordination with the site lead/line manager, EC personnel are responsible for developing surface-water-related permits and associated plans for submittal to DOE and federal, state, and tribal regulators.
- In coordination with the site lead/line manager, EC personnel are responsible for updating surface-water-related permits and plans, reporting excursions to DOE and appropriate agencies, and ensuring proper closeout of permitting requirements.
- Site leads/line managers, with the assistance of EC, are responsible for ensuring that all surface-water-related permit requirements are met during implementation of the associated project or activity.

5.4 Procedures

General procedures for protecting surface water quality with respect to activities at LM sites are as follows:

- The site lead/line manager contacts the EC POC when (1) an action is first proposed, (2) a change occurs in the scope of work of an existing action, (3) a change occurs in the implementation strategy of an existing action, (4) a new task order is initiated, or (5) a change occurs in a task order that affects the operation or location of an action.
- The EC POC evaluates the proposed activities to determine applicable surface water laws and regulations and the affected watershed.
- In coordination with the site lead/line manager, the EC POC contacts pertinent federal, state, or tribal regulators and watershed managers, as applicable, regarding surface water quality issues at LM sites.
- In coordination with the site lead/line manager, the EC POC develops surface-water-related permits and plans for pertinent LM sites.
- The site lead/line manager implements the requirements of surface-water-related permits and plans at pertinent LM sites.

There may be a need to monitor surface water quality at LM sites to ensure its protection. Therefore, procedures are necessary to perform such monitoring. As with groundwater monitoring, the acquisition of data of known quality is crucial for making correct decisions that protect surface water resources, human health, and the environment. The procedures presented below for surface water sampling, procuring analytical services, and validating data are essentially the same as those for groundwater.

5.4.1 Surface Water Sampling

Sample collection procedures are critical to obtaining a representative surface water sample of known quality. Surface water samples will be collected according to the procedures specified in the LMS SAP. This plan specifies detailed procedures and quality assurance measures, which ensure that surface water samples are collected in a consistent and technically defensible manner.

5.4.2 Analytical Services

Current analytical services are procured under the DOE ICPT BOA as modified by the *Grand Junction Site Statement of Work for Analytical Laboratory Services* (DOE 2008). The ICPT BOA provides a standardized system for procuring analytical services from commercial laboratories that have been audited and approved by DOE through the DOE Consolidated Audit Program and in most cases certified through the National Environmental Laboratory Accreditation Conference or state-specific certification programs. The ICPT BOA includes a Statement of Work for Analytical Services and provisions for laboratory audits. Future analytical services will continue to be procured through an ICPT BOA.

Commercial laboratories provide these analytical services in accordance with the DOE QSAS to ensure data of known, documented quality. The QSAS provides specific technical requirements and clarification of DOE requirements and conforms to DOE Order 414.1C, *Quality Assurance*. The QSAS requirements were developed as part of the EPA National Environmental Laboratory Accreditation Conference Standard, Chapter 5, "Quality Systems" (EPA 2003), and they provide a framework for performing, controlling, documenting, and reporting laboratory analyses.

All surface water data will be evaluated through the data-validation process to determine if data are of sufficient quality to support project goals. Data validation involves verifying that field procedures were followed, assessing analytical laboratory performance, and screening for potential anomalies. Data validation will be conducted according to procedures in Appendix C of the LMS SAP and the *Environmental Procedures Catalog*.

5.5 Training

EC personnel who make determinations about the applicability of storm water, wastewater discharge, or Section 404 permit requirements for LM activities must be knowledgeable of the NPDES storm water and wastewater regulations, watershed management requirements, and Section 404 permitting regulations. EC and Ecology personnel who make wetland determinations must be able to accurately assess hydric soil conditions and identify wetland plant species and hydrology indicators. In addition, they must be familiar with the delineation criteria presented in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the

Regional Supplements, as applicable, and be knowledgeable of the CWA Section 404 regulations.

LMS contractor workers who conduct surface water sampling and data validation must be trained to proficiency levels in accordance with applicable requirements in the LMS SAP.

5.6 Records

In addition to federal and state records retention requirements for surface water data, records associated with the Surface Water Protection Program will be maintained in project files under the pertinent site name. These records will be managed in accordance with procedures in the *Records Management Manual*.

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6.0 Air Quality Protection Program

6.1 Purpose

The purpose of this chapter is to describe how the LMS contractor manages work it performs for LM in a manner that protects air quality and complies with federal, state, tribal, and local air quality regulations and requirements.

6.2 Scope

The requirements of this chapter apply to LM activities that may, or do, adversely affect air quality. The protection of air quality is governed by the Clean Air Act (CAA) (42 U.S.C.7401).

The CAA establishes national emission and ambient air quality standards that impose limitations on the type and quantity of pollutants that may be released into the atmosphere. In addition, the CAA establishes a federal permitting program to regulate emissions of hazardous air pollutants into the air. Similar to the CWA, the Air Permit Program is administered by authorized states and in certain cases local and tribal agencies. Sites that are on or adjacent to tribal lands are responsible for communicating with the appropriate tribal representatives to discuss potential air quality impacts of LM activities. Because the Air Permit Program is fee-based, federal facilities are subject to fees or charges imposed by pertinent state or local agencies. The CAA also establishes administrative (monetary) penalties for violation of requirements and criminal sanctions for negligent or cognizant violations of requirements.

In general, regulatory programs under the CAA fall into three categories. First, new and existing sources of air pollution are subject to the National Ambient Air Quality Standards Program, which addresses pervasive air pollution problems and establishes standards for major pollutants, including sulfur dioxide, nitrogen oxides, carbon monoxide, ozone, lead, and particulate matter (40 CFR Part 50). Primary and secondary National Ambient Air Quality Standards are enforced through source-specific emission limits established in state implementation plans (SIPs).

Second, as a result of nonattainment areas within state boundaries, the Title I 1990 Amendments to the CAA were established. These amendments require that SIPs with nonattainment areas ensure that major new source emitters (with the potential to emit 10 to 100 tons per year of a nonattainment pollutant [40 CFR 52.21]) are subject to more stringent air pollution control technologies and new source performance standards (CAA Section 111). EPA new and modified source categories include most major industrial processes.

Third, the CAA addresses specific pollution problems that may adversely affect attainment areas, including hazardous air pollutants and visibility impairment. Sources located in attainment areas are subject to the Prevention of Significant Deterioration (PSD) Permit Program. The PSD Permit Program applies to sources that have the potential to emit more than 250 tons per year of regulated pollutants, or more than 100 tons per year of a single regulated pollutant (CAA Section 182(b)-(e)). The PSD Permit Program also addresses acid rain, visibility degradation, and chlorofluorocarbon emissions, as well as mobile source emissions. Technology-based regulation and additional air emission source restrictions are imposed through the evolving permitting program (CAA Section 112).

For the purposes of LM, regulated air emissions are most often a result of fugitive dust, radioparticulates, or radon. However, remedial activities at some sites may require air permits to facilitate groundwater treatment, or for major construction activities in attainment areas.

6.3 Responsibilities

Following is an outline of responsibilities associated with LM's Air Quality Protection Program:

- Site leads/line managers are responsible for including the EC POC during project or activity planning, work readiness reviews, constructability reviews, and reviews of pertinent correspondence to ensure that all air quality requirements are identified and are properly scoped and budgeted.
- In coordination with the site lead/line manager, the EC POC is responsible for serving as the POC with regulators regarding air quality issues.
- The EC POC is responsible for determining applicable air quality regulations and associated permitting requirements; developing plans and procedures needed to implement the Air Quality Protection Program; providing appropriate guidance for project activities to maintain compliance with applicable federal, state, tribal, and local regulations; establishing sampling points and monitoring air quality by collecting air samples; shipping the air samples for analysis, with assistance from the LMS laboratory coordinator; and preparing reports that document the validated data associated with air samples.

6.4 Procedure

Determining air quality requirements for LM activities generally proceeds as follows:

- Site leads/line managers contact the EC POC at the conceptual stage of project activities to allow sufficient time for determining air quality requirements, because the air permitting process with authorized states may take as long as 3 to 6 months.
- The EC POC reviews historical investigations of the site, applicable state air quality regulations, and local or tribal requirements. He or she also conducts an activity evaluation to determine if activities will affect air quality and if permitting and monitoring will be required.
- As applicable, the EC POC prepares the air permit application or an exemption/waiver from specific air emission regulations.
- The EC POC or other assigned personnel establishes sampling points and develops an appropriate sampling and analysis plan for conducting air monitoring.
- When monitoring is necessary, EC or Environmental Monitoring/Field Services collects air samples and ships them to a contracted laboratory, as directed by the LMS laboratory coordinator.
- The EC POC prepares reports summarizing air quality data with assistance from Environmental Support Services Data Management, which assigns site-specific sample numbers and maintains site-monitoring databases.

6.5 Training

EC personnel must be familiar with CAA regulations. EC personnel who conduct air monitoring must be familiar with the air sampling equipment used for data collection and work with field personnel to ensure that equipment is calibrated correctly. In addition, EC personnel may be required to become familiar with the SIP and complete opacity training provided by individual states.

6.6 Records

In addition to federal and state records retention requirements for air quality data, records associated with the Air Quality Protection Program will be maintained in project files under the pertinent site name. These records will be managed in accordance with procedures in the *Records Management Manual*.

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7.0 Natural Resources Management Program

7.1 Purpose

The purpose of this chapter is to describe how the LMS contractor manages work it performs for LM in a manner that protects natural resources in accordance with (1) federal, state, and tribal regulations and guidance and (2) applicable executive orders. LM Policy 450.8, *Environmental Safety and Health Policy*, requires LM to effectively integrate environmental management of natural resources into all activities. The LM/LMS-contractor joint EMS “Land Stewardship—EMS Program #9” recognizes the need for improving the approach to protecting natural resources. This Natural Resources Management Program and the Land Stewardship Program help DOE and the LMS contractor go beyond conservation by establishing partnerships with the local agencies and communities and by achieving enhanced ecosystems management on DOE-owned land.

7.2 Scope

This chapter addresses the management of natural resources as typically defined by federal and state natural resource managing agencies to include endangered species, wilderness, and wild and scenic rivers. The discussion is not intended to include the entire spectrum of natural resource regulations, but rather to focus on those regulations that are most likely to be affected by LM projects and activities. Aspects of natural resources that are within the scope of this chapter include (1) wildlife and plant species that are designated as having candidate, threatened, endangered, special, or sensitive status; (2) migratory and nonmigratory birds; and (3) floodplains and wetlands. These natural resources and their relevant environmental statutes and executive orders are discussed below. As indicated in Chapter 5.0, “Surface Water Protection Program,” the integration of a watershed management approach for the protection of floodplains and wetlands assists the LMS contractor in the protection of ecosystems and natural resources. Also identified in this chapter is the LM integrated Pest Management Program, which serves to eliminate or control noxious weeds, and invasive plants and insects by using an ecosystem management approach.

7.2.1 Wildlife and Plant Species Designated as Having Candidate, Threatened, Endangered, or Special Status

The ESA (16 U.S.C. 1531), administered by the U.S. Fish and Wildlife Service (USFWS), provides for the designation and protection of wildlife and plant species that are listed as candidate, threatened, or endangered (50 CFR 17) and protects the habitat and ecosystems on which these species depend. As of March 4, 2010, nearly 1,900 species of plants and animals in the United States were listed as endangered or threatened (USFWS 2010); USFWS updates this number frequently. The most important aspects of the regulations for LM’s mission are described in 50 CFR 402, which requires federal agencies to consult with USFWS to ensure that the agencies’ activities do not jeopardize the continued existence of threatened or endangered species, including critical habitat.

