

**Monticello Long-Term Surveillance and Maintenance
Operating Procedures
for
Annual Inspections and CERCLA Five-Year Reviews**

Volume IV

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Monticello Long-Term Surveillance and Maintenance Operating Procedures
for Annual Inspections and CERCLA Five-Year Reviews
(Volume IV)

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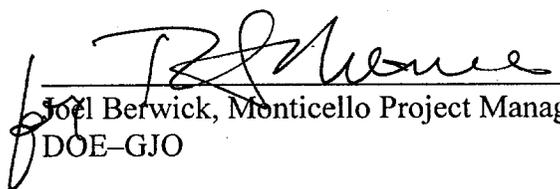


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Acronyms

ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Difference
FFA	Federal Facilities Agreement
GJO	Grand Junction Office
GRT	General Radiological Training
HASP	Health and Safety Plan
LCRS	Leachate Collection and Removal System
LDS	Leak Detection System
LTSM	Long-Term Surveillance and Maintenance
MMTS	Monticello Mill Tailings Site
MVP	Monticello Vicinity Properties
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
RAO	remedial action objective
RCT	Radiological Control Technician
ROD	Record of Decision
TBC	to be considered
TSF	Temporary Storage Facility
UDEQ	Utah Department of Environmental Quality

Glossary

Annual inspection—A review of the work and documentation conducted by the Monticello LTSM Representative combined with a visit to the site to determine protectiveness of the remedy. One or more persons knowledgeable with the site conduct the annual inspection.

CERCLA five-year report—The results of a review conducted every five years are summarized in this report. The report states whether the remedy is protective of human health and the environment, documents any deficiencies found, and recommends specific actions to ensure that the remedy will continue to be protective.

Chief inspector—An individual assigned by the Contractor LTSM Project Manager to lead annual inspections and CERCLA five-year reviews. The Contractor LTSM Project Manager may choose to serve as the chief inspector.

Five-year review team—A team selected by the Contractor LTSM Project Manager and consisting of at least two members that conduct the CERCLA five-year review and write the CERCLA five-year review report.

Institutional controls—Administrative procedures implemented to ensure that a remedy is protective of human health and the environment. For example, a restriction on the use of ground water is an institutional control.

Protectiveness statement—A statement in the CERCLA five-year review report that documents whether a remedy is protective of human health and the environment.

Radiological as-built—Engineering drawings, located in the Monticello LTSM Representative's office, that identify radiation levels at individual properties.

Executive Summary

This manual identifies activities the U.S. Department of Energy (DOE) will perform at the Monticello Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites to ensure the remedy remains protective of human health and the environment. It also identifies the format and content of annual inspections and CERCLA five-year review reports for the Monticello Mill Tailings Site (MMTS) and the Monticello Vicinity Properties (MVP) site. It is consistent with the U.S. Environmental Protection Agency's (EPA's) *Comprehensive Five-Year Review Guidance*, (EPA 2001) which is currently the most recent guidance available. DOE will revise or update its review to be consistent with the most recent guidance available.

Section 121(c) of CERCLA requires that remedial actions resulting in any hazardous substances, pollutants, or contaminants remaining at a site above levels that allow for unlimited use and unrestricted exposure be reviewed every five years to ensure protection of human health and the environment. Therefore, CERCLA five-year reviews are required by statute for the MVP site and the MMTS. Separate CERCLA five-year review reports will be written for each site; however, the review of each site will be conducted simultaneously.

Annual inspections will be conducted to ensure the success of the CERCLA five-year reviews. These inspections are designed to identify potential problems so that corrective actions may be implemented in a timely and cost effective manner. DOE will conduct annual inspections consistent with its Long-Term Stewardship Program and the requirements of CERCLA.

The next five-year review is due in June 2002. Subsequent five-year reviews are triggered 5 years from the previous submittal date.

End of current text

1.0 Manual Overview

This manual shall be used in conjunction with the *Monticello Long-Term Surveillance and Maintenance Administrative Manual* (DOE 2001a).

This manual is Volume IV of the operating plans and procedures described in the *Monticello Long-Term Surveillance and Maintenance Administrative Manual* (DOE 2001a). Whereas the *Monticello Long-Term Surveillance and Maintenance Administrative Manual* is a generalized document describing the overall project, this volume provides detailed operating plans and procedures for conducting annual inspections and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) five-year reviews for the Monticello Mill Tailings Site (MMTS) and the Monticello Vicinity Properties (MVP) site.

CERCLA five-year reviews for the MVP and MMTS are required by statute because radioactive contamination remains on site. Although CERCLA five-year reviews have been conducted in the past, the first post remediation review for the MVP site and MMTS Operable Unit (OU) I and OU II will be conducted in June 2002.

This manual will be updated as needed and will be reviewed at a minimum of every 2 years to ensure that the U.S. Department of Energy (DOE) is conducting long-term surveillance and maintenance (LTSM) at an appropriate level of effort. Procedures for updating and revising this manual are specified in the *Monticello Long-Term Surveillance and Maintenance Administrative Manual* (DOE 2001a).

Pursuant to CERCLA ' 104 and ' 121 and the Federal Facilities Agreement (FFA), the U.S. Environmental Protection Agency (EPA) *Comprehensive Five-Year Review Guidance* (EPA 2001) will be used when conducting CERCLA five-year reviews.

1.1 Information in this Manual

This manual is divided into sections listed below that describe the specific operating procedures for conducting LTSM activities.

Section 1.0, "Manual Overview," is an annotated outline that can be used as a guide for using the manual.

Section 2.0, "Annual Inspections," establishes procedures for conducting annual inspections and identifies the annual report format. The procedures are designed to ensure that maintenance activities are being conducted at an appropriate level of effort and that information leading to a successful five-year review is obtained and readily available.

Section 3.0, "CERCLA Five-Year Reviews," specifies the operating procedures that will be used to conduct the mandatory CERCLA five-year reviews. The CERCLA five-year review report format is also identified in this section.

Section 2.0 and Section 3.0 each contain the following eight major subsections:

Purpose—Defines the work to be done and how that work will be accomplished.

Scope—Defines the applicability and limits of the procedure.

Definitions—Defines unfamiliar words or phrases that are used in the procedure.

Responsibilities—Defines the individuals or organizations that perform the procedure.

Procedure—Identifies the sequential preparations, operations, documentation, or verifications necessary to complete the procedure.

Training—Identifies the regulatory training required for personnel who are implementing the procedure.

Records—Identifies the records that are generated from the procedure.

References—Identifies the references, including regulations or standards, that were used to write the procedure.

Throughout this manual, “shall,” “will,” and “must” indicate a requirement; “should” indicates a recommendation; and “may” indicates permission and is neither a requirement nor a recommendation.

[Appendices A, B, C, and D](#) are site-specific checklists to be used during annual inspections and five-year reviews.

2.0 Annual Inspections

Annual inspections are conducted once each year in August beginning in 2001.

2.1 Purpose

The purposes of annual inspections are to: (1) ensure that routine surveillance continues to be adequate for its stated purposes; (2) evaluate the condition of areas of special concern; (3) review the records created by the Monticello LTSM Representative; (4) document the information gathered in an annual inspection; and (5) to ensure successful five-year reviews.

2.2 Scope

This procedure is limited to the annual inspection of the MMTS and MVP.

2.3 Definitions

Annual inspection—A review of the work and documentation conducted by the Monticello LTSM Representative combined with a visit to the site to determine protectiveness of the remedy. One or more persons familiar with the site conduct the annual inspection.

Government-Owned Piñon/Juniper Properties—These properties are identified as MP-00391-VL, Phase III; MP-01077-VL, Phase II; and MP-01041-VL. These properties are owned by the City of Monticello.

Privately Owned Piñon/Juniper Property—This property is identified as MS-00176-VL.

Soil and Sediment Properties—These properties are identified as MP-00951-VL, MP-00990-CS, MP-01084-VL, MG-01026-VL, MG-01027-VL, MG-01029-VL, MG-01030-VL, and MG-01033-VL.

Supplemental Standards Properties—Property where radioactive contamination was left in place in compliance with 40 CFR Part 192, “Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings.” These properties are the City of Monticello streets and utilities, Highways 191 and 666 rights-of-way, privately owned piñon/juniper property, government-owned piñon/juniper properties, and the soil and sediment properties.

2.4 Responsibilities

DOE-Grand Junction Office (GJO) LTSM Project Manager—Will be ultimately responsible for the annual inspection and for submitting the annual inspection report to the EPA and the Utah Department of Environmental Quality (UDEQ).

Contractor LTSM Project Manager—The Contractor LTSM Project Manager shall ensure that the annual inspection is conducted and that the annual inspection report is submitted to DOE.