Individual states may grant special status to species even though USFWS does not deem the species threatened or endangered. In addition, the Bureau of Land Management and the U.S. Forest Service list sensitive species that require special consideration.

7.2.2 Migratory and Nonmigratory Birds

The Migratory Bird Treaty Act (16 U.S.C. 703) and the Fish and Wildlife Coordination Act (16 U.S.C. 661), as amended in 1988, focus on the protection of migratory and nonmigratory birds. USFWS administers both acts. Species of migratory birds protected under the Migratory Bird Treaty Act are listed in 50 CFR 10.13 as amended. The 1988 amendment to the Fish and Wildlife Coordination Act requires USFWS to “identify species, subspecies, and populations of all migratory nongame birds that . . . are likely to become candidates for listing under the Endangered Species Act” and “consider conservation measures that would limit the potential for listing.”

Birds of Conservation Concern (USFWS 2002) addresses bird species, subspecies, and populations that, without further conservation actions, are likely to become candidates for listing under the Endangered Species Act.

Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires all federal agencies to sign a Memorandum of Understanding with USFWS if there may be a measurable impact on migratory or nonmigratory birds or their habitat.

7.2.3 Floodplains and Wetlands

Executive Orders 11988, *Floodplain Management*, and 11990, *Protection of Wetlands*, require federal agencies to consider the potential effects of any actions they may conduct in floodplains or wetlands. In addition, DOE Order 436.1 requires the LMS contractor to communicate with agencies that manage the potentially affected watershed to ensure that activities in floodplains or wetlands are conducted in accordance with the watershed management approach. DOE actions that may affect floodplains or wetlands are regulated in 10 CFR 1022. Any LM-proposed action, regardless of size, that may affect floodplains or wetlands is potentially subject to regulation and permitting.

CWA Section 404 regulations, codified in 33 CFR 325, apply to dredge and fill activities within wetlands (see CWA Section 404, Subsection 6.2.3). The Section 404 Program is administered at the federal level by USACE and EPA, and often includes cooperative agreements with various state and tribal agencies. USFWS also plays an important advisory role in the proper management of wetlands. Activities within floodplains and wetlands may also be subject to CWA Section 401 certification from EPA (33 U.S.C. 1341 Section 401) and to state or local regulations designed to protect waterway channels and their associated natural resources (e.g., stream bank alteration permits).

7.2.4 Other Natural Resource Concerns

Other natural resources laws and regulations address wilderness, prime or unique farmlands, wild and scenic rivers, and national byways. However, LM rarely conducts mission-related activities that affect these resources. Therefore, this manual does not discuss them. Impacts on these categories of natural resources are identified during the NEPA planning phase of proposed actions and managed in accordance with the EMS and applicable regulatory requirements.

7.2.5 Noxious Weeds and Integrated Pest Management

The LMS contractor implements an integrated pest management program in compliance with the Federal Noxious Weed Act of 1974 and with individual state requirements for the management of noxious or invasive weeds on LM properties. Generally, annual inspections are used to identify if weed management is necessary. If noxious or invasive weeds have an unacceptable presence due to their degree of invasiveness, or the type, a variety of control mechanisms are evaluated. These can include chemical applications, green chemical replacements, the use of insects, or the use of competition. Experience with the site, adjacent land uses, natural factors (e.g., location, aspect, terrain), cost, and the availability of alternative approaches that do not involve chemicals are considered before the most appropriate method of controlling noxious and invasive species is determined.

7.3 Responsibilities

Following is an outline of responsibilities associated with LM's Natural Resources Management Program:

- Task managers and project planning staff are responsible for contacting the EC POC at the conceptual design phase of project planning (whether planning a new action or changing the scope, location, or implementation strategy of an existing action) to identify environmental compliance issues related to natural resources.
- Site leads/line managers are responsible for including the EC POC during work-readiness reviews, constructability reviews, and reviews of pertinent correspondence to ensure that all natural resources management requirements are identified and properly scoped and budgeted.
- In consultation with site leads/line managers and pertinent regulatory agencies, the EC POC is responsible for evaluating proposed work activities through the use of a Project Activity Evaluation and a NEPA checklist, as applicable, to determine the natural resource compliance actions necessary to perform work.
- The EC POC is responsible for communicating with resource specialists for implementing wetland evaluations and delineations, assisting with plans and reports (including Biological Assessments), developing restoration plans, implementing noxious weed control, and developing and implementing vegetation monitoring plans in accordance with regulatory requirements, interagency agreements, and local watershed management plans when natural resources are adversely impacted.

7.4 Procedure

Determining the requirements for managing natural resources that may be affected by LM activities generally proceeds as follows:

- The site lead/line manager contacts the EC POC when an action is first proposed, a change occurs in the scope of work of an existing action, a change occurs in the implementation strategy of an existing action, or a change occurs in a task order that affects the operation or location of an action.

- The EC POC evaluates the proposed activities to determine applicable natural resources laws and regulations, and documents applicability through the implementation of a Project Activity Evaluation form.
- The EC POC communicates with resource specialists to establish a team effort to address natural resource conservation issues.
- In coordination with the site lead/line manager, the EC POC and the resource specialists contact pertinent federal, state, tribal, or local agencies to determine site-specific requirements for managing natural resources, such as investigations, surveys, permits, or requirements identified in existing watershed management plans that relate to proposed activities.
- The EC POC, in coordination with resource specialists, applies for appropriate permits and develops plans and procedures necessary to mitigate impacts of LMS contractor activities in areas of concern.

7.5 Training

EC and resource specialists must be knowledgeable of natural resource management laws and regulations at a federal level. The EC POC and resource specialists must be proficient in the implementation of ESA regulations and guidance. EC personnel or resource specialists must be proficient in the development of Biological Assessments.

EC and resource specialists who participate in floodplain determinations must be knowledgeable of the procedures for floodplain review and assessment codified at 10 CFR 1022.11 and 10 CFR 1022.12.

Resource specialists who make wetland determinations must be able to accurately assess hydric soil conditions and identify wetland plant species and hydrology indicators. In addition, they must be familiar with the delineation criteria presented in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the Regional Supplements, as applicable. EC and Ecology personnel must be knowledgeable of the CWA Section 404 and Section 401 regulations.

7.6 Records

In addition to federal records retention requirements for natural resources data, all records associated with the Natural Resources Management Program, including correspondence, will be maintained in the project files under the pertinent site name. These records will be managed in accordance with procedures in the *Records Management Manual*.

8.0 Cultural Resource Management Program

8.1 Purpose

LM owns and manages numerous sites, structures, and facilities and is responsible for maintaining them at levels suitable for their long-term use. One component of LM's management responsibilities is to preserve and protect cultural and historical resources (DOE Order 436.1). This chapter outlines strategies that the LMS contractor will employ to comply with cultural resource laws, regulations, policy, and guidance when performing work for LM.

The goals of LM's Cultural Resource Management Program are to (1) ensure compliance with cultural resource laws and regulations, (2) adopt a consistent approach to managing cultural resources, (3) enhance awareness of and appreciation for cultural resource protection, and (4) promote outreach with traditional or native people who may have a stake in DOE's management of cultural resources. Adherence to the management strategies presented in this chapter will help ensure compliance with the laws and regulations pertaining to cultural resource management.

8.2 Scope

The requirements outlined in this section are applicable to all LM programs and projects in which surface or subsurface disturbance (e.g., regrading, well drilling, excavating, revegetating, road building) or remodeling or dismantling of structures is planned. These types of activities may adversely affect a cultural resource.

The following laws, regulations, and DOE orders are pertinent to LM's Cultural Resource Management Program.

National Historic Preservation Act (16 U.S.C. 470): This act, passed by Congress in 1966 and amended in 1980, establishes the most comprehensive national policy concerning the protection of historic and archaeological resources. Sections 106 and 110 of the act form the basis for the implementing regulations that mandate federal historic preservation activities, including DOE's management of cultural resources. The act establishes the following entities to ensure compliance with its provisions:

- The National Register of Historic Places (National Register) is a list of cultural resources of national, regional, state, or local significance that is maintained by the U.S. Department of the Interior National Park Service.
- The Advisory Council on Historic Preservation is an independent federal agency responsible for administering the protective provisions of the National Historic Preservation Act.

Section 106 of the act compels federal agencies to take into account the effect of their projects on historic and archaeological resources, even if projects are not located on their lands. This means that DOE must consider projects on non-DOE-owned as well as on DOE-owned property. Thus, before approving the expenditure of federal funds on an undertaking, DOE must consider the effect of the undertaking on any district, site, building, structure, or object that is included in, or eligible for, inclusion in the National Register. Section 106 also mandates that federal agencies implement the "Section 106 consultation process," which normally takes the form of discussions

between the federal agency, affected Native American tribes, other agencies and organizations, the state historic preservation officer (SHPO), and, on tribal lands, the tribal historic preservation officer (THPO).

Section 110 of the act requires federal agencies to assume responsibility for the preservation of historic properties by locating, inventorying, and nominating to the National Register all historic properties under their ownership or control. This requirement must include inventorying surface and subsurface cultural resource sites.

Archaeological Resources Protection Act (16 U.S.C. 470aa): This act requires federal agencies to provide protection for archaeological resources located on public and Native American lands. It includes provisions for felony-level penalties for those convicted of serious violations associated with unauthorized excavation or removal of archaeological resources. Section 9 of the act states that federal agencies must maintain the confidentiality of archaeological resource information. It specifically exempts this information from Freedom of Information Act requests. Section 14 of the act requires each federal agency to develop plans for archaeological resource surveys of lands under the control of the agency. The implementing regulations of the act are codified primarily at 43 CFR 7.

Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 et seq.): This act requires federal agencies to consult with Native American tribes when planned archaeological excavations may encounter cultural items or when cultural items are discovered inadvertently on federal lands. Inadvertent discoveries of Native American remains and cultural objects require the discoverers to follow specific procedures to protect the items and to notify the agency head or appropriate Native American tribe. The implementing regulations of the act are codified primarily at 43 CFR 10.

American Indian Religious Freedom Act (42 U.S.C. 1996): This act clarifies federal policy pertaining to the protection of Native American religious freedom. It encourages federal protection of sites considered sacred to Native Americans.

Archaeological Recovery Act (see Archaeological and Historic Preservation Act): This act requires federal agencies to preserve archaeological data affected as a result of land-modification activities.

Archaeological and Historic Preservation Act (16 U.S.C. 469): This act amended and expanded the scope of the Archaeological Recovery Act by requiring preservation of archaeological data affected by federal or federally related land-modification activities.

Executive Order 11593, *Protection and Enhancement of the Cultural Environment*: This order requires federal agencies to initiate measures to preserve, restore, and maintain historically, archaeologically, or architecturally significant sites, structures, and objects.

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*: This order reaffirms the U.S. government's responsibility for continued collaboration and consultation with tribal governments in the development of federal policies that have tribal implications, to strengthen the relationships between federal and tribal governments, and to reduce the imposition of unfunded mandates upon Indian tribes.

Executive Order 13007, *Indian Sacred Sites*: This order is designed to protect and preserve Indian religious practices by requiring federal agencies to accommodate access to and ceremonial use of Indian sacred sites and avoid affecting the physical integrity of such sites.

Executive Order 13287, *Preserve America*: This order outlines the policy by which federal agencies shall preserve America's heritage by actively advancing the protection, enhancement, and contemporary use of historic properties owned by the federal government, and by promoting intergovernmental cooperation to preserve and use historic properties.