Monticello LTSM Representative—The Monticello LTSM Representative is responsible for providing the inspection team with documentation of LTSM activities for the previous year. The Monticello LTSM Representative is also responsible for ensuring that all safety procedures are followed during the annual inspection.

Chief inspector—The chief inspector is responsible for conducting the inspection and writing the annual inspection report.

2.5 Procedure

The Contractor LTSM Project Manager shall appoint a chief inspector to conduct the annual inspection in August of each year and write the annual inspection report. The Contractor LTSM Project Manager may assemble a team of technical experts to assist with the inspection. The chief inspector conducts the annual inspections, which involve reviewing work performed by the Monticello LTSM Representative and physically inspecting the site.

The procedures in this section summarize the annual inspection and preparation of annual inspection reports for the Repository, the TSF, Pond 4, the former Millsite, government owned piñon/juniper, the supplemental standard properties, and the OU II soil and sediment properties. The MVP supplemental standards properties include City of Monticello streets and utilities, Highways 191 and 666 rights-of-way, and MS-00176-VL (privately owned piñon/juniper property). The information gathered during the annual inspections will be used to ensure that the remedies taken to date remain protective of human health and the environment. Information and data gathered and analyzed during annual inspections will also be incorporated in the CERCLA five-year review.

The chief inspector, who is appointed by the Contractor LTSM Project Manager, or his designee shall prepare for the annual inspection by completing the following tasks:

- Review the final LTSM Plan, the previous site inspection reports and site inspection maps, and any maintenance or corrective action reports;
- Review the site inspection checklists shown in Appendices A through D. Review records of previous inspections or repairs and incorporate necessary modifications into the inspection checklist;
- Verify the following names and telephone numbers of the parties with whom access or notification agreements have been executed:

Douglas Elderedge	(435) 587-2928
John Johnson	(435) 587-2889
Bryan Bowering	(435) 587-3056
Sutherland Brothers (Lee and Bob)	(970) 864-7662

- Verify the following DOE 24-hour telephone number and appropriate agency telephone numbers and contacts:

DOE–GJO Office	(970) 248-6000
Monticello Field Office	(435) 587-4000
Monticello LTSM Representative (Lead)	(435) 587-2902 or (435) 459-4128
Monticello LTSM Representative	(435) 587-3115 or (435) 459-4980
Monticello City Police	(435) 587-2615
Monticello Fire Department	911 or (435) 587-2500
San Juan County Emergency Medical Services	911 or (435) 587-2237
Grand Junction Office Security Personnel (staffed 24 hours/day)	(970) 248-6070
DOE–GJO LTSM Project Manager	(970) 248-6037

- Schedule the site inspection;
- Inform EPA and UDEQ of the inspection at least 2 weeks prior to the site visit;
- Assemble the equipment needed to conduct the inspection; and

During the inspection, the chief inspector shall:

- Review the records created by the Monticello LTSM Representative regarding routine surveillance observations for the elapsed period since the last annual inspection. The chief inspector and a member of the quality assurance department shall review records maintained by the Monticello LTSM Representative. These records include:
 - As-builts
 - Record Books
 - Admin Record
 - Information Repository
 - Transport Manifests and Temporary Storage Facility (TSF) documentation
- Record observations in a reportable form. Methods of recording observations include:
 - Notations on maps and drawings;
 - Hand-written notes and measurements in a field book. **Note:** The field book used to record annual inspection observations shall be separate from the LTSM record books kept by the Monticello LTSM Representative for routine surveillance observations;
 - Photographs and an accompanying photograph log describing photograph subjects and locations;
 - Other methods as appropriate;

- Record date, location, weather conditions, noteworthy observations, and sufficient background information to support the development of a complete and accurate annual inspection report; and
- Collect and maintain records in accordance with Section 9.0, “Records Management” of the *Monticello Long-Term Surveillance and Maintenance Administrative Manual* (DOE 2001a).

2.5.1 Annual Inspection Procedures for DOE-Owned Property

DOE-owned property includes the repository, Pond 4, administrative buildings, TSF, and surrounding areas. Access is restricted to federally owned property and inspection requirements are different from supplemental standards properties. Maps and descriptions of this property are found in the *Long-Term Surveillance and Maintenance Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite*, Volume I (DOE 2001b).

2.5.1.1 Repository

The chief inspector shall:

- Review monthly monitoring records of the repository Leachate Collection and Removal System (LCRS) to ensure that records are consistent with the requirements specified in the *Long-Term Surveillance and Maintenance Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite*, Volume I (DOE 2001b);
- Review monthly monitoring records of the repository Leak Detection System (LDS) to ensure that records are consistent with the requirements specified in the *Long-Term Surveillance and Maintenance Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite*, Volume I (DOE 2001b); and
- To the extent possible, physically inspect the repository LCRS and LDS sumps and systems. The leachate transmission line (including the manholes) between the repository and Pond 4 will be walked and inspected for evidence of leakage or deterioration.
- Monitor the site perimeter and site area transects for damage or evidence of disturbance to the following:
 - Site perimeter roads.
 - Fences, gates, and locks.
 - Permanent site surveillance features (e.g., site markers, survey monuments, boundary monuments, etc.).
 - Site area vegetation or volunteer plant growth.
 - Stable surfaces (look for evidence of sedimentation or erosion).
 - Drainage/runoff ditches/sediment basin (ponds).
- Review maintenance records for repairs, etc.

- Walk the complete length of transects along the engineered components (diversion channels, repository side slopes, crest, and cover) and examine for evidence of:
 - Structural instability due to differential settlement, subsidence, cracking, sliding, or creep.
 - Erosion as evidenced by the development of rills or gullies.
 - Sedimentation or debris.
 - Rapid deterioration of riprap caused by weathering or erosion.
 - Rock or other repository material removal.
 - Seepage.
 - Human or animal intrusion (inadvertent or deliberate).
 - Animal burrowing.
 - Vandalism.
 - Human or animal trail development.
 - Unwanted volunteer plant growth.
- Monitor the TSF and check the following items:
 - Fence, gates, locks.
 - Storage container integrity.
 - Absence of spills from all containers.
 - Entrance logbook available and current.
 - Material transfer records located in the TSF Record Book.
 - Shipping documents for shipments of material regulated by Utah Department of Transportation.
- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for DOE-Owned Property (Appendix A).

2.5.1.2 Pond 4

The chief inspector shall:

- Review records of monthly monitoring of the Pond 4 LDS to ensure that records are consistent with the requirements specified the *Long-Term Surveillance and Maintenance Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite*, Volume I (DOE 2001b);
- Inspect Pond 4 from all sides for evidence of failed liner integrity. Evidence would include liner bubbling, visible tears, eroded anchor trenches, debris in the pond, and seeps or leaks outside of the pond; and
- To the extent possible, physically inspect the Pond 4 LDS sump and system.
- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for DOE-Owned Property (Appendix A).

2.5.2 Annual Inspection Procedures for Non-DOE Owned Property

Non-DOE owned property includes Monticello City Streets and Utilities, Highways 191 and 666 rights-of-way, privately owned piñon/juniper property, government-owned piñon/juniper properties, and OU II soil and sediment properties. Maps and descriptions of these properties are found in the *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties*, Volume II (DOE 2001c).

2.5.2.1 Supplemental Standards Properties

At all supplemental standards properties, the chief inspector shall:

- Visually inspect selected portions of the supplemental standards properties paying particular attention to areas of special concern as noted in the routine surveillance records or as identified in previous inspection report;
- Check for changes in land use on or near the supplemental standards properties; determine if the changes will affect the subject property; and
- Check for unauthorized excavation activities on the supplemental standards properties or areas where erosion is evident.
- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for Non-DOE Owned Property (Appendix B).

2.5.2.2 City Streets and Utilities

At the city streets and utilities properties, the chief inspector shall:

- Visually inspect the sites of selected excavations that were conducted since the last annual inspection; and
- Pay particular attention to erosion potential.
- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for Non-DOE Owned Property (Appendix B).

2.5.2.3 Highways 191 and 666 Rights-of-Way

At the Highways 191 and 666 rights-of-way, the chief inspector shall:

- Visually inspect the sites of selected excavations that were conducted since the last annual inspection; and
- Pay particular attention to erosion potential.

- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for Non-DOE Owned Property (Appendix B).

2.5.2.4 Privately Owned Piñon/Juniper Property

At the MS-00176-VL property, the chief inspector shall:

- Check with the San Juan County Court House to ensure that the zoning and ownership for this property has not changed.
- Ensure that the Monticello LTSM Representative has determined if property ownership or habitation has changed. If one of these has changed, ensure that the new owner or occupant has been informed of the land use restrictions associated with the property.
- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for Non-DOE Owned Property (Appendix B).