DOE Policy 141.1, *Department of Energy Management of Cultural Resources*: This DOE policy outlines the responsibilities of DOE managers for protecting cultural resources and integrating cultural resource management into their missions and activities.

DOE Order 144.1, *American Indian Tribal Government Interactions and Policy*: This DOE order establishes responsibilities of DOE managers concerning communications with Native American tribes and transmits DOE's American Indian and Alaska Native Tribal Government Policy.

8.3 Responsibilities

The LMS contractor cultural resource coordinator (coordinator) works with the EC POC to address potential cultural resources at LM sites. LMS contractor site leads/line managers will ensure that funding is available to implement the cultural resources compliance actions outlined in this chapter.

The EC POC will:

- Ensure that the provisions of cultural resource laws, regulations, and policy are implemented during work performed for LM.
- Assist DOE in implementing the provisions of cultural resource laws, regulations, and policy during the conduct of DOE operations.

Site leads/line managers will:

- Plan and budget appropriate levels of effort and funding for the management of cultural resources. These efforts should integrate cultural resource concerns into project planning to protect cultural resources and to avoid unnecessary delays, conflicts, and costs in project implementation.
- Include sufficient lead time in project planning to meet regulatory requirements for field surveys and excavations for cultural resources. The time necessary to complete field activities and prepare compliance documents should be factored into the scheduling of projects that involve ground-disturbing activities or modifications to standing structures.

The coordinator will:

- Assist DOE in communications with SHPOs and THPOs.
- Subcontract qualified archaeologists, ethnographers, historians, architectural historians, or cultural anthropologists with regional expertise when needed to conduct cultural studies or inventories, and ensure that subcontracted professionals meet the qualification standards in

“Archaeology and Historic Preservation: Secretary of the Interior’s Standards and Guidelines” (DOI 1983).

8.4 Procedure

DOE and the LMS contractor are required by Section 106 of the National Historic Preservation Act to take cultural resources into consideration during project planning. This process, known as the Section 106 consultation process, is applicable to all LM actions that may affect cultural resources that are listed or eligible for listing on the National Register (known as “historic properties”). The steps DOE and LMS contractor personnel would take to comply with this process are described in the following sections.

8.4.1 Determine Whether the Undertaking Has Potential to Affect Historic Properties (36 CFR 800.3[a])

The site lead/line manager will contact the EC POC, who will work with the coordinator during the planning phase of a project. The EC POC and the coordinator will determine whether an undertaking, as defined in the National Historic Preservation Act, is planned. If the planned project is determined to (1) be an undertaking that does not have a type of activity which has potential to affect historic properties, or (2) not be an undertaking, DOE is finished with its Section 106 obligations. If the planned project is determined to be an undertaking that has potential to affect historic properties, DOE will begin the Section 106 consultation process.

8.4.2 Initiate Section 106 Consultation Process

- [1] **Identify the SHPO/THPO (36 CFR 800.3[c], [d]):** DOE, with assistance from the coordinator, will identify the appropriate SHPO that must be consulted during the Section 106 process. If the undertaking is on or affects tribal lands, DOE will determine which tribe or tribes are involved and if a THPO needs to be included in the consultation.
- [2] **Plan to Involve the Public (36 CFR 800.3 [e]):** DOE will decide how and when to involve the public in the consultation process. DOE Order 144.1, *American Indian Tribal Government Interactions and Policy*, requires DOE to inform the programmatic Headquarters POC when meeting with tribal representatives.
- [3] **Identify Other Consulting Parties (36 CFR 800.3 [f]):** DOE, with assistance from the coordinator, will identify organizations and individuals that may have a right to be consulting parties. These may include local governments, Indian tribes, other federal agencies, or private entities.
- [4] **Identify Historic Properties (36 CFR 800.4 [a], [b], [d]):** Before an inventory of cultural resources is conducted, the EC POC and the coordinator will first determine and document the area that may be affected by LM action. The coordinator will determine if a cultural resource inventory has been conducted in the area of potential effect. The coordinator may subcontract a professional archaeologist to conduct a Class I or III cultural resource inventory (Class I inventory is a literature review; Class III inventory is a field inventory).

The federal agency administering the land will be responsible for notifying the SHPO and consulting parties of cultural resource survey results even if no cultural resources are located. DOE would notify the SHPO/THPO and potential consulting parties (e.g., Indian

tribes) of survey results on DOE-owned and privately owned lands. One known exception would be the Uranium Leasing Program lease tracts; on these lands, the Bureau of Land Management manages the surface and would be responsible for notifying the SHPO/THPO and potential consulting parties.

If no cultural resources are discovered within the area potentially affected by the undertaking, if the SHPO/THPO concurs with the survey results, and if consulting parties (e.g., Indian tribes) have not requested any formal consultation, DOE's obligations under Section 106 are considered fulfilled.

- [5] **Evaluate Historical Significance (36 CFR 800.4 [c]; 36 CFR 60):** If cultural resources are discovered within the area of potential effect, a professional archaeologist would evaluate the historical significance of the resource to determine if it is eligible for inclusion in the National Register (i.e., if it is considered a "historic property"). Upon the recommendation of the professional archaeologist, DOE, in consultation with the SHPO/THPO, would make the final determination of eligibility. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that meet any of the following criteria:

- [a] Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [b] Property is associated with the lives of persons significant to our past.
- [c] Property embodies distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- [d] Property yields, or may likely yield, information important in prehistory or history.

If no historic properties are discovered within the area of potential effect or that potentially could be affected by the undertaking, DOE's obligations under Section 106 would be fulfilled after the SHPO/THPO concurs with the eligibility determinations and after the potential consulting parties (e.g., Indian tribes) have not requested formal consultation concerning the proposed activities.

If historic properties are discovered within the area of potential effect or that potentially could be affected by the undertaking, DOE will proceed to the assessment of adverse effects.

8.4.3 Assess Effects (36 CFR 800.5)

The coordinator will assess potential effects on historic properties and determine if an adverse effect would occur. One of three determinations will be made:

- **No effect:** The undertaking will not affect historic properties.
- **No adverse effect:** The undertaking will affect one or more historic properties, but the effect will not be harmful.
- **Adverse effect:** The undertaking will harm one or more historic properties.

If no historic properties would be adversely affected, DOE would document this in a letter to the SHPO/THPO and potential consulting parties. DOE's obligations under Section 106 would be fulfilled once the SHPO/THPO concurs in the determination regarding effects and after the potential consulting parties (e.g., Indian tribes) have not requested formal consultation concerning the proposed activities.

A finding of adverse effect would require further consultation on methods to resolve the adverse effect.

8.4.4 Coordination with NEPA

DOE will coordinate its cultural reviews and consultations with ongoing NEPA (42 U.S.C. 4321) reviews whenever possible. Regulations in 36 CFR 800.8 allow DOE to use the processes and documentation required for the preparation of an EA or EIS in lieu of the procedures established under Section 106 of the National Historic Preservation Act. If DOE uses the NEPA process to comply with provisions of the National Historic Preservation Act, DOE must comply with the NEPA standards during preparation of the draft EA or EIS (see Chapter 2.0).

8.4.5 Unanticipated Discoveries of Cultural Resources

It is possible that an in-progress project or undertaking, for which cultural resource compliance procedures have been completed, could affect a previously unidentified cultural resource that may be eligible for inclusion in the National Register or could affect a known cultural resource in an unanticipated manner. In these cases, on-site personnel will immediately cease activity in the area of discovery. The site lead/line manager will protect the items discovered and give notice of the discovery to the EC POC, the coordinator, and DOE. No further surface-disturbing activity will take place until DOE makes a decision concerning the disposition of the items.

8.5 Training

The coordinator will be familiar with cultural resource legislation, regulations, and policy. It is recommended that pertinent LMS contractor personnel responsible for cultural resource management participate in DOE's Cultural Resources Forum, a website designed to provide a central access point to the DOE community for information on cultural resources. The website provides a forum for:

- Keeping current on cultural resource issues, facilitating communication, and exchanging information on cultural resources.
- Sharing information, issues, and lessons learned regarding the management of cultural resources at DOE facilities.

8.6 Records

Records associated with the management of cultural resources will be maintained in project files under the pertinent site name. These records will be managed in accordance with procedures in the *Records Management Manual*.

Information concerning the nature and location of archaeological resources is protected from public disclosure by Section 9 of the Archaeological Resources Protection Act, (codified at

43 CFR Part 7.18) and by Section 304 of the National Historic Preservation Act. Archaeological records will not be eligible for public review through Freedom of Information Act requests.

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9.0 Waste Management Program

9.1 Purpose

The purpose of this chapter is to describe the types of waste that may be generated by LM operations and how the LMS contractor performs and directs subcontractor work for LM in order to comply with federal, state, and tribal waste management regulations. Additionally, this chapter provides the foundation for the EMS WM/P2 Program through compliance with the federal Pollution Prevention Act of 1990 (PPA) (42 U.S.C.13101). (For more information on the WM/P2 Program, see the EMS Programs Manual.) The LMS contractor promotes source reduction, source replacement with less toxic materials, administrative controls to minimize the generation of regulated waste, and waste segregation to reduce the amount of regulated (and dually regulated) waste generated by LM activities.

9.2 Scope

The requirements of this section apply to LM activities (including subcontracted work) that may generate waste. The primary approach to managing pollution is the four tiers identified in the PPA. First and most important, pollution should be reduced at its source. Second, pollution that cannot be prevented should be recycled or reused. Third, pollution that cannot be prevented or recycled should be treated. Fourth, pollution that cannot be prevented, recycled, or treated should be managed and disposed of in an environmentally safe and compliant manner. The EMS WM/P2 Program implements the first two tiers of the PPA. This Waste Management Program provides support to the WM/P2 Program and implements tiers three and four of the PPA.

LMS contractor and subcontractor work for LM can result in the generation of different types of wastes that require management in accordance with a unique set of requirements and regulations. These waste types include:

- Hazardous waste regulated by RCRA (42 U.S.C. 6901).
- Toxic substances (specifically asbestos and polychlorinated biphenyls [PCBs]) regulated by the Toxic Substances Control Act (TSCA) (15 U.S.C. 2601).
- Waste generated at sites under CERCLA authority (42 U.S.C. 9601).
- Residual radioactive materials regulated by UMTRCA (42 U.S.C. 7901).
- Low-level radioactive waste regulated by the Atomic Energy Act (AEA) (42 U.S.C. 2011).
- Mixed waste (a combination of hazardous or toxic waste and low-level radioactive waste) that is dually regulated under RCRA or TSCA and AEA.
- Universal wastes regulated under RCRA and implemented at 40 CFR 273.
- Used oil regulated under RCRA and implemented at 40 CFR 279.
- Lead acid batteries regulated under RCRA and implemented at 40 CFR 266.

Emergency procedures for spills and environmental releases, both LM-wide and site-specific, are applicable and enforced by referencing the LM *Comprehensive Emergency Management System* (LMS/POL/S04326), which addresses spill response and environmental release notifications, reporting requirements, and cleanup actions applicable to hazardous and radioactive materials

and wastes (HRM). A spill prevention and cleanup procedure for field use resides in the Environmental Instructions Manual, and details cleanup and reporting of small spills (generally less than 10 gallons).

Following is a discussion of many of the laws and DOE requirements that are pertinent to the LM Waste Management Program. State-specific and tribal regulations are not provided below. However, they may be applicable and would take precedence when work is conducted in authorized states and on tribal lands.