2.5.2.5 Government-Owned Piñon/Juniper Properties and Former Millsite

Government-owned piñon/juniper properties are identified as MP-00391-VL, Phase III; MP-01077-VL, Phase II; and MP-01041-VL. The former millsite property includes property numbers MS-00893, MP-00181, and MP-00391. Maps and description of this property are found in the *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties*, Volume II (DOE 2001c).

At selected locations on the government-owned properties, the chief inspector shall:

- Visually inspect the following general inspection features:
 - Access gates
 - Access roads
 - Signs (if any)
 - Perimeter fence
- Look for and make note of:
 - Intrusion by livestock
 - Trash accumulation
 - Earth movement, erosion, or changes in nearby stream channels that could affect the property
 - New construction or development that could affect the property
- Evaluate the need for maintenance, particularly sign replacement and fence repairs.
- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for Government-Owned Piñon/Juniper Properties and the Former Millsite (Appendix C).

At the former millsite, the chief inspector shall:

- Ensure that no habitable structures have been built.
- Ensure that wells have not been constructed in the alluvial aquifer.
- Ensure that land use is consistent with the terms of the National Park Service land to park's agreement/covenant deferral. The deed restrictions are specified in Attachment 3 of the *Final Covenant Deferral Request for Transfer of Federal Property in Monticello, Utah* (DOE 2000).
- Ensure that human-caused damage to the wetland areas is not occurring.
- Complete applicable portions of the Annual Inspection/Five-Year Review Site Inspection Checklist for Government-Owned Piñon/Juniper Properties and the Former Millsite (Appendix C).

2.5.2.6 OU II Soil and Sediment Properties

Restrictive easements prohibit the removal of contaminated soils and construction of habitable structures in the contaminated portions of OU II soil and sediment properties. These properties are identified as MP-00951-VL, MP-00990-CS, MP-01084-VL, MG-01026-VL, MG-01027-VL, MG-01029-VL, MG-01030-VL, and MG-01033-VL.

The chief inspector shall take the following actions:

- Ensure that the Monticello LTSM Representative has determined if property ownership or habitation has changed. If either of these has changed, ensure that the Monticello LTSM Representative has informed the new owner or occupant of the land use restrictions associated with the property.
- Within the restrictive easement areas of each property, inspect for evidence of construction of habitable structures or excavation and removal of contaminated materials from the restrictive easement.
- Inspect for significant natural or man-made disturbances of land.
- Complete the Annual Inspection/Five-Year Review Site Inspection Checklist for OU II Soil and Sediment Properties (Appendix D).

2.5.3 Annual Inspection Procedures for Monticello Surface and Ground Water

Surface and ground water remediation is presently being addressed under OU III. OU III is managed under the Monticello Groundwater Project. In addition to developing and implementing the record of decision (ROD) for OU III, the project involves monitor well installation and maintenance, surface and ground water monitoring, and monitoring and maintenance of an underground permeable reactive treatment wall. Depending on the ROD, which is anticipated in 2004, and upon completion of the selected remedy(ies), the LTSM Program will assume

annual inspections of OU III. It is likely that annual inspection items and LTSM will include well monitoring, sampling and analysis of surface and ground water, monitoring well drilling restrictions, and monitoring of land use restrictions placed on downgradient properties. The State Engineer has also issued a policy to disallow water wells in the alluvial ground water in these areas.

The chief inspector shall take the following actions:

- Inspect OU III monitoring wells for integrity.
- Inspect the PeRT wall for evidence of damage.
- Inspect the millsite and soil and sediment properties to ensure that no water wells have been installed for domestic purposes. Obtain a current map of water well locations from the OU III project manager.

2.5.4 Annual Report

The LTSM Program will prepare an annual inspection report. This report will be a compilation of the results of the LTSM activities associated with the specific LTSM plans. The report will be distributed to EPA, UDEQ, and other interested stakeholders.

The purpose of preparing annual inspection reports for the Monticello Repository, Pond 4, and supplemental standards properties is to document the continued performance of the selected remedies and compliance with institutional controls for those properties. The reports are a means of providing site status to stakeholders and will provide a year-to-year site history that can be used for trend analysis. The reports also represent a readily accessible record of activities that have been implemented or should be implemented to maintain site integrity. In addition, the reports allow DOE to evaluate whether its LTSM activities are conducted at an appropriate level of effort to ensure protection of human health and the environment and to facilitate the CERCLA five-year review.

Typical report contents are as follows:

- Evaluation of current site conditions and assessment of whether the selected remedy continues to be protective of human health and the environment;
- Evaluation of institutional controls for effectiveness;
- Recommendations for further/future monitoring or maintenance, if necessary;
- Items of interest for subsequent inspections;
- Results of specific monitoring defined by the individual LTSM plans;

- Photographs of items of particular interest; and
- Recommendations for changes to LTSM plans, if necessary.

The annual inspection report will be organized and written using the following outline:

Summary—Summarizes any significant observations or states that there were no significant observations.

Introduction—Identifies the purpose of the report; identifies inspectors and date of inspection; identifies regulations/plans that define inspection requirements; identifies individuals contacted in conjunction with the inspection; identifies the purpose of the inspection; states other pertinent information that may not be included above.

Results of the Inspection—A separate subsection pertaining to the Monticello Repository, Pond 4, and the supplemental standards properties should be included. Each subsection will describe relevant observations made during the inspection, including references to photographs, maps, drawings, measurements, and features of special interest, as necessary.

Conclusions and Recommendations—Both general and specific conclusions regarding the Monticello Repository, Pond 4, and the supplemental standards properties performance since the previous annual inspection should be cited. Recommendations should be specific, for example, maintenance actions that should be performed, the need for formal agency correspondence to resolve observed abuses of site controls, or recommended changes in inspection procedure.

Photographs and Photograph Log—If photographs are included in the report, a log referencing the photograph subject, perspective (if useful), and frame number shall be included. The photographs and the negatives shall be placed in archival sleeves and included with the report, in the information repository for future reference.

Appendices will include copies of the annual checklists that were completed.

2.6 Training

To conduct the procedures outlined in this section, the Monticello LTSM Representative shall complete:

- Radiological Control Technician (RCT) Training

To conduct the procedures outlined within this section, the chief inspector and members of the inspection team shall complete:

- General Radiological Training (GRT) and annual refreshers.

2.7 Records

The following record will be generated by this procedure:

- Annual Inspection Report

2.8 References

U.S. Department of Energy, 2000. *Final Covenant Deferral Request for Transfer of Federal Property in Monticello, Utah*, GJO-2000-140-TAR, prepared by MACTEC Environmental Services, LLC for the U.S. Department of Energy Grand Junction Office, Grand Junction, Colorado, January.

———, 2001a. *Monticello Long-Term Surveillance and Maintenance Administrative Manual*, MAC-LMNT 1.1.1, prepared by MACTEC Environmental Restoration Services, LLC for the U.S. Department of Energy Grand Junction Office, Grand Junction, Colorado, December.

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End of current text

3.0 CERCLA Five-Year Reviews

CERCLA five-year reviews for the MVP and MMTS are required by statute because radioactive contamination remains on site. Although CERCLA five-year reviews have been conducted in the past, the first post remediation review for the MVP site and MMTS OU I and OU II will be conducted in June 2002. The CERCLA five-year review will also be conducted in June 2002 for MMTS OU III, which currently has an interim remedial action in progress.

CERCLA §§104, 120, and 121 specifically identify functions and responsibilities vested in the President for directing response efforts and coordinating all other efforts at the scene of a discharge or release on or from Federally-owned property. The President, in Executive Order (EO) 12580, as amended, delegates some of these functions and responsibilities to the respective Federal departments and agencies for Federally-owned facilities over which those lead agencies have jurisdiction, custody, or control.

More specifically, at the MVP and MMTS, CERCLA §§104, 120, EO 12580, and the National Contingency Plan establish the respective Federal department or agency roles and responsibilities for conducting five-year reviews. EO 12580 §§2(d) and (g) give the authority to conduct five-year reviews at the MVP and MMTS sites to DOE and EPA. EPA has authorized DOE to conduct five-year reviews at the MVP and MMTS through the FFA. EPA retains final responsibility to assure that five-year reviews conducted by DOE adequately address the protectiveness of remedies.

This procedure is not inconsistent with the *Comprehensive Five-Year Review Guidance* (EPA 2001). At the time of this writing, this was the most recent guidance available. The most recent CERCLA five-year review guidance shall be used and is available at <http://www.EPA.gov/superfund/pubs.htm>.