AEA: The purpose of this law is to ensure the proper management of three types of radioactive material: low-level radioactivity, high-level radioactivity, and transuranic radioactivity. The AEA also establishes the regulatory framework for UMTRCA and identifies specific regulations and exemptions for wastes generated from the processing of uranium mill tailings, which include source, special nuclear, and byproduct material (as defined in 42 U.S.C. 2011, Section 11).

DOE Order 435.1, Radioactive Waste Management: The objective of this order is to ensure that all DOE radioactive waste (low-level, high-level, and transuranic waste) is managed in a manner that is protective of worker and public health and safety and the environment, and is in compliance with applicable federal, state, and tribal regulations and requirements.

DOE O 458.1, Radiation Protection of the Public and the Environment, which replaced **DOE Order 5400.5:** This order established standards and requirements for the operations of DOE and its contractors to protect members of the public and the environment against undue risk from radiation.

CERCLA: This act authorizes EPA to clean up releases of hazardous substances from abandoned hazardous waste sites, including federal facilities. EPA has the authority to require potentially responsible parties, including federal agencies, to pay for necessary cleanup actions. CERCLA also maintains the Superfund to pay for site cleanups when no responsible parties are identified. CERCLA requires industries to disclose to their workers and communities the hazardous substances they use and store.

CERCLA wastes often consist of environmental media, such as soil and groundwater that have been contaminated by the release of hazardous substances. Such wastes are sometimes cleaned up and managed in accordance with a formalized agreement (ROD) that identifies the nature of contamination, cleanup remedy, party liable for cleanup actions, and regulatory agencies responsible for oversight and enforcement (e.g., EPA, corresponding state agencies). The ROD identifies cleanup standards and waste disposition requirements, such as on- or off-site treatment and disposal. CERCLA wastes resulting from remedial actions at DOE National Priority List sites must be managed in compliance with the requirements specified in the applicable ROD.

Federal Facilities Compliance Act of 1992: This act amended RCRA to (1) waive sovereign immunity with respect to imposing administrative and civil fines and penalties against federal facilities (42 U.S.C. 6961) by other federal agencies and state authorities, and (2) impose additional regulatory requirements for waste management and cleanup activities through agency-specific directives, orders, or agreements.

PPA: The PPA establishes pollution prevention as a national objective. The act “defined pollution prevention to mean source reduction and other practices that reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources or protection of natural resources by conservation” (42 U.S.C. 13102). The PPA requires EPA to consider the effect of existing regulatory programs and evaluate barriers to reducing pollution sources. It also amended the reporting requirements of the Emergency Planning and Community Right-to-Know Act (42 U.S.C. 11001) through the Toxic Chemical Release Inventory reporting requirements. Toxic Chemical Release Inventory reports require generators to provide information on toxic chemicals released to the environment and provide information on pollution prevention and recycling for each toxic chemical and for each facility (42 U.S.C. 13106).

RCRA: This act regulates the ongoing generation, treatment, storage, transportation, and disposal of solid waste, which includes hazardous waste. One purpose of RCRA is to prevent the creation of new abandoned hazardous waste sites (e.g., Superfund sites). RCRA also promotes waste minimization and resource recovery by encouraging the reduction of hazardous waste at the source (i.e., avoid creating it) and the recycling and reuse of waste in an environmentally beneficial manner.

The implementing regulations for RCRA are codified at 40 CFR 260–280. These regulations authorize states to implement RCRA programs, promulgate state-specific hazardous waste regulations, and enforce the RCRA “cradle to grave” regulatory requirements. Specific citations that may be applicable to LM work include those implemented at 40 CFR 266 Subpart G, pertaining to the reclamation of spent lead acid batteries; 40 CFR 273; and 40 CFR 268, which resulted from the HSWA.

The 1984 HSWA also promulgated management standards for used oil collection and recycling (see 40 CFR 279). Although EPA did not list used oil as a hazardous waste, the hazardous waste characteristics do apply. In addition, HSWA promulgated regulations for the management of underground storage tanks (USTs) used to store regulated substances. Subpart I of 40 CFR 280 regulates the UST Program, which is administered either by EPA-authorized states or by EPA in nonauthorized states.

TSCA: This act gives EPA the authority to track the industrial chemicals produced in or imported into the United States, including new chemicals that industry develops each year with unknown or dangerous characteristics. EPA can ban the manufacture and importing of chemicals that pose an unreasonable risk to human health and the environment.

TSCA expanded EPA’s authority to regulate certain toxic substances from manufacturing through testing, production, and disposition. It also specifies recordkeeping and reporting requirements for toxic substances such as asbestos and PCBs. The TSCA regulations for asbestos and PCBs are codified in 40 CFR 761 and 40 CFR 763. Because asbestos may become airborne, it is also regulated under National Emission Standards for Hazardous Air Pollutants regulations, codified at 40 CFR 61.

UMTRCA: This act establishes a program for assessment and remedial action at active and inactive uranium processing sites in order to minimize radiation health hazards to the public. EPA developed cleanup standards for these remedial actions, both for soil and groundwater. The

act also provides for the stabilization and control of uranium mill tailings in a safe and environmentally sound manner. Numerous LM sites are disposal cells that contain residual radioactive materials regulated under UMTRCA. Regulations for managing UMTRCA-related radioactive wastes and process-related wastes are codified at 40 CFR 192.

9.3 Responsibilities

Following is an outline of responsibilities associated with LM's Waste Management Program:

- Site leads/line managers are responsible for including the EC POC in project planning, work readiness reviews, and constructability reviews so that potential waste-generating activities can be identified and discussed.
- Site leads/line managers are responsible for ensuring that hazardous, toxic, and radioactive wastes generated by LM site activities are properly identified, documented, segregated, stored, inspected, reused, recycled, or treated (if possible), transported, and disposed of in accordance with applicable health and safety and waste management regulations.
- Site leads/line managers are responsible for ensuring that, whenever possible, hazardous, toxic, or radioactive pollution expected to be generated by LM site activities is reduced to the extent feasible or eliminated.
- The EC POC is responsible for assisting the site lead/line manager with WM/P2 opportunity assessments.
- The EC POC is responsible for working in coordination with site leads/line managers to implement applicable waste management regulations, including state-specific regulations, with respect to the types of hazardous, toxic, or radioactive waste generated by LM site activities.
- The EC POC is responsible for developing site-specific waste management plans as necessary.
- The EC POC is responsible for compiling waste management information pertaining to the types and quantities of waste generated at LM sites for the purpose of preparing and submitting waste management reports required by applicable regulations and LM requirements.
- EC personnel are responsible for complying with applicable H&S requirements and for involving the H&S group as necessary during activities that generate regulated wastes to ensure worker and environmental protection during waste generation, on-site storage, and off-site disposal.
- H&S is responsible for providing worker protection requirements and radiological monitoring, controls, and inspections for radioactive waste management areas.

9.4 Procedure

The general procedures for managing hazardous, toxic, or radioactive wastes are as follows:

- Site leads/line managers notify the EC POC of upcoming LM projects that are likely to generate or require management of hazardous, toxic, or radioactive waste.
- Site leads/line managers work in coordination with the EC POC to identify any opportunities for reducing or eliminating hazardous, toxic, or radioactive waste that is, or will be, generated by work performed for LM.
- The EC POC, in coordination with H&S, establishes the controls and prepares the documentation necessary to ensure compliance with applicable H&S and waste management regulations as they apply to the generation, identification, documentation, segregation, storage, inspection, reuse, recycling, treatment, transportation, and disposal of hazardous, toxic, or radioactive waste.
- Site leads/line managers immediately notify the EC POC and H&S of any discovery of hazardous waste or suspected hazardous, toxic, or radioactive waste before moving or managing the waste.
- The EC POC and H&S assist site leads/line managers with the identification of regulated hazardous, toxic, or radioactive wastes and with the design and implementation of remedial actions associated with these wastes.
- The EC POC will prepare and submit appropriate waste management reports for hazardous, toxic, or radioactive waste.

9.5 Training

Formal training is required by DOE orders, RCRA regulations, and CERCLA for workers at hazardous waste treatment, storage, and disposal facilities. In addition, EC staff must be familiar with pertinent federal and state-specific waste management regulations and related DOE orders to make appropriate hazardous waste determinations.

9.6 Records

Records associated with waste management activities are maintained in records files for the sites, projects, and programs to which pertinent waste management activities apply. Such records are managed in accordance with the requirements of the *Records Management Manual*. In addition, waste management records are developed and maintained in accordance with the relevant regulatory requirements, such as those imposed by RCRA and TSCA. Regulations stipulate requirements for various facets of waste management recordkeeping, such as the type of records that are required and their retention times.

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10.0 Transportation Program for Hazardous and Radioactive Materials and Wastes

10.1 Purpose

This chapter defines the elements and requirements of the transportation program for shipping HRM from properties that are part of projects or programs administered by LM, its contractors, and its subcontractors, as applicable.

10.2 Scope

The LMS contractor and its subcontractors must comply with international, federal, and state regulations and DOE requirements when transporting, or offering for transport in commerce, HRM. The LMS contractor must package, label, mark, and transport HRM in accordance with applicable transportation regulations. This chapter defines LMS contractor management responsibilities and outlines responsibilities and requirements for hazardous materials (Hazmat) training Levels 1 through 3.

The primary regulating agency for the transportation of HRM within the continental United States is DOT. The following regulations and DOE orders pertain to the transportation of HRM.

Transportation (49 CFR 100–185): These regulations govern the proper identification, documentation, packaging, marking, labeling, placarding, emergency response, and training required for the transportation of HRM by highway, rail, vessel, and aircraft. These regulations govern the transportation of HRM within the United States.

IATA regulations: These regulations address the same facets of HRM transportation requirements as 49 CFR 100–185 (identification, documentation, packaging, etc.) but focus strictly on the transportation of dangerous goods by air, both within and outside the United States. For the purposes of LM, pertinent IATA regulations are those that primarily address the transportation of environmental samples.

Federal Motor Carrier regulations (49 CFR 40, 380, 382, 383, 390): These regulations address requirements pertinent to transporters of HRM, vehicle condition and registration, and provisions for bulk transport containment.

DOE Order 435.1, *Radioactive Waste Management*: The objective of this order is to ensure that radioactive wastes are managed in accordance with federal regulations and are protective of worker and public health and the environment.

DOE Order 460.2A, *Departmental Materials Transportation and Packaging Management*: The objective of this order is to ensure compliant, safe, secure, and efficient packaging and transportation of HRM.

Occupational Radiation Protection (10 CFR 835): These guidelines delineate radiological controls and administrative requirements to protect workers and the public from exposure to radiation.

10.3 Responsibilities

Following is an outline of responsibilities associated with LM's HRM transportation program. Training requirements for Hazmat employee Levels 1 through 3 is discussed in Section 10.5.

The site lead/line manager is responsible for:

- Ensuring that all Hazmat employees are trained to awareness levels commensurate with their job functions.
- Determining the level of Hazmat training required for specific job functions.
- Periodically reviewing job functions and documenting that Hazmat training remains adequate.

Hazmat employees trained for general awareness (Level 1) are responsible for:

- Keeping their Hazmat training up to date.
- Performing their jobs pertinent to the transportation of HRM within the scope of their Hazmat training. (Example: a person who has been trained to Hazmat Level 1 does not have adequate training to complete shipping papers for HRM.)
- Coordinating activities with the Hazmat shipper to ensure that the shipper is available to complete HRM shipping documentation and ensure proper identification, packaging, labeling, and off-site transportation.

Hazmat drivers (Level 2) are responsible for:

- Level 1 responsibilities.
- Transporting HRM in commerce from LM sites to off-site locations or from off-site locations to LM sites in compliance with the requirements for proper loading, placarding and markings, and availability of shipping and emergency response documentation.
- Inspecting transport vehicles to ensure that they are operating properly; that their tires, mirrors, wipers, signals, and lights are functional and adequate; and that their insurance, license, and maintenance checks are up to date.