Currently, there is no provision for discontinuation of five-year reviews that are required by statute. Because they are required by statute, MVP and MMTS five-year reviews will continue indefinitely. The next five-year review will be conducted in 2007.

3.1 Purpose

The purpose of the five-year review is to determine whether the remedy at the site is protective of human health and the environment. The main purpose of the five-year review is not to reconsider decisions made during the selection of the remedy, but to evaluate the implementation and performance of the selected remedy. A secondary purpose of the five-year review is to identify changes in regulations or standards that could potentially affect the protectiveness of the remedy. Another purpose of the five-year review is to evaluate the implementation and effectiveness of institutional controls that are part of the remedies selected for MMTS and MVP. The five-year review report may need to recommend that the remedy be re-evaluated, or that an additional response action be considered. For example, it may be found that the remedy will not meet cleanup levels for a contaminant of concern, or a new contaminant, source, or pathway of exposure may be discovered. Finally, the five-year review may recommend that the remedy be re-evaluated when a contaminant, source, or pathway has not been sufficiently addressed.

The results of the review are presented in a five-year review report. The five-year review report should:

- State whether the remedy is or is expected to be protective,
- Document any deficiencies identified during the review, and
- Recommend specific actions to ensure that a remedy will be or will continue to be protective.

3.2 Scope

The scope of the five-year review is site specific. Because there are two separate National Priorities List (NPL) sites at Monticello, two separate five-year reviews will be conducted—one for the MMTS and one for the MVP site.

Information collection is the primary activity of the five-year review. Three basic tasks are performed: a document review, interviews, and a site inspection.

3.3 Definitions

CERCLA five-year report—The results of a review conducted every five years are summarized in this report. The report states whether the remedy is protective of health and the environment, documents any deficiencies found, and recommends specific actions to ensure that the remedy will continue to be protective.

Chief inspector—An individual assigned by the Contractor LTSM Project Manager to lead annual inspections and CERCLA five-year reviews.

Five-year review team—A team consisting of at least three members who conduct the CERCLA five-year review and write the CERCLA five-year review report. The Contractor LTSM Project Manager selects the team.

Government-Owned Piñon/Juniper Properties—These properties are identified as MP-00391-VL, Phase III; MP-01077-VL, Phase II; and MP-01041-VL. These properties are owned by the City of Monticello.

Institutional controls—Administrative procedures that are implemented to ensure that a remedy is protective of human health and the environment. For example, a restriction on the use of ground water is an institutional control.

Privately Owned Piñon/Juniper Property—This property is identified as MS-00176-VL.

Protectiveness statement—A statement in the CERCLA five-year review report that documents whether a remedy is or is not protective of human health and the environment.

Radiological as-built—Engineering drawings, located in the Monticello LTSM Representative's office, that identify radiation levels at individual properties.

Soil and Sediment Properties—These privately owned properties are identified as MP-00951-VL, MP-00990-CS, MP-01084-VL, MG-01026-VL, MG-01027-VL, MG-01029-VL, MG-01030-VL, and MG-01033-VL.

Supplemental Standards Properties—Property where radioactive contamination was left in place in compliance with 40 CFR Part 192, “Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings.” These properties are the City of Monticello streets and utilities, Highways 191 and 666 rights-of-way, privately owned piñon/juniper property, government-owned piñon/juniper properties, and the soil and sediment properties.

3.4 Responsibilities

DOE–GJO LTSM Project Manager—Will be ultimately responsible for the CERCLA five-year report and for submitting the report to EPA and UDEQ.

Contractor LTSM Project Manager—Will be responsible for assembling a team to conduct the five-year review and ensure that the team develops an acceptable and technically correct report. The Contractor LTSM Project Manager may delegate any portion of the five-year review to the team members.

Monticello LTSM Representative—Will be responsible for assisting the five-year review team. The Monticello LTSM Representative will provide access to information necessary to conduct the review, accompany the review team on site inspections, and ensure that the review team adheres to safety requirements during the site inspections. The Monticello LTSM Representative is not a member of the review team.

LTSM five-year review team—Will be responsible for conducting the five-year review and writing the five-year review report.

3.5 Procedure

One five-year review will be conducted for the MMTS site and one five-year review will be conducted for the MVP site.

3.5.1 Establish a Five-Year Review Team

The Contractor LTSM Project Manager will select a five-year review team and assign a chief inspector. At a minimum, the review team will consist of an environmental specialist, a quality assurance specialist, and a public relations specialist. The members of the review team may change from one review to the next, depending upon the results of previous reviews and annual inspections. There is no pre-determined number of members on the review team. The Monticello LTSM Representative will accompany the review team on inspections and provide documentation; however, the Monticello LTSM Representative shall not be selected as a review team member.

[Table 3–1](#) provides examples of potential team members; however, the Contractor LTSM Project Manager is not required to choose from and is not restricted to this list.

Table 3–1. Potential Members of the Five-Year Review Team

- Project Manager
- Regional Biological Technical Assistance Groups
- Federal and State Natural Resource Trustees
- Community Involvement Coordinator
- State and/or local regulatory agency representatives
- Tribal representatives
- Technical Assistance Group representatives and/or community representatives
- Other Federal agency representatives (e.g., U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Agency for Toxic Substances and Disease Registry, U.S. Geological Survey, National Oceanic and Atmospheric Administration)
- Technical Experts
 - Construction representative
 - Engineers (e.g., civil, geo-technical, structural, chemical, process)
 - Hydrogeologist
 - Chemist
 - Risk Assessor
 - Biologist
 - Ecologist/ecological risk assessor
 - Attorney/legal advisor
 - Environmental regulatory specialist

3.5.2 Develop a Review Schedule

The chief inspector shall establish a review schedule that includes the tasks associated with the review and identifies the team members assigned to each task. Tasks associated with the review are:

- Inform the community/Public Outreach
- Document review
- Interviews
- Site inspection
- Develop five-year review report
- Conclusions
- Recommendations
- Protectiveness statement
- Provide opportunity for Public and Regulatory Agency review

In addition to these tasks, the chief inspector shall assign tasks associated with potential problems that may be identified in annual inspections or discovered by the Monticello LTSM Representative.

3.5.3 Inform the community

Because the five-year reviews are used to communicate the status and protectiveness of the remedy, the community shall be notified at the outset of the five-year review process. The notification shall consist of a public notice placed in two local newspapers: the San Juan Record and the Blue Mountain Panorama. The notification should state:

- The site name, its location and web address;
- The lead agency conducting the review;

- A brief description of the selected remedy;
- A summary of contamination addressed by the selected remedy;
- How the community can contribute during the review process;
- A contact name and telephone number for further information; and
- The scheduled completion date of the five-year review.

After the five-year review report is completed, a brief summary shall be placed in each newspaper. The summary should include:

- The site name, its location and web address;
- The lead agency conducting the review;
- A brief description of the selected remedy;
- A summary of contamination addressed by the selected remedy as provided in the initial notice;
- A brief summary of the results of the five-year review;
- The protectiveness statement(s);
- A brief summary of data and information that provided the basis for determining protectiveness, issues, recommendations, and follow-up actions directly related to the protectiveness of the remedy;
- Location(s) where a copy of the five-year review can be obtained or viewed;
- A contact name and telephone number where community members can obtain more information or ask questions about the results; and
- The date of the next five-year review or a statement and supporting rationale that five-year reviews will no longer be required.

The review team member assigned to this task shall review the most recent EPA five-year review guidance to ensure that communication with the community is adequate.

3.5.4 Document Review

The document review is the foundation of the five-year review. The review team member assigned to this task shall review the following documents:

- ROD—The ROD shall be reviewed to determine the remedial action objectives and cleanup levels to be achieved;
- Federal Register—The *Federal Register* shall be reviewed to determine if any cleanup standards have been changed that could affect the validity of the remedial efforts;
- Monticello LTSM Operating Procedures (Administrative Manual and Volumes I through IV);
- Documents in the Monticello LTSM Representative's office (e.g., weekly inspections, monthly inspections, radiological as-built drawings, LCRS and LDS monitoring records for Pond 4 and the Repository, Record books for each property);

- Previous annual inspection reports; and
- Most recent five-year review report.

3.5.5 Interviews

Interviews are conducted to identify successes and problems with remedy implementation and to develop an understanding of the site's status. The following is a list of potential interviewees:

- LTSM staff;
- Local regulatory authorities and response agencies;
- Organizations implementing or overseeing institutional controls (e.g. local building department);
- Community action groups or associations;
- Residents/businesses located near the site; and
- Any other pertinent organizations or individuals.

In planning interviews, the team member assigned to this task should assess what the interviews need to cover, how much detail is necessary, and who can best address each issue. The interview should be designed to collect additional information on the following subjects, as needed to supplement other sources of information:

- The implementation and functioning of the remedy;
- The integrity of access restrictions;
- The implementation and enforcement of institutional controls;
- Potential changes in land and resource use;
- Early indicators of potential remedy failure; and
- Any concerns of site neighbors.

The scope of interview questions will vary depending on the party being interviewed. For example, a resident will typically be asked general questions. The Monticello LTSM Representative will typically be asked detailed questions concerning the remedy function. The chief inspector is responsible for determining the extent and scope of each interview on a case-by-case basis.

Potential questions to ask MMTS site neighbors could include:

- Do you feel well informed about the activities and progress at the millsite?
- Do you know what public activities are allowed at the millsite?
- Do you know what property is owned by the City of Monticello and what property is owned by DOE?
- Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

Potential questions to ask the Monticello LTSM Representatives could include:

- Have any problems been encountered which required, or will require, changes in this remedial design or the ROD?
- Is the current budget adequate to conduct all required maintenance activities?
- Have there been unexpected LTSM difficulties or costs at the repository, millsite, city streets and utilities, or Highways 191 and 666 since start-up or in the last 5 years? If so, please give details.
- Have there been opportunities to optimize the operation, maintenance, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
- Do you have any comments, suggestions, or recommendations regarding the project?
- Have there been any significant changes in the LTSM requirements, maintenance schedules, or sampling routines since start-up or in the last 5 years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
- Was utilization of City of Monticello workers and equipment effective in handling any radioactive material that was encountered?

Potential questions to ask the City of Monticello administration could include:

- What is your impression of the project? (general sentiment)
- Do you have any specific problems complying with the terms of the cooperative agreement?
- Are there any plans to change the recreational use of the former millsite? If so, have these plans been submitted to the National Park Service?
- Are you aware of any projects or activities that could disturb the wetland areas along Montezuma Creek?
- Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.
- What effect have site operations had on the surrounding community?
- Is there a continuous onsite LTSM presence? If so, please describe staff and activities.
- Do you feel well informed about the site's activities and progress?
- Question concerning adequateness of DOE in dealing with excavations, screening, and removal of material at highway and utility rights-of-way.
- Have there been communications or activities (site visits, inspections, reporting activities, etc.) conducted by the City of Monticello regarding the millsite? If so, please give purpose and results.

- Have there been any complaints, violations, or other incidents related to the site requiring a response by the City of Monticello? If so, please give details of the events and results of the responses.

Interviews may be conducted in person, by telephone, or by a mailed survey. EPA guidance states that interviews are not mandatory for all CERCLA five-year reviews; however, DOE intends to conduct interviews with interested stakeholders.

3.5.6 Site Inspection

The five-year review team will visually confirm and document the conditions of the site, the remedy, and the surrounding area during the site inspection. Interviews may also be conducted during the site inspection.

Site inspection activities are separated into several tasks:

- Interviews/may or may not include interviewees
- Review of documents and records
- Review of system operation and maintenance (O&M) costs
- Inspection of access and institutional controls
- Inspection of containment and ground water/surface water remedies
- Inspection of general site conditions
- Overall observations

For the MMTS, the inspection procedure will include, at a minimum, a review of all the items identified in Section 2.5 of this manual. The chief inspector may expand the inspection to include additional items that require investigation.

For the MVP site, the inspection will include a review of radiological information recorded on the radiological as-built drawings from scanning of excavations conducted on City of Monticello property or Utah Department of Transportation rights-of-way adjacent to MVP site properties. This radiological information should be assessed to determine the potential existence of previously undiscovered contamination. The Monticello LTSM Representative will provide this information to the CERCLA five-year review team.

Inspection checklists are provided in Appendices A through D and should be completed during the CERCLA five-year review. These checklists serve as guides for planning, documenting, and conducting the site inspection.

3.5.7 Conclusions

The conclusions of the five-year review will include an identification of remedy deficiencies, recommendations and follow-up actions, and a determination of whether the remedy is or is expected to be protective of human health and the environment. These conclusions are arrived at by assessing the information collected during the document review, interviews, site inspection, and other activities. The evaluation should focus on answering the following three questions:

- **Question A**—Is the remedy functioning as intended by the decision documents?
- **Question B**—Are the assumptions used at the time of remedy selection still valid?
- **Question C**—Has any other information come to light that could call into question the protectiveness of the remedy?

See the most recent EPA five-year review guidance for a detailed discussion of how to assess the remedy using these three questions.

3.5.8 Recommendations

Documented recommendations for correcting each deficiency should be developed. The first priority should be to make recommendations and ensure their implementation to correct deficiencies that currently impair protectiveness. These recommendations should be identified as “follow-up actions” in the five-year review report. Follow-up actions should be completed to ensure long-term protectiveness of the remedy, or to bring about protectiveness of a remedy that is currently not protective. The review team may make additional recommendations that do not directly relate to achieving or maintaining the protectiveness of the remedy.

The following are examples of the types of recommendations that are generally considered appropriate as part of a five-year review:

- **Need for Additional Response Actions**—Additional response actions may be necessary if new risk information indicates that a remedy is not protective, or a treatment process is not achieving soil cleanup levels. EPA may implement such further response anytime pursuant to CERCLA §104 or §106 authority. Conducting further investigation and implementing additional response actions can be recommended in the five-year report.
- **Optimization of Response Action**—Where pumping has decreased the areal extent of a ground-water plume, and samples from some monitoring wells no longer have contaminant concentrations above cleanup levels, the sampling plan may be revised to eliminate these wells from the sampling routine or reduce the frequency of their sampling. It may also be possible to remove specific ground-water extraction wells from service and increase the pumping rate on others to optimize ground-water remediation.
- **Ensure Enforcement of Access and Institutional Controls**—If site trespassing is evident, the five-year report could include a recommendation to repair the fence and evaluate the need for additional security measures.

For each recommendation, the report should identify the party responsible for implementation, the agency with oversight authority, and a schedule for completion. Any recommendation that needs to be addressed to achieve protectiveness as a follow-up action should be clearly identified. [Table 3–2](#) is a table that can be used in the five-year review report for documenting both recommendations and follow-up actions.

Table 3–2. Table for Listing Recommendations and Follow-up Actions

Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Action Affects Protectiveness (Y/N)	
				Current	Future

Some actions can be implemented directly on the basis of the five-year review report, whereas others will require further documentation. For instance, if the repair of fencing is listed as a follow-up action, no further documentation is required. However, if evaluation or altering the remedy is recommended, a recommendation to pursue this change using an Explanation of Significant Difference (ESD) or ROD amendment should be made.

3.5.9 Protectiveness Statement

Protectiveness statements document whether remedies, which were developed during the remedial investigation and finalized in the ROD, are or are not protective of human health and the environment. Separate protectiveness statements for each OU should be made. An additional protectiveness statement covering all of the remedies at the site should also be made. Each statement should be accompanied by a discussion explaining and supporting the protectiveness determination. [Table 3–3](#) provides EPA’s most recent guidance on developing protectiveness statements. Answers to questions listed in this table will require substantive explanation. Refer to the *Comprehensive Five-Year Review Guidance* (EPA 2001) for a discussion of each question and how the determination of protectiveness is made. Key applicable or relevant and appropriate requirements (ARARs), identified by EPA, that should be considered when determining protectiveness, are listed in [Table 3–4](#).

To be consistent with EPA’s recommendation for specific language in protectiveness statements, DOE–GJO will use the language from [Table 3–5](#) for protectiveness statements for individual OUs.

Table 3–3. Three Questions Used to Determine Whether a Remedy is Protective

When you ask...	then you should consider...
<p>Question A: Is the remedy functioning as intended by the decision documents?</p>	<ul style="list-style-type: none"> - performance standards (e.g., cleanup levels, plume containment, pumping rates) are or will likely be met; - there are problems with the remedy that could ultimately lead to the remedy not being protective or suggest protectiveness is at risk (e.g., shrubs or bushes growing on a landfill cover that was designed to have a grass vegetative cover, extent of plume not fully delineated); - access (e.g., fencing, security guards) and institutional controls needed at the particular stage of the remediation are in place and prevent exposure; - other actions (e.g., removals) necessary to ensure that there are no exposure pathways that could result in unacceptable risks have been implemented; and - maintenance activities (e.g., pumping and treating, monitoring slurry walls, mowing cover), as implemented, will maintain the effectiveness of response actions.
<p>Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?</p>	<ul style="list-style-type: none"> - there are changes in standards identified as Applicable or Relevant and Appropriate Requirements (ARARs) in the ROD, newly promulgated standards, and/or changes in to be considered (TBCs) identified in the ROD, that could call into question the protectiveness of the remedy; - there are changes in land use or the anticipated land use on or near the site; - new human health or ecological exposure pathways or receptors have been identified; - new contaminants or contaminant sources have been identified; - there are unanticipated toxic byproducts of the remedy not previously addressed by the decision documents; - there are changes in the physical site conditions; and - there are changes in the toxicity factors for contaminants of concern.
<p>Question C: Has any other information come to light that could call into question the protectiveness of the remedy?</p>	<ul style="list-style-type: none"> - ecological risks have been adequately addressed at the site, and/or there is a plan to address them through a future action; and - the site is/was subject to natural disasters, such as a 100-year flood.