Hazmat shippers (Level 3) are responsible for:

- Level 1 responsibilities.
- Ensuring that the packaging, marking, and labeling of HRM is in compliance with DOT or IATA regulations, as appropriate.
- Ensuring that all shipments of HRM are shipped in accordance with approved procedures and DOT or IATA regulations. For placarded shipments, the vehicle is considered a "commercial motor vehicle." A driver needs a commercial driver's license with proper classification to drive a commercial motor vehicle. A driver of a placarded shipment must also have a Hazmat endorsement on his or her commercial driver's license.
- Completing and signing shipping documentation confirming that the shipment is in compliance with applicable transportation regulations.

- Determining and offering the proper placard with respect to highway or rail shipments.
- Providing vehicle inspections.

The transportation coordinator is responsible for:

- Maintaining a current list of Hazmat shippers.
- Assisting with regulatory interpretations regarding DOT and IATA regulations.
- Assisting management in determining appropriate Hazmat training for employees.
- Assisting in the development and review of project-specific transportation procedures.

The training coordinator is responsible for:

- Reviewing off-site Hazmat training programs to ensure equivalency with applicable regulations and on-site training requirements.
- Providing Hazmat training in accordance with administrative policy and in compliance with regulatory requirements.
- Maintaining accessible and updated Hazmat training records for Hazmat employees.

EC staff is responsible for:

- Managing hazardous and radioactive waste on site in compliance with applicable regulations until off-site disposal is arranged (see EC staff responsibilities for managing waste in Chapter 9.0, “Waste Management Program”).
- Working with the procurement group to contract an audited and approved waste management firm to conduct shipments of hazardous and radioactive wastes in full compliance with applicable regulations for packaging, transporting, and disposing of HRM wastes.
- Providing oversight for HRM waste shipments to ensure that operations are conducted in accordance with LM and contractor policies and procedures.
- Maintaining documentation associated with the shipment of hazardous and radioactive wastes in an accessible file for a minimum of 3 years.
- Notifying the EPA regional administrator (where the generator is located) if the original signed manifests are not returned to the originator within 35 or 60 days (as applicable to generator status).

10.4 Procedure

- All employees responsible for shipping a material or requesting that a material be shipped in commerce must recognize the potential for the material to be regulated as HRM under 49 CFR Subchapter C, “Hazardous Material Regulations,” and must contact EC to determine transportation requirements.
- A Hazmat shipper will obtain all information necessary to have the HRM transported off site.
- If the HRM is determined to be waste and is to be shipped from an LM site, the material must be transferred to the EC group in accordance with established waste management

protocols and in accordance with 40 CFR 261 and 262. Waste must be properly characterized (sampled and analyzed), classified, stored in compatible containers, and properly labeled prior to transfer to EC for management and off-site disposal.

- EC personnel will manage the wastes according to the site's generator status, and in a satellite accumulation or temporary storage area, as applicable.
- A Hazmat shipper will prepare the shipping documentation and will package, mark, and label the HRM shipment according to DOT requirements at 49 CFR 172 and 173.
- The Hazmat shipper will (1) inspect HRM packages and (2) review and sign shipping documentation to verify compliance with applicable regulations.
- The project manager will sign as the waste generator on behalf of DOE.
- The shipper will have the transporter sign to receive the shipment, and the shipper will retain a copy of all documentation in the waste shipment files. The shipper will be the recipient of return manifests and certificates of disposal. These documents must be filed with associated shipping documentation and retained for a minimum of 3 years at the site, after which the documentation is placed in its associated project files.
- Before the HRM is transported, the Hazmat shipper must transfer the original and as many copies of the shipping papers as necessary, as well as a copy of the applicable pages from the *Emergency Response Guidebook* (ERG 2008), to the transporter.
- Before the HRM shipment leaves any LM site, the shipper must ensure that a copy of the shipping papers and the applicable emergency response guide is delivered to security personnel at the Center Gate at the LM site in Grand Junction, Colorado. This is to ensure that the security officer can initiate appropriate emergency response actions in the event of an emergency associated with the shipment.
- Radioactive waste is managed and inspected under H&S controls (10 CFR 835). Radioactive waste is shipped by a Hazmat shipper in accordance with 49 CFR 173, Subpart I, "Class 7 (Radioactive) Materials."
- IATA has specific regulatory requirements for shipping dangerous goods by air. Any dangerous good transported on a passenger/cargo airline must be packaged and shipped by an IATA-trained shipper in compliance with the *Dangerous Goods Regulations* (IATA 2005). In addition, all documentation for air shipments of dangerous goods must be reviewed and signed by an IATA-trained shipper.

10.5 Training

Hazmat Level 1, General Awareness: General awareness training is required for personnel who identify HRM for off-site shipment and who may affect the safe transport of HRM in commerce. The minimum training requirement is successful completion of HM100, "DOT Hazardous Materials Transportation General Awareness," or approved equivalent training. This training must be renewed every 3 years.

Hazmat Level 2, Driver: Driver training is required for personnel who transport HRM in commerce by motor vehicle from an LM site to off-site locations or from off-site locations to an LM site. Minimum training requirements are successful completion of HM100 and HM115,

“Hazardous Materials Driver,” or approved equivalent training. This training must be renewed every 3 years.

Hazmat Level 3, Shipper: Shipper training is required for personnel responsible for completing HRM shipping and manifest documentation and for providing certification by signature that an HRM shipment is packaged, labeled, marked, placarded, and documented in compliance with DOT regulations. Minimum training requirements are successful completion of HM100; HM116, “Hazardous Material Transportation Security Awareness”; HM210, “DOT Basic Hazardous Materials Transportation”; and HM211, “DOT Basic Radioactive Materials Transportation.” If the shipper requires expertise for shipping waste, then HM310, “Advanced Hazardous Materials Transportation,” and HM311, “Advanced Radioactive Materials Transportation,” or approved equivalent training, are also required. If the shipper is required to manage and ship mixed waste, then HM312, “DOT Advanced Mixed Waste Transportation,” or approved equivalent training is also required. Hazmat shippers are required to retrain every 3 years.

IATA shippers must complete HM100, HM116, HM210, HM211, and HM120, *Dangerous Goods Regulations*, or equivalent. IATA training is required every 3 years.

Site leads/line managers must complete HM100 and retrain every 3 years.

Quality Assurance personnel performing transportation audits or assessments must complete HM100 and retrain every 3 years.

The transportation coordinator is required to be a Hazmat shipper and retrain every 3 years.

10.6 Records

Records associated with the shipment or with receipt of HRM are maintained in records files for the sites, projects, and programs to which pertinent shipping documents apply. Such shipping records and employee training records are managed in accordance with the requirements of the *Records Management Manual*.

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11.0 Chemical Management Program

11.1 Purpose

The purpose of this procedure is to ensure that the procurement and use of various chemicals required for on- and off-site operations and activities are in compliance with the chemical inventory and reporting requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 136).

11.2 Scope

The scope of this chapter includes chemicals that are purchased, stored, and used at LM sites, which are regulated under EPCRA, and chemicals managed and used under FIFRA (40 CFR 152–180). Under the PPA, the EMS requires an evaluation during procurement to determine if less hazardous or nontoxic replacement chemicals are appropriate for use in place of hazardous and toxic chemicals, insecticides, rodenticides, and fungicides. For more information, review the Sustainable Acquisitions Program and the WM/P2 Program in the EMS Programs Manual.

The following laws and regulations are pertinent to LM's Chemical Management Program.

EPCRA: Also known as the Superfund Amendments and Reauthorization Act (SARA) Title III, EPCRA was signed into law in October 1986. The law was established to inform the public of hazardous chemicals that may affect their communities and to assist state and local emergency planners to prepare for possible emergencies by developing plans for responding to unplanned releases of hazardous chemicals. The EPCRA regulations, promulgated at 40 CFR 355, 370, and 372, include a description of the types of industries and hazardous chemicals that are subject to regulation.

Provisions in 40 CFR 355 require that state and local emergency planning organizations be notified if a listed hazardous substance that exceeds a reportable quantity is released to the environment. Additionally, emergency officials are to be notified for planning purposes if any listed chemicals that exceed a Threshold Planning Quantity (SARA Title III, Section 312, "Tier I Report") are used or stored at the facility. Provisions in 40 CFR 370.21 require that material safety data sheets (MSDSs) be available for hazardous chemicals present at a facility. The list of chemicals must be made available to local and state emergency response officials (SARA 312, Section 312, "Tier II Report"). This list includes chemicals that are used in maintenance, operation, or remediation activities at a site. Provisions in 40 CFR 372 require certain facilities to submit an annual Toxic Release Inventory (Form R) report for chemicals routinely or accidentally released into the environment (SARA Title III, Section 313, "Report").

FIFRA: The law provides federal control of the distribution, sale, and use of pesticides. The law requires all pesticides used in the United States to be approved and registered by EPA. It also gave EPA the authority to study the consequences of pesticide use and to require users (farmers, utility companies, and others) to register when purchasing pesticides. In addition, commercial and large-scale applicators must be trained and certified for the application of pesticides. FIFRA also contains provisions for taking action against products considered to pose a risk to human

health and the environment. EPA promulgated regulations for the storage and disposal of pesticides at 40 CFR 165.

29 CFR 1910.1200: This standard requires the owner or operator of a facility to have MSDSs available at the facility. It also establishes the content requirements and exemptions for MSDSs, as well as training requirements for the chemical hazards described in each MSDS.

DOE Order 436.1, *Departmental Sustainability*: This order requires LM and the contractor to implement sound stewardship practices that are protective of air, water, land, and other natural and cultural resources impacted by DOE operations and to meet or exceed compliance with applicable environmental, public health, and resource protection laws, regulations, and DOE requirements.

11.2.1 Items/Materials Not Covered by This Section

This section does not apply to the purchase of any radioactive material, including radioactive calibration standards used for analytical purposes. All requisitions for the purchase of radioactive materials (e.g., sources and calibration standards) must be sent to the H&S manager for review and approval.

This procedure applies only to the purchase, use, and storage of chemical products; it does not apply to chemical wastes that may be hazardous or toxic.

This procedure does not address any shipping and receiving requirements applicable to DOT-regulated HRM. The requisitioner must contact the LMS contractor DOT coordinator for guidance relative to DOT requirements.

11.2.2 Exempt Chemical Procurements Not Requiring Approval

EPCRA regulations specifically exempt certain items from chemical inventory and reporting requirements. “Any substance to the extent it is used in a research laboratory or hospital or other medical facility under the direct supervision of a technically qualified individual,” and “. . . any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public” are specifically excluded from the regulatory definition of a hazardous chemical. Consequently, many items that are used on a routine basis for day-to-day operations or are used in a laboratory setting are exempt from the definition of a hazardous chemical and are not subject to the chemical inventory and reporting requirements of EPCRA. Such items include:

- Certain analytical laboratory supplies and materials, including most LM laboratory quantities of reagents, nonradioactive calibration standards, and calibration gases.
- Fuel for vehicles and equipment, including liquefied petroleum gas (propane), gasoline, and diesel fuel.
- Consumer-grade, commercially available products containing hazardous chemicals, including petroleum-based lubricants, paints, insect or weed sprays, cleaning and janitorial supplies, and office products.
- Any other hazardous chemical purchase of less than 1,000 pounds, provided that the chemical is not otherwise regulated by EPCRA.