Table 3–4. Key ARARs

Regulatory Requirement	Citation	Repository and Pond 4	Millsite and Government Properties	Soil and Sediment Properties	OU III
Clean Water Act	33 USC 1251-1376 40 CFR Part 131	Yes	Yes	Yes	Yes
National Emission Standards for Radon Emissions from Department of Energy Facilities	40 CFR Part 61 Subpart Q	Yes	No	No	No
Resource Conservation and Recovery Act	40 USC 6901 40 CFR Parts 260-280	Yes	No	No	No
Uranium Mill Tailings Control Act	42 USC 2022 42 USC 7901-7942 40 CFR Part 192.02, 192.12, 192.20(a)(2)&(3), 192.21, and 192.22	Yes	Yes	No	No
Archaeological and Historic Preservation Act	16 USC 469 40 CFR 6.301(c)	No	Yes	No	No
Fish and Wildlife Coordination Act	16 USC 661-666 40 CFR 6.302 (g)	No	No	Yes	Yes
Endangered Species Act	16 USC 1531-1543 50 CFR Parts 17, 402 40 CFR 6.302 (h)	No	No	Yes	Yes
Statement of Procedures on Floodplain Management	40 CFR Part 6 Appendix M	No	Yes	No	No
Procedures for licensing well drillers and water-well drilling standards- standards for drilling, construction, and abandonment of wells	73-3-25, U.C.A. R625-4, U.A.C.	No	Yes	Yes	Yes
Relocation of Natural Streams – procedures and standards governing rechanneling of stream beds.	73-3-29, U.C.A. R625-5 U.A.C.	No	Yes	Yes	Yes
Utah Occupational Safety and Health Standards	Title 35, Chapter 9. U.C.A. R500, U.A.C.	Yes	No	No	No
Definitions for Water Pollution Rules and General Requirements	Title 26, Chapter 11, U.C.A. R448-1. U.A.C.	Yes	Yes	No	No
Standards for Quality for Water of the State	Title 26, Chapter 11, U.C.A. R448-2. U.A.C.	Yes	Yes	Yes	Yes
Ground Water Protection	Title 26, Chapter 11, U.C.A. R448-6. U.A.C.	Yes	Yes	Yes	Yes

Table 3–5. Protectiveness Statements

If the remedial action at the OU is:	then use this statement
under construction and...	
protective or will be protective	“The remedy at OU X is expected to be protective of human health and the environment upon completion, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.”
not protective	“The remedy at OU X is not protective because of the following issue(s) (describe each issue). The following actions need to be taken (describe the actions needed) to ensure protectiveness.”
protectiveness deferred	“A protectiveness determination of the remedy at OU X cannot be made at this time until further information is obtained. Further information will be obtained by taking the following actions (describe the actions). It is expected that these actions will take approximately (insert time frame) to complete, at which time a protectiveness determination will be made.”
operating or completed and...	
protective	“The remedy at OU X is expected to be protective upon completion or is protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.”
protective in the short-term	“The remedy at OU X currently protects human health and the environment because (describe the elements of the remedy that protect human health and the environment in the short term). However, in order for the remedy to be protective in the long-term, the following actions need to be taken (describe the actions needed) to ensure long-term protectiveness.”
not protective	“The remedy at OU X is not protective because of the following issue(s) (describe each issue). The following actions need to be taken (describe the actions needed) to ensure protectiveness.”
protectiveness deferred	“A protectiveness determination of the remedy at OU X cannot be made at this time until further information is obtained. Further information will be obtained by taking the following actions (describe the actions). It is expected that these actions will take approximately (insert time frame) to complete, at which time a protectiveness determination will be made.”

DOE–GJO will use the language from Table 3–6 for the comprehensive protectiveness statement for the MVP site since it has reached construction completion.

Table 3–6. Comprehensive Protectiveness Statements for Sites that have Reached Construction Completion

If the remedy(ies) is/are...	then use this statement
under construction and...	
protective	“Because the remedial actions at all OUs are protective, the site is protective of human health and the environment.”
not protective	“The remedial actions at OUs X and Y are protective. However, because the remedial action at OU Z is not protective, the site is not protective of human health and the environment at this time. The remedial action at OU Z is not protective because of the following issue(s) (describe each issue). The following actions need to be taken (describe the actions needed) to ensure protectiveness.”

3.5.10 Develop Five-Year Review Report

After collecting and evaluating site information, the review team will write a five-year review report. Five-year review reports document the results of the review. Reports summarize deficiencies, recommendations, and follow-up actions and document protectiveness statements.

Reports also provide background information necessary to understand the review analysis and discuss the findings of review activities.

Five-year review reports should be written for the general public as well as for lead and support-agency managers. Therefore, the five-year review report should be written with the assumption that the reader will be someone unfamiliar with the site. The report should clearly present all of the information needed to understand the past activities at the site and the current status of all remedial actions.

Table 3–7 provides the format and summarizes the contents of the five-year review report. The signature page will have concurrence lines to be signed by the Regional Administrator of EPA Region 8, the Director of UDEQ, and the DOE–GJO Project Manager. The chief inspector shall ensure that the report provides the necessary information as shown in the table. This table is consistent with the *Comprehensive Five-Year Review Guidance* (EPA 2001). A detailed description of each section is provided in the guidance document.

Table 3–7. Summary of the Contents of a Five-Year Review Report

<p>General Report Format</p> <ul style="list-style-type: none"> • Title page with signature and date • Completed five-year review summary form • List of documents reviewed • Site maps • List of tables and figures • Interview report (as appropriate) • Site inspection checklist • Photos documenting site conditions <p>Introduction</p> <ul style="list-style-type: none"> • The purpose of the five-year review • Authority for conducting the five-year review • Who conducted the five-year review (DOE is the lead agency) and when <ul style="list-style-type: none"> - Organizations providing analyses in support of the review (e.g., MACTEC–ERS is the contractor supporting the lead agency) - Other review participants or support agencies • Review number (e.g., first, second) • Trigger action and date • Number, description, and status of all operable units at the site <p>Site Chronology</p> <ul style="list-style-type: none"> • List all important site events and relevant dates (e.g., date of initial discovery of problem, dates of pre-NPL responses, date of NPL listing, etc.) <p>Background</p> <ul style="list-style-type: none"> • General site description (e.g., size, topography, and geology) • Former, current, and future land use(s) of the site and surrounding areas • History of contamination • Initial response (e.g., removals) • Basis for taking remedial action (e.g., contaminants)
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Table 3–7 (continued). Summary of the Contents of a Five-Year Review Report

Remedial Actions

- Regulatory actions (e.g., date and description of Records of Decision, Explanations of Significant Difference, Administrative Orders on Consent, Consent Decrees and Action Memorandum)
- Remedial action objectives
- Remedy description
- Remedy implementation (e.g., status, history, enforcement actions, performance)
- Systems operations/Operations & Maintenance
 - Systems operations/O&M requirements
 - Systems operations/O&M operational summary (e.g., history, modifications, problems, and successes)
 - Summary of costs of system operations/O&M effectiveness (i.e., are requirements being met and are activities effective in maintaining the remedy?)

Progress Since Last Five-Year Review (if applicable)

- Protectiveness statements from last review
- Status of recommendations and follow-up actions from last review
- Results of implemented actions, including whether they achieved the intended effect
- Status of any other prior issues

Five-Year Review Process

- Administrative Components
 - Notification of potentially interested parties of initiation of review process
 - Identification of five-year review team members (as appropriate)
 - Outline of components and schedule of the five-year review
- Community Involvement
 - Community notification (prior and post review)
 - Other community involvement activities (e.g., notices, fact sheets, etc., as appropriate)
- Document review
- Data review
- Site inspection
 - Inspection date
 - Inspection participants
 - Site inspection scope and procedures
 - Site inspection results, conclusions
 - Inspection checklist
- Interviews
 - Interview date(s) and location(s)
 - Interview participants (name, title, etc.)
 - Interview documentation
 - Interview summary

Technical Assessment

- Answer Question A: Is the remedy functioning as intended by the decision documents?
 - remedial action performance (i.e., is the remedy operating as designed?)
 - system operations/O&M
 - cost of system operations/O&M
 - opportunities for optimization
 - early indicators of potential issues
 - implementation of institutional controls and other measures

Table 3–7 (continued). Summary of the Contents of a Five-Year Review Report

- Answer Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?
 - changes in standards, newly promulgated standards, TBCs
 - expected progress towards meeting RAOs
 - changes in exposure pathways
 - changes in land use
 - new contaminants and/or contaminant sources
 - remedy byproducts
 - changes in toxicity and other contaminant characteristics
 - risk recalculation/assessment (as applicable)
- Answer Question C: Has any other information come to light that could call into question the protectiveness of the remedy?
 - new or previously unidentified ecological risks
 - natural disaster impacts
 - any other information that could call into question the protectiveness of the remedy
- Technical Assessment Summary

Issues

- Issues identified during the technical assessment and other five-year review activities
- Determination of whether issues affect current or future protectiveness
- A discussion of unresolved issues raised by support agencies and the community (States, Tribes, other Federal agencies, local governments, citizens, PRPs, other interested parties), if applicable

Recommendations and Follow-up Actions

- Required/suggested improvements to identified issues or to current site operations
- Note parties responsible for actions
- Note agency with oversight authority
- Schedule for completion of actions related to resolution of issues

Protectiveness Statements

- Protective statement(s) for each OU (If the remedy is not protective of human health and/or the environment, have you provided supporting discussion and information in the report to make this determination, such as current threats or level of risk?)
- Comprehensive protectiveness statement covering all of the remedies at the site (if applicable)

Next Review

- Expected date of next review
- If five-year reviews will no longer be done, provide a summary of that portion of the technical analysis presented in the report that provides the rationale for discontinuation of five-year reviews

3.5.11 Submittal of Five-Year Review Report

The Contractor Project Manager shall submit the CERCLA five-year review report to the DOE–GJO Project Manager.

The DOE–GJO Project Manager will submit the report to EPA, Region 8, for concurrence by the regional administrator. The DOE–GJO Project Manager will also submit the report to UDEQ for concurrence by the Director, UDEQ. The report will be submitted to EPA and UDEQ in a timely

fashion with an appropriate schedule for review consistent with the Federal Facility Agreement time frames specified for primary documents.

3.6 Training

To conduct the procedures outlined within this section, the Monticello LTSM Representative shall complete:

- RCT Training

To conduct the procedures outlined within this section, the chief inspector and members of the inspection team shall be qualified in their disciplines and complete:

- GRT—GRT is not required of inspection team members if they do not enter manholes or the TSF.

3.7 Records

The following records will be generated by this procedure:

- CERCLA five-year review reports for MVP and MMTS

3.8 References

42 USC 9601, *et seq.* “Comprehensive Environmental Response, Compensation, and Liability Act of 1980,” *United States Code*, January 5, 1999.

42 USC 9604, *et seq.* “Superfund Amendments and Reauthorization Act of 1986,” *United States Code*, January 5, 1999.

U.S. Department of Energy, 2001a. *Monticello Long-Term Surveillance and Maintenance Administrative Manual*, MAC-LMNT 1.1.1, prepared by MACTEC Environmental Restoration Services, LLC for the U.S. Department of Energy Grand Junction Office, Grand Junction, Colorado, December.

———, 2001b. *Long-Term Surveillance and Maintenance Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite*, Volume I, MAC-LMNT-1.1.1-1, prepared by MACTEC Environmental Restoration Services, LLC for the U.S. Department of Energy Grand Junction Office, Grand Junction, Colorado, December.

———, 2001c. *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties*, Volume II, MAC-LMNT 1.1.1-2, prepared by MACTEC Environmental Restoration Services, LLC for the U.S. Department of Energy Grand Junction Office, Grand Junction, Colorado, December.

U.S. Environmental Protection Agency, 2001. *Comprehensive Five-Year Review Guidance*, OSWER Directive 9355.7-03B-P, Office of Emergency and Remedial Response, Washington, D.C., October.

Appendix A

Annual Inspection/Five-Year Review Site Inspection Checklist for DOE-Owned Property

3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency UDEQ

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency City of Monticello

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

4. **Other interviews** (optional) ; Report attached
 (List public interviews and attach interview reports)

III. Onsite Documents and Records Verified (Check all that apply)

1. LTSM Documents

- LTSM Administrative Manual ; Readily available ; Up to date ; N/A
- LTSM Volume I ; Readily available ; Up to date ; N/A
- As-built drawings ; Readily available ; Up to date ; N/A
- Maintenance logs ; Readily available ; Up to date ; N/A

Remarks _____

2. Site-Specific Health and Safety Plan

- ; Readily available ; Up to date ; N/A
- ; Contingency plan/emergency response plan ; Readily available ; Up to date ; N/A

Remarks _____

3. LTSM Training Records

- ; Readily available ; Up to date ; N/A

Remarks _____

4. Monthly Repository Surveillance Checklists

- ; Readily available ; Up to date ; N/A

Remarks _____

5. Quarterly Repository Surveillance Checklists

- ; Readily available ; Up to date ; N/A

Remarks _____

6. Monthly Pond 4 Surveillance Checklists

- ; Readily available ; Up to date ; N/A

Remarks _____

7. Quarterly Pond 4 Surveillance Checklists

- ; Readily available ; Up to date ; N/A

Remarks _____

8. Settlement Monument Records	; Readily available ; Up to date ; N/A
Remarks _____ _____	
9. Repository LCRS and LDS Monitoring Records	; Readily available ; Up to date ; N/A
Remarks _____ _____	
10. Pond 4 LCRS and LDS Monitoring Records	; Readily available ; Up to date ; N/A
Remarks _____ _____	
11. TSF Access/Security Logs	; Readily available ; Up to date ; N/A
Remarks _____ _____	
IV. LTSM Costs	
1. LTSM Organization:	
; State in-house	; Contractor for State
; PRP in-house	; Contractor for PRP
<input checked="" type="checkbox"/> Other: <u>Federal Facility in-house</u>	
2. Unanticipated or Unusually High LTSM Costs During Review Period	
Describe costs and reasons: _____ _____ _____ _____ _____ _____	
V. Access and Institutional Controls	
<input checked="" type="checkbox"/> Applicable ; N/A	
A. Fencing	
1. Fencing damaged	; Location shown on site map ; Gates secured ; N/A
Remarks _____ _____	
B. Other Access Restrictions	
1. Signs and other security measures	; Location shown on site map ; N/A
Remarks _____ _____	

C. General for Repository; Pond 4; Ponds A, B, C; and Adjacent DOE-Owned Property

1. Vandalism/trespassing ; Location shown on site map ; No vandalism evident
Remarks _____

2. Land use changes onsite ; N/A
Remarks _____

3. Land use changes offsite ; N/A
Remarks _____

VI. General Site Conditions

A. Roads Applicable ; N/A

1. Road on top of Repository
Road damaged ; Location shown on site map ; Roads adequate ; N/A
Remarks _____

2. Other Roads
Roads damaged ; Location shown on site map ; Roads adequate ; N/A
Remarks _____

B. Other Site Conditions

Remarks _____

VII. Repository Cover Applicable ; N/A

A. Repository Surface

1. Settlement (Low spots) ; Location shown on site map ; Settlement not evident
Areal extent _____ Depth _____
Remarks _____

2. Cracks	; Location shown on site map	; Cracking not evident
	Lengths _____	Widths _____
		Depths _____
	Remarks _____	

3. Erosion	; Location shown on site map	; Erosion not evident
	Areal extent _____	Depth _____
	Remarks _____	

4. Holes/Burrows/Biointrusion	; Location shown on site map	; Holes not evident
	Areal extent _____	Depth _____
	Remarks _____	

5. Vegetative Cover	; Grass	; Cover properly established
		; No signs of stress
	; Trees/Shrubs (indicate size and locations on a diagram)	
	Remarks _____	

6. Alternative Cover (armored rock/rip-rap, etc.)		; N/A
	Remarks _____	

7. Bulges	; Location shown on site map	; Bulges not evident
	Areal extent _____	Height _____
	Remarks _____	

8. Wet Areas/Water Damage	; Wet areas/water damage not evident	
	; Wet areas	; Location shown on site map
		Areal extent _____
	; Ponding	; Location shown on site map
		Areal extent _____
	; Seeps	; Location shown on site map
		Areal extent _____
	; Soft subgrade	; Location shown on site map
		Areal extent _____
	Remarks _____	

9. Slope Instability	; Slides	; Location shown on site map
		; No evidence of slope instability
	Areal extent _____	
	Remarks _____	