Such items may be purchased without prior EC review and approval, using either a government-issued credit card or a purchase requisition. The purchase requisition or credit card log identifying purchases of exempted items shall be noted with the words “Exempted Chemical Purchase.”

11.2.3 Chemical Procurements Requiring Approval

All chemical purchases that do not meet the exemptions noted in Section 11.2.2 must be submitted to EC for review and approval. This includes:

- Any chemical subject to EPCRA inventory and reporting requirements.
- Any extremely hazardous substance as defined by 40 CFR 370.
- A bulk quantity purchase of any chemical. A “bulk quantity” is an internal control limit defined as any purchase of any chemical exceeding 1,000 pounds.
- All other chemical purchases subject to EPCRA regulations.

EC review and approval must be obtained in writing (normally via e-mail) for purchase requisitions of these items. These items may be procured only by an authorized contract administrator and are considered prohibited purchases for credit cards unless preapproved by the Contracts Services manager in special circumstances.

11.3 Responsibilities

Following is an outline of responsibilities associated with the LMS Chemical Management Program:

- Site leads/line managers are responsible for determining the types and quantities of chemicals that are needed to perform work at LM sites.
- The site leads/line managers are responsible for keeping accurate inventories of chemicals purchased and stored at LM sites.
- The requisitioner (whether a site lead/line manager or other project staff member) is responsible for contacting EC to determine whether EC approval is required to purchase a chemical.
- The EC POC is responsible for reviewing proposed purchases of chemicals to determine if the chemicals are regulated under EPCRA.
- EC is responsible for complying with EPCRA reporting and notification requirements regarding chemical inventories.
- The H&S manager is responsible for reviewing proposed purchases of radioactive materials.
- Contracts Services personnel are responsible for reviewing purchase requisitions for chemicals to ensure that required reviews and approvals have been performed.

11.4 Procedure

The foundation of the Chemical Management Program is controlling the purchase of hazardous chemicals in a manner that keeps the EC organization aware of proposed chemical purchases. This will support efficient compliance with EPCRA inventory and reporting requirements and provide an opportunity to evaluate the use of alternative green products. The following procedures focus on the requirements for purchasing hazardous chemicals:

- [1] Prior to initiating the purchase of any chemical product or material, the requisitioner will contact the EC organization to determine if the proposed purchase is considered an exempted chemical purchase (as described in Section 11.2.2). If applicable, the requisitioner, Contracts Services, or the EC POC can recommend a substitute, less-hazardous chemical that performs the same function. See the Sustainable Acquisitions and WM/P2 programs in the EMS Programs Manual for more information on green purchasing.
- [2] The EC POC will respond by e-mail with a notification of determination. If the product is an exempted item, the requisitioner may proceed with the purchase request without any further EC review or approval. An exempted item may be purchased using either a purchase requisition or a government-issued credit card. The purchase requisition or credit card log will include a note that says “Exempted Chemical Purchase.”
- [3] If the product does *not* meet the exemption definitions, the requisitioner must obtain EC approval on a purchase requisition prior to forwarding the requisition to Contracts Services. This approval is in addition to the notification of determination.
- [4] EC will maintain a chemical inventory by site and LM-wide to ensure that SARA reporting requirements are compliant and that reports are submitted to DOE for forwarding to EPA, the state, and applicable local emergency response organizations, as appropriate.
- [5] Either H&S or EC must ensure that an MSDS is received or identified online (via Internet or purchased MSDS program) for each hazardous chemical.
- [6] Procurement personnel must review each chemical purchase requisition to ensure that it has received the appropriate level of review and approval.
- [7] The H&S manager must review (and approve, if appropriate) all requests for the purchase of radioactive materials.

11.5 Training

EC personnel who submit SARA 312 and 313 reports and make determinations as to the applicability of EPCRA requirements to project activities should be knowledgeable of EPCRA regulations codified at 40 CFR 355 and 370.

EC personnel who make determinations as to the applicability of FIFRA requirements to project activities should be knowledgeable of FIFRA regulations codified at 40 CFR 152–180. Only trained and certified applicators will be allowed to apply restricted-use pesticides. Specific training or certification of contractor personnel in pesticides application may be required if the application of herbicides or pesticides is to be self-performed. Statements of work for project activities requiring the application of pesticides by a subcontractor must specify the use

of certified applicators and the requirement to evaluate the product for equivalent green alternatives.

11.6 Records

In addition to federal and state records retention requirements relating to EPCRA chemical inventory and reporting requirements, records associated with the Chemical Management Program will be maintained in records files under the pertinent site name. These records will be managed in accordance with procedures in the *Records Management Manual*.

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12.0 Wildland Fire Management Program

12.1 Purpose

The need for federal agencies to develop wildland fire management programs was made apparent by the devastating wildfires that occurred in the western United States in 2000. LM owns and manages land at many sites throughout the U.S. and is responsible for their long-term maintenance. This chapter outlines strategies that LM and the contractor will use to comply with laws, regulations, and DOE policy and guidance pertaining to wildland fire management. This chapter provides guidance for developing and implementing a wildland fire management plan (WFMP), an important component of a wildland fire management program. Post-fire reclamation issues that pertain to other environmental areas in this manual are also discussed.

12.2 Scope

All sites, programs, and projects that are managed through LM and contain wildlands or wildland/urban interfaces must have a wildland fire management program consistent with federal policy. The program must incorporate policies and procedures for wildland fire prevention, preparedness, suppression, fuels management, and reporting on a program-wide basis. In addition, each site managed by LM must have a site-specific WFMP, which may take any of the following forms, as appropriate:

- A section integrated into existing planning documents.
- A separate plan, if the potential for or consequences of a wildland fire are serious enough to warrant a separate plan.
- An updated fire management plan (FMP) if an FMP already exists for a site.

The following directives are pertinent to LM's Wildland Fire Management Program.

DOE Secretarial Memorandum, *Department of Energy Wildland Fire Management Policy (DOE 2003)*: This memorandum directs each DOE program secretarial officer to ensure that sites have a WFMP in place that is consistent with the *2001 Federal Wildland Fire Management Policy and Implementing Actions* (National Interagency Fire Center [NIFC] 2001).

***2001 Federal Wildland Fire Management Policy and Implementing Actions (NIFC 2001)*:** This directive, issued by the National Interagency Fire Center, a group of seven federal and state agencies that work cooperatively to form a national support center for wildland firefighting, guides wildland fire management on federal lands.

In addition to the directives noted above, DOE Guide 450.1-4, *Implementation Guide, Wildland Fire Management Program*, provides comprehensive guidance for developing wildland fire management programs and plans.

12.3 Responsibilities

Following is an outline of responsibilities associated with LM's Wildland Fire Management Program.

All contractor employees are responsible for:

- Being familiar with LM policy for wildland fire management.
- Being familiar with site-specific WFMPs or FMPs for LM sites where they perform work.

Site leads/line managers are responsible for:

- Developing, implementing, and updating the WFMPs with input from the EC POC and H&S and approval by LM. Site land-use planning and management processes must be amended, as needed, to support a full range of wildfire program options.
- Including the EC POC and H&S in all aspects of the project and site planning pertaining to wildland fire management.
- Conducting employee preparedness planning activities pertaining to wildland fire management.
- Ensuring that approved plans are in place prior to initiating prescribed burns.
- Implementing approved prescribed burn plans and reclamation plans in post-burn areas.
- Reporting fires.

EC personnel are responsible for:

- Ensuring that provisions of applicable laws (including permitting and notifications) are implemented in all aspects of wildland fire management.
- In coordination with LM management and site leads/line managers, collaborating with pertinent agencies and stakeholders to create or update WFMPs.
- Reviewing and updating cooperative wildland fire agreements annually, as applicable.
- Ensuring that H&S is involved in the development of WFMPs.

Ecology personnel are responsible for:

- Assessing reclamation needs for post-fire areas and creating associated reclamation plans.
- Creating and submitting prescribed burn plans.

H&S personnel are responsible for:

- Ensuring that applicable H&S requirements are incorporated into the WFMPs.
- Establishing a protocol to respond to emergency fire events.

12.4 Procedure

Not all procedures presented in DOE Guide 450.1-4 are applicable to every DOE site. The procedures outlined in this section will assist in the planning process for LM's Wildland Fire Management Program and site-specific WFMPs.

12.4.1 Elements of a Wildland Fire Management Program

Basic elements of a wildland fire management program are outlined below with each element's goals and objectives:

- **Wildland fire prevention:** The objective of wildland fire prevention is to cost-effectively reduce fire suppression expenditures and damages from human-caused fires to levels commensurate with resource and mission management objectives and fire management direction.
- **Wildland fire preparedness:** This element includes all activities accomplished in advance of wildfire ignition to ensure safe, efficient, and effective suppression action. Activities may include:
 - Preparedness planning and reviews.
 - WFMPs or FMPs (site-specific).
 - Site fire plans for any activity that increases wildland fire risk or constitutes a wildland fire hazard (e.g., land clearing, timber harvesting, mining, power line or highway construction).
 - Fire weather monitoring.
 - Fire detection.
 - Dispatching suppression forces.
 - Developing communication systems.
 - Rating fire danger.
 - Fire suppression training and qualification.
 - Prescribed fire support.
- **Wildland fire suppression:** The objective of this activity is to safely suppress wildland fires at minimum cost consistent with land and resource management objectives and fire management direction as stated in a site's WFMP.
- **Fuels management:** This element is implemented to reduce the flammability of existing fuels or to meet environmental goals. Fuels management activities must be integrated into all appropriate site-management activities and include an inventory of fuels and a wildland fire risk assessment where appropriate. Prescribed fires require a separate approved prescribed fire burn plan.
- **Fire reporting:** LM site offices should log a report for each wildland fire in accordance with standard fire-reporting methods in addition to any other reporting requirements, such as the Occurrence Reporting and Processing System and reporting requirements of NIFC.

12.4.2 General Procedures for Developing or Updating a Site's WFMP

The following general procedures should be considered for all LM sites in the process of developing or updating a WFMP:

- Determine if wildlands or wildland/urban interfaces (see Chapter 13.0, "Definitions") exist on the site. If not, a WFMP is not required for the site.

- Define values specific to the site. Examples of values include protecting life and public safety; properties, structures, and improvements; cultural and historic sites; neighboring private and public properties; and endangered and threatened species and species of concern. Enhancement of fire-dependent ecosystems is another value.
- For each site, develop, review, approve, and maintain a WFMP that:
 - Fully integrates the site land-management objectives.
 - Contains fire management planning, preparedness, suppression, monitoring, fuels reduction, and reclamation, as applicable to the site.
 - Uses interagency planning, as applicable, and coordinates activities with other stakeholders.
 - Prioritizes firefighter, worker, and public safety and protects property and natural and cultural resources according to their relative values.
 - Conforms to DOE’s policy of initiating suppression of all wildland fires.
 - Protects wildland/urban interfaces from damage, in accordance with National Fire Protection Association Standard 1144 (NFPA 1144).
 - Is updated on a regular basis to reflect changing site conditions and values.
- Where appropriate, include a wildland fire risk assessment in other safety documents, such as the Fire Department Baseline Needs Assessment, facility Documented Safety Analysis and Fire Hazards Analysis, or other documents that analyze hazards to specific LM structures, processes, or programs.
- Prepare an annual site fire plan for any activity that increases wildland fire risk or constitutes a wildland fire hazard, such as land clearing, timber harvesting, mining, and power line or highway construction.

12.4.3 Content and Format of a WFMP

Appendix B of DOE Guide 450.1-4 suggests a format for site-specific WFMPs. A site-specific WFMP details how risks from wildland fires will be minimized and how impacts will be mitigated. Each WFMP will be prepared collaboratively with DOE and stakeholder involvement and will integrate consideration of fire management into all land-use planning and management processes, objectives, and practices. Prescribed fires and operational fires require separate plans and must be approved prior to implementation. The WFMP format can be altered or replaced if the planning is less complex and the intent of DOE guidance is met. If further guidance or clarification is needed, refer to Appendix B of DOE Guide 450.1-4.

12.4.4 Environmental Considerations

The Wildland Fire Management Program is part of the EMS, which addresses site-wide considerations of all environmental areas. Specific environmental considerations that may be affected by wildland fire management concerns include air quality and smoke management, cultural resources, threatened and endangered species, groundwater protection, hazardous and radioactive waste, noxious weed management, migratory bird protection, and watershed protection. These resources should be considered in developing and updating fire and land use

plans. Information regarding these environmental considerations is included in other sections of this manual and in Appendix C of DOE Guide 450.1-4.

12.4.5 Wildland/Urban Interface

Areas of wildland/urban interface merit special consideration when WFMPs are being developed or updated. The site-specific WFMP should incorporate any mutual-aid agreements and collaborations between LM and emergency response organizations to further the goals of:

- Facilitating fire prevention and protection and minimizing fire loss and damage to structures and wildlands.
- Preventing structure fires from spreading into wildlands.
- Encouraging property owners to take an active role in establishing and maintaining their own fire prevention and safety measures in the wildland/urban interface.

12.4.6 Burned Area Rehabilitation

All post-burn areas (whether prescribed, operational, or wildland) must be assessed on the basis of land management goals for appropriate rehabilitation measures. All environmental considerations (see Section 12.4.4) must be taken into account in an assessment of rehabilitation plans.

12.5 Training

Personnel performing work at any sites requiring an FMP or a WFMP must receive training on the requirements and emergency response actions outlined in the plan. Personnel responsible for developing site-specific WFMPs require training in basic fire management principles. Personnel participating in wildland fire suppression must be trained in accordance with the requirements for fire suppression personnel listed in DOE Guide 450.1-4.

12.6 Records

Records associated with the Wildlands Fire Management Program and its associated activities will be maintained in records files for the sites, projects, and programs to which pertinent wildland fire management activities apply. Such records will be managed in accordance with the requirements of the *Records Management Manual*.

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13.0 Definitions

Action: A single activity, project, program, plan, or policy (as discussed at 40 CFR 1508.18) that is subject to DOE control and responsibility. This action includes work for others if DOE normally reviews and approves LMS contractor participation in work-for-others proposals before allowing the LMS contractor to start work.

Adverse effects: Results that occur when an undertaking alters, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may (1) occur later, (2) be farther removed in distance, or (3) be cumulative. Examples of adverse effects include:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, and hazardous material remediation.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance.

Air contaminant: Any particulate matter or any gas, vapor, suspended solid, or combination thereof, excluding steam and water vapors.

Air pollution: The presence of one or more air contaminants in ambient air, in quantities and duration and under conditions and circumstances that may cause injury to human health or welfare, animal or plant life, or property, or that would unreasonably interfere with the enjoyment of life or use of property as determined by federal, state, or tribal standards, rules, and regulations.

Ambient air: That portion of the atmosphere, external to buildings, to which the general public has access.

Archaeological resource: Any material remains of past human life that are at least 100 years of age, including pottery, basketry, bottles, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings, rock carvings, graves, and human skeletal materials, or any portion or piece of any of these items.

Biological assessment: The information and assessment prepared in accordance with 50 CFR 402 concerning listed species and designated critical habitat that may be adversely affected in the action area. The assessment process is typically concluded with a USFWS Biological Opinion.

Change in scope: An action that results in a significant change to activities already reviewed for NEPA compliance. These actions include a change in materials or chemicals; a change in location; a change in the purpose of the activity or the activity itself; and a change in the effects on land, air, water, or subsurface resources.

Compliance monitoring: A monitoring program designed to meet specific regulatory requirements related to restoration of groundwater resources or as required by permits.

Consultation: The process of seeking, discussing, and considering the views of others and, where feasible, seeking agreement with them on how historic properties should be identified, considered, and managed.

Cultural items: As defined in Section 2 of the Native American Graves Protection and Repatriation Act, cultural items include:

- Human remains.
- Associated funerary objects—Objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, and both the human remains and associated funerary objects are presently in the possession or control of a federal agency or museum.
- Unassociated funerary objects—Objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, where the remains are not in the possession or control of a federal agency or museum and the objects can be identified by a preponderance of evidence as related to specific individuals or families or to known human remains, or, by a preponderance of evidence, as having been removed from a specific burial site of an individual culturally affiliated with a particular Native American tribe.
- Sacred objects—Specific ceremonial objects that are needed by traditional Native American religious leaders for the practice of traditional Native American religions by their present-day adherents.
- Cultural patrimony—An object that has ongoing historical, traditional, or cultural importance to a Native American group or its culture.

Cultural resources: Historic properties, archaeological resources, and cultural items, as defined in this section. They include the following broad range of items and locations:

- Archaeological materials (i.e., artifacts) and sites that date to the prehistoric, historic, and ethnohistoric periods that are currently located on, or are buried beneath, the ground surface.
- Standing structures, and their component parts, that are more than 50 years of age or are important because they represent a major historical theme or era (e.g., the Manhattan Project, the Cold War).
- Structures that have an important technological, architectural, or local significance.
- Cultural and natural places, select natural resources, and sacred objects that have importance for Native Americans.
- American folklife traditions and arts.

Class I cultural resource inventory: A study of published and unpublished documents, records, files, registers, and other sources, resulting in the analysis and synthesis of all reasonably available data. Class I inventories encompass prehistoric, historic, and ethnological/sociological elements and are in large part chronicles of past land uses.

Class III cultural resource survey: A continuous, intensive survey of an entire target area to locate and record all visible archaeological properties by walking close-interval parallel transects until the area has been thoroughly examined. The inventory process also includes an evaluation of cultural resources for inclusion in the National Register in accordance with the criteria listed in 36 CFR 60.

Data quality objectives: Statements on the level of uncertainty that a decision maker is willing to accept in the results derived from environmental data.

Data validation: Evaluation of data against predetermined requirements in order to make an assessment of data quality as it relates to the intended use and associated decisions.

Environmental Assessment: A NEPA document that assesses the potential environmental effects of projects, decisions, or actions. It provides sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact.

Environmental Checklist: A NEPA document that summarizes the potential environmental effects of a proposed action. It provides sufficient evidence and analysis for determining whether a proposed activity can be categorically excluded from further NEPA review or if an EA or EIS must be prepared.

Environmental Impact Statement: A NEPA document that is prepared if significant impacts may occur as a result of a major federal action, or if there is significant public interest in the proposed project.

Extremely hazardous substance: Any substance listed in the appendixes to 40 CFR 355 (taken from 40 CFR 370.2).

Fill material: Any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a water body.

Fire management plan: Differs from a wildland fire management plan only in that an FMP applies to all areas of a site rather than just wildlands.

Floodplain: The lowlands adjoining inland and coastal waters and relatively flat areas and flood-prone areas of offshore islands, including the area inundated by a 1 percent or greater probability of flood in any year. The base floodplain is defined as the 100-year floodplain; the critical action floodplain is defined as the 500-year floodplain.

Floodplain/wetland assessment: An assessment of the potential impacts to floodplains or wetlands resulting from a DOE proposed action, as defined in 10 CFR 1022. The assessment precedes issuance of a Statement of Findings.

Fuel: Combustible wildland vegetative materials, living or dead.

Fuels management: Practice of evaluating and treating wildland fuel to either reduce flammability or to meet environmental goals by mechanical, chemical, biological, or manual means, including prescribed fire. Fuel treatment includes the manipulation of wildland fuel, such

as lopping, chipping, crushing, piling, and burning, or removing for the purpose of reducing its flammability or resistance to control.

Fugitive dust: Particulate matter, composed of soil or industrial particulates such as ash, coal, and minerals, that becomes airborne because of wind or mechanical disturbance of surfaces. This definition does not encompass natural sources of dust and fugitive emissions.

General Hazmat employee: A person who is employed by a Hazmat employer and who in the course of employment directly affects HRM transportation safety. Includes employees who (1) load, unload, or handle HRM; (2) manufacture, test, recondition, repair, modify, or mark packages as qualified for use in the transportation of HRM; (3) prepare HRM for transportation; (4) are responsible for safety during transport of HRM; or (5) operate a vehicle used to transport HRM. For purposes of this procedure, training for general Hazmat employees is subdivided into two Hazmat levels: “General Awareness” (Level 1) and “Driver” (Level 2). The level of training required depends upon the scope of the job functions.

Hazardous air pollutant: Any pollutant listed by EPA as a hazardous air pollutant in conformance with Section 112(b) of the CAA.

Hazardous chemical: Any hazardous chemical as defined under 29 CFR 1910.1200(c). The following are not defined as hazardous chemicals: (1) any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration; (2) any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use; (3) any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public; (4) any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual; (5) any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer (40 CFR 370.2).

Hazardous material: A substance or material that has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and that has been so designated. The term includes hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials as defined in 49 CFR 171; materials designated as hazardous under the provisions of 49 CFR 172; and materials that meet the defining criteria for hazard classes and division in 49 CFR 173.

Hazardous substance: Any substance designated pursuant to 40 CFR 302.

Hazardous waste: Solid wastes (including liquids and gases) or combination of solid wastes that, because of their quantity, concentration, or physical or chemical characteristics, may negatively affect human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. It includes both listed and characteristic wastes designated hazardous by EPA regulations.

Hazmat employer: A company that uses one or more of its employees in connection with transporting HRM in commerce.

Hazmat shipper: A person responsible for shipping HRM in accordance with applicable transportation regulations. A Hazmat shipper is responsible for certifying, by signature, that HRM are “properly classified, described, packaged, marked, and labeled and are in appropriate condition for transportation . . .” (49 CFR 172.204).

Historic property: Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. It also includes properties of traditional religious and cultural importance to Native American tribes, which meet the National Register criteria. In this document, historic properties are referred to as “eligible” cultural resources.

Hydric soil: A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic (low-oxygen) conditions that favor the growth of water-loving plants.

Interagency planning: Developing and conducting preparedness activities in conjunction with other agencies, including, as applicable, the Federal Emergency Management Agency; EPA; the National Oceanic and Atmospheric Administration; the U.S. Department of Defense; and state and local wildland fire management planning, response, and recovery organizations.

International Air Transport Association: The organization that regulates the transportation of dangerous goods by air. For the purposes of this document, dangerous goods include chemical reagents and environmental samples.

Land-use planning and management process: A process examining the environmental impact, consequences, and recommended practices for LM land use and stewardship, prepared in conformance with applicable DOE orders, federal requirements, and guidance.

Listed species: Any species of fish, wildlife, or plant that has been identified as endangered or threatened under Section 4 of the ESA. Listed species are identified in 50 CFR 17.11–17.12.

Material safety data sheet: The sheet required to be developed under 29 CFR 1910.1200(g).

Mixed waste: Waste containing both radioactive and hazardous components as defined by the AEA and RCRA, respectively.

National historic landmarks: Nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. They are places where significant historical events occurred, where prominent Americans worked or lived, that represent those ideas that shaped the nation, that provide important information about our past, or that are outstanding examples of design or construction.