B. Drainage and Toe Trenches		<input checked="" type="checkbox"/> Applicable	; N/A
1. Settlement	; Location shown on site map	; No evidence of settlement	
Areal extent _____		Depth _____	
Remarks _____			

2. Material Degradation	; Location shown on site map	; No evidence of degradation	
Material type _____		Areal extent _____	
Remarks _____			

3. Erosion	; Location shown on site map	; No evidence of erosion	
Areal extent _____		Depth _____	
Remarks _____			

4. Siltation	; Location shown on site map	; Siltation not evident	
Areal extent _____		Depth _____	
Remarks _____			

5. Undercutting	; Location shown on site map	; No evidence of undercutting	
Areal extent _____		Depth _____	
Remarks _____			

6. Obstructions	Type _____	; No obstructions	
; Location shown on site map		Areal extent _____	
Size _____			
Remarks _____			

7. Excessive Vegetative Growth	Type _____		
; No evidence of excessive growth			
; Vegetation in channels does not obstruct flow			
; Location shown on site map		Areal extent _____	
Remarks _____			

C. Cover Penetrations	<input checked="" type="checkbox"/> Applicable				; N/A
1. Manholes					
	; Properly secured/locked	; Functioning	; Routinely sampled		; Good condition
	; Evidence of leakage	; Needs O&M			; N/A
Remarks	_____				

2. LCR Video Ports					
	; Properly secured/locked	; Functioning	; Routinely sampled		; Good condition
	; Evidence of leakage or penetration		; Needs O&M		; N/A
Remarks	_____				

3. Lysimeter Facilities (within surface area of landfill)					
	; Properly secured/locked	; Functioning	; Routinely sampled		; Good condition
	; Evidence of leakage at penetration		; Needs O&M		; N/A
Remarks	_____				

4. LCRS and LDS System					
	; Properly secured/locked	; Functioning	; Routinely sampled		; Good condition
	; Evidence of leakage at penetration		; Needs O&M		; N/A
Remarks	_____				

5. LCRS and LDS Pumps, Plumbing, and Electrical					
	; Good condition	; Needs O&M			; N/A
Remarks	_____				

6. LCRS and LDS System Pipelines, Valves, Valve Boxes, and Other Appurtenances					
	; Good condition	; Needs O&M			
Remarks	_____				

7. LCRS and LDS Parts and Equipment					
	; Readily available	; Good condition	; Requires upgrade		; Needs to be provided
Remarks	_____				

8. Settlement Monuments	; Located		; Routinely Surveyed		; N/A
Remarks	_____				

D. Pond 4		;	Applicable	;	N/A	
1. Erosion	Areal extent _____	Depth _____				
; Erosion not evident						
Remarks _____						

2. Siltation	Areal extent _____	Depth _____	;	N/A		
; Siltation not evident						
Remarks _____						

3. Vandalism (especially damage to liner)						
; Location shown on map ; No vandalism evident						
Remarks _____						

4. Fencing damaged	;	Location shown on site map	;	Gates secured	;	N/A
Remarks _____						

5. Liner	;	Holes/cracks	;	Location shown on site map		
; No evidence of leakage						
Remarks _____						

6. LCRS and LDS Pumps, Plumbing, and Electrical						
; Good condition ; Needs O&M ; N/A						
Remarks _____						

7. Life Saver Station						
; Emergency equipment readily available						
; Emergency equipment in acceptable condition						
8. Holes/Burrows/Biointrusion	;	Location shown on site map	;	Holes not evident		
Areal extent _____	Depth _____					
Remarks _____						

E. Perimeter Ditches/Off-Site Discharge						
; Applicable ; N/A						
1. Erosion	;	Location shown on site map	;	Erosion not evident		
Areal extent _____	Depth _____					
Remarks _____						

2. Siltation	; Location shown on site map	; Siltation not evident	
	Areal extent _____	Depth _____	
	Remarks _____		
<hr/>			
F. Sedimentation Pond A	<input checked="" type="checkbox"/> Applicable	; N/A	
1. Siltation	Areal extent _____	Depth _____	; N/A
	; Siltation not evident		
	Remarks _____		
<hr/>			
2. Erosion	Areal extent _____	Depth _____	
	; Erosion not evident		
	Remarks _____		
<hr/>			
3. Outlet Works	; Functioning	; N/A	
	Remarks _____		
<hr/>			
4. Dam	; Functioning	; N/A	
	Remarks _____		
<hr/>			
5. Vegetative Growth	; Location shown on site map	; N/A	
	; Vegetation does not impede flow		
	Areal extent _____	Type _____	
	Remarks _____		
<hr/>			
G. Sedimentation Pond B	<input checked="" type="checkbox"/> Applicable	; N/A	
1. Siltation	Areal extent _____	Depth _____	; N/A
	; Siltation not evident		
	Remarks _____		
<hr/>			
2. Erosion	Areal extent _____	Depth _____	
	; Erosion not evident		
	Remarks _____		
<hr/>			
3. Outlet Works	; Functioning	; N/A	
	Remarks _____		
<hr/>			

4. Dam	; Functioning	; N/A	Remarks _____ _____
5. Vegetative Growth	; Location shown on site map	; N/A	; Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____ _____
H. Sedimentation Pond C			
	<input checked="" type="checkbox"/> Applicable	; N/A	
1. Siltation	Areal extent _____	Depth _____	; N/A ; Siltation not evident Remarks _____ _____
2. Erosion	Areal extent _____	Depth _____	; Erosion not evident Remarks _____ _____
3. Outlet Works	; Functioning	; N/A	Remarks _____ _____
4. Dam	; Functioning	; N/A	Remarks _____ _____
5. Vegetative Growth	; Location shown on site map	; N/A	; Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____ _____

VIII. Overall Observations

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

B. Adequacy of LTSM

Describe issues and observations related to the implementation and scope of LTSM procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

C. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of LTSM or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Appendix B

Annual Inspection/Five-Year Review Site Inspection Checklist for Non-DOE Owned Property

Annual Inspection/Five-Year Review Site Inspection Checklist for Non-DOE Owned Supplemental Standards Properties

(Working document for site inspection. Information may be completed by hand and attached to the five-year review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. Site Information				
Site name: Monticello Vicinity Properties	Date of inspection:			
Location and Region: Monticello, Utah: EPA Region 8	EPA ID: UTD 980667208			
Agency, office, or company leading the five-year review: U.S. Department of Energy	Weather/temperature:			
Remedy Includes: (Check all that apply) <ul style="list-style-type: none"> ; Landfill cover/containment ; Access controls <input checked="" type="checkbox"/> Institutional controls ; Ground water pump and treatment ; Surface water collection and treatment ; Other: _____ 				
Attachments: ; Inspection team roster attached ; Site map attached				
II. Interviews (Check all that apply)				
1. LTSM Representative _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center; border: none;">Name</td> <td style="width: 30%; text-align: center; border: none;">Title</td> <td style="width: 30%; text-align: center; border: none;">Date</td> </tr> </table> <p style="padding-left: 20px;">Interviewed ; at site ; at office ; by phone Phone no. _____</p> <p style="padding-left: 20px;">Problems; suggestions; ; Report attached _____</p> <p style="padding-left: 20px;">_____</p> <p style="padding-left: 20px;">_____</p>		Name	Title	Date
Name	Title	Date		
2. LTSM Representative _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center; border: none;">Name</td> <td style="width: 30%; text-align: center; border: none;">Title</td> <td style="width: 30%; text-align: center; border: none;">Date</td> </tr> </table> <p style="padding-left: 20px;">Interviewed ; at site ; at office ; by phone Phone no. _____</p> <p style="padding-left: 20px;">Problems; suggestions; ; Report attached _____</p> <p style="padding-left: 20px;">_____</p> <p style="padding-left: 20px;">_____</p>		Name	Title	Date
Name	Title	Date		

3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency UDEQ

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency City of Monticello

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

4. **Other interviews** (optional) ; Report attached
(List public interviews and attach interview reports)

III. Onsite Documents and Records Verified (Check all that apply)

1. LTSM Documents

- LTSM Administrative Manual ; Readily available ; Up to date ; N/A
- LTSM Operating Procedure Volume II ; Readily available ; Up to date ; N/A
- As-built drawings ; Readily available ; Up to date ; N/A
- Maintenance logs ; Readily available ; Up to date ; N/A

Remarks _____

2. LTSM Training Records ; Readily available ; Up to date ; N/A

Remarks _____

3. Agreements

Cooperative Agreement DE-FC13-99GJ79485 ; Readily available ; Up to date ; N/A

Remarks _____

5. City Streets and Utilities Record Book ; Readily available ; Up to date ; N/A

Remarks _____

6. Highways 191 and 666 Record Book ; Readily