Nonpoint source: A diffuse source from which pollutants are or may be discharged. Unlike a point source, it is not a discernible, confined, and discrete conveyance. Nonpoint source pollution occurs when rainfall, snowmelt, or irrigation water runs over land or through the ground, picks up pollutants, and deposits them into surface water or groundwater. Examples of nonpoint source pollution include (1) excess fertilizers, herbicides, and insecticides contained in

water runoff from agricultural lands; (2) oil, grease, and toxic chemicals contained in water runoff from urban areas; and (3) sediment contained in runoff from construction sites and crop and forest lands.

Opacity: The capacity to obstruct the transmission of light in air, expressed as a percentage.

Operational fire: Any fire ignited by management actions to remove debris from operational or construction activities. A written approved procedure must exist, and NEPA requirements must be met prior to ignition. Any escaped operational fire in a wildland is reclassified as a wildland fire.

Point source: Any discernible, confined, and discrete conveyance, including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include irrigation return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant: Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the AEA), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water (40 CFR 122.2).

Polychlorinated biphenyl: Any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees, or any combination of substances that contains chlorinated biphenyls.

Preparedness: Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination.

Prescribed fire: Any fire ignited by management actions to meet specific objectives. A written, approved, prescribed fire plan must exist, and NEPA requirements must be met prior to ignition. Any escaped prescribed fire is reclassified as a wildland fire.

Radioactive material: Any material defined as such in 49 CFR 173.

Radioactive waste: Solid, liquid, or gaseous material that is no longer needed and that contains radionuclides that are regulated under the AEA, as amended.

Radioparticulates: Airborne radionuclides that exist as a fraction of suspended particulate matter.

Release: Includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposal into the environment of hazardous waste or hazardous constituent. This term is typically associated with CERCLA.

Requisitioner: Anyone who makes a request to purchase a chemical product in support of LM activities and operations (e.g., project support personnel, Facility Management, the Environmental Sciences Laboratory, remote site locations.)

Reportable quantity: A chemical exceeding the quantity established in 40 CFR 302.4, Table 302.4, “List of Hazardous Substances and Reportable Quantities,” the release of which requires notification in accordance with 40 CFR 302.6.

Residual radioactive material: “Waste (which the Secretary determines to be radioactive) in the form of tailings resulting from the processing of ores for the extraction of uranium and other valuable constituents of the ores; and other waste (which the Secretary determines to be radioactive) at a processing site, which relate to such processing, including any residual stock of unprocessed ores or low-grade materials” (UMTRCA Title I–Remedial Action Program, Section 101, “Definitions”).

Restricted-use pesticide: Any pesticide determined by the EPA Administrator to have the potential to cause substantial adverse effects on the applicator or environment without additional regulatory restrictions. Restricted-use pesticides can be applied only by certified applicators (private or commercial) or under the direct supervision of a certified applicator.

Sacred sites: As defined in Executive Order 13007, “any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.” A site does not have to be eligible for inclusion in the National Register to be considered a sacred site.

State historic preservation officer: The officer who represents the interests of a state and its citizens in the preservation of their cultural heritage. In accordance with Section 101(b)(3) of the National Historic Preservation Act, the SHPO advises and assists federal agencies performing their Section 106 responsibilities and cooperates with such agencies, local governments, organizations, and individuals to ensure that historic properties are taken into consideration at all levels of planning and development.

Surveillance monitoring: A monitoring program designed to detect contaminant releases into the environment or changes in contaminant levels from past releases from a DOE facility, activity, or structure.

Threshold planning quantity: An extremely hazardous substance whose quantity exceeds Appendix A and B to Part 355, “The List of Extremely Hazardous Substances and Their Threshold Planning Quantities,” which invokes facility notification responsibilities to state and local emergency planning organizations.

Traditional cultural properties: Those properties or sites that are eligible for inclusion in the National Register because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history and (b) are important to maintaining the continuing cultural identity of the community.

Tribal historic preservation officer: The officer who represents the interests of those tribes that have assumed SHPO responsibilities on their tribal lands and have been certified pursuant to Section 101(d)(2) of the National Historic Preservation Act. Tribes that have not been so certified have the same consultation and concurrence rights as THPOs when the undertaking takes place, or affects eligible cultural resources, on their tribal lands. The practical difference is that during such undertakings, THPOs would be consulted *in lieu of* the SHPO, while non-certified tribes would be consulted *in addition to* the SHPO.

Underground storage tank: Any one tank or combination of tanks (including underground pipes connected thereto) used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. Certain exclusions, identified at 40 CFR 280.12, apply to this definition.

Undertaking: A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those conducted by or on behalf of a federal agency; those conducted with federal financial assistance; those that require a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency.

Waters of the United States: (1) All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; (2) all interstate waters, including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce; (4) all impoundments and tributaries of waters otherwise defined as waters of the United States; (5) the territorial sea; and (6) wetlands adjacent to waters identified in definitions 1 through 5.

Watershed management approach: “A flexible framework for managing water resource quality and quantity within specified drainages or watersheds. This approach includes stakeholder involvement and management action supported by sound science and appropriate technology” (EPA 2008).

Wetlands: Those areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, margins of lakes and streams, seasonal wetlands, and similar areas, regardless of whether standing water is present at any given time.

Wildland: An area in which development is essentially nonexistent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.

Wildland fire: Any nonstructural fire that occurs in the wildland. Escaped prescribed or operational fires are classified as wildland fires. It is DOE policy to suppress wildland fires.

Wildland fire management plan (WFMP): A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans, such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Wildland fire suppression: An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, or the use of critical firefighting resources.

Wildland/urban interface: The zone where structures and other human development meet or become intermingled with undeveloped wildland.

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14.0 References

Code of Federal Regulations

10 CFR 835. U.S. Nuclear Regulatory Commission, “Occupational Radiation Protection,” *Code of Federal Regulations*, January 1, 2006.

10 CFR 1021. U.S. Department of Energy, “National Environmental Policy Act Implementing Procedures,” *Code of Federal Regulations*, January 1, 2003.

10 CFR 1022. U.S. Department of Energy, “Compliance with Floodplain and Wetland Environmental Review Requirements,” *Code of Federal Regulations*, January 1, 2005.

29 CFR 1910.1200(c). U.S. Department of Labor, Occupational Safety and Health Administration, “Hazard Communication,” *Code of Federal Regulations*, July 1, 2005.

33 CFR 325. U.S. Army Corps of Engineers, Department of the Army, “Processing of Department of the Army Permits,” *Code of Federal Regulations*, July 1, 2004.

36 CFR. U.S. Department of the Interior, National Park Service, “Parks, Forests, and Public Property,” Implementing Regulations of the National Historic Preservation Act, *Code of Federal Regulations*, July 1, 2005:

Part 60, “National Register of Historic Places.”

Part 79, “Curation of Federally Owned and Administered Archaeological Collections.”

Part 800 et seq., “Advisory Council on Historic Preservation, Protection of Historic Properties.”

40 CFR. U.S. Environmental Protection Agency, “Protection of Environment,” *Code of Federal Regulations*, July 1, 2007:

Part 50, “National Primary and Secondary Ambient Air Quality Standards.”

Part 51, “Requirements for Preparation, Adoption, and Submittal of Implementation Plans.”

Part 52, “Approval and Promulgation of Implementation Plans.”

Part 61, “National Emission Standards for Hazardous Air Pollutants.”

Part 122, et seq., “EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.”

Parts 152–180, Subchapter E, “Pesticide Programs.”

Part 192, “Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings.”

Part 260, “Hazardous Waste Management System: General.”

Part 261 et seq., “Identification and Listing of Hazardous Waste.”

Part 262, “Standards Applicable to Generators of Hazardous Waste.”

- Part 264, “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.”
- Part 265, “Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.”
- Part 266, “Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities.”
- Part 267, “Standards for Owners and Operators of Hazardous Waste Facilities Operating Under a Standardized Permit.”
- Part 268, “Land Disposal Restrictions.”
- Part 273, “Standards for Universal Waste Management.”
- Part 279, “Standards for the Management of Used Oil.”
- Part 280 et seq., “Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST).”
- Part 302 et seq., “Designation, Reportable Quantities, and Notification.”
- Part 355, “Emergency Planning and Notification.”
- Part 370 et seq., “Hazardous Chemical Reporting: Community Right-to-Know.”
- Part 372, “Toxic Chemical Release Reporting: Community Right-To-Know.”
- Part 761, “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.”
- Part 763, “Asbestos.”
- Parts 1500–1508 et seq., “Council on Environmental Quality.”

43 CFR 7. U.S. Department of the Interior, “Protection of Archaeological Resources,” *Code of Federal Regulations*, October 1, 2004.

43 CFR 10. U.S. Department of the Interior, “Native American Graves Protection and Repatriation Regulations,” *Code of Federal Regulations*, October 1, 2004.

49 CFR. U.S. Department of Transportation, “Transportation,” *Code of Federal Regulations*, October 1, 2010:

- Part 40, “Procedures for Transportation Workplace Drug and Alcohol Testing Programs.”
- Parts 100–185, “U.S. Department of Transportation, Research and Special Programs Administration.”
- Part 171, “General Information, Regulations, and Definitions.”
- Part 172, “Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements.”
- Part 173, “Shippers—General Requirements for Shipments and Packagings.”
- Part 380, “Special Training Requirements.”

Part 382, “Controlled Substances and Alcohol use and Testing.”

Part 383, “Commercial Driver’s License Standards; Requirements and Penalties.”

Part 390, “Federal Motor Carrier Regulations; General.”

50 CFR. U.S. Fish and Wildlife Service, Department of the Interior, *Code of Federal Regulations*, October 1, 2004:

Part 10.13, “List of Migratory Birds.”

Part 17 et seq., “Endangered and Threatened Wildlife and Plants.”

50 CFR 402. U.S. Department of the Interior, Fish and Wildlife Service, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce, “Interagency Cooperation—Endangered Species Act of 1973, as Amended,” *Code of Federal Regulations*, October 1, 2004.

United States Code

7 U.S.C. 136. Federal Insecticide, Fungicide, and Rodenticide Act.

15 U.S.C. 2601. Toxic Substances Control Act.

16 U.S.C.:

469–469c, Archaeological and Historic Preservation Act.

470–470b, 470c–470n, National Historic Preservation Act.

470aa–470ll, Archaeological Resources Protection Act.

661. Fish and Wildlife Coordination Act.

703. Migratory Bird Treaty Act.

1531. Endangered Species Act.

25 U.S.C. 3001 et seq. Native American Graves Protection and Repatriation Act.

33 U.S.C. 1251 et seq. Clean Water Act (amends the Federal Water Pollution Control Act):

Section 101, Declaration of Goals and Policy.

Section 318, Aquaculture.

Section 401, Certification.

Section 402, National Pollutant Discharge Elimination System.

Section 404, Permits for Dredged or Fill Material.

Section 405, Disposal or Use of Sewage Sludge.

42 U.S.C. The Public Health and Welfare:

- 300f, Safe Drinking Water Act.
- 1996, American Indian Religious Freedom Act.
- 2011, Atomic Energy Act.
- 4321, National Environmental Policy Act.
- 6901, Resource Conservation and Recovery Act.
- 6961, Solid Waste Disposal.
- 7401, Clean Air Act, Sections 111, 112, and 182.
- 7901, Uranium Mill Tailings Radiation Control Act, Jan 2, 2006.
- 9601, Comprehensive Environmental Response, Compensation, and Liability Act.
- 11001, Emergency Planning and Community Right-to-Know Act.
- 13101, Federal Pollution Prevention Act of 1990.
- 13102, Definitions, January 2003.
- 13106, Source Reduction and Recycling Data Collection, January 2003.

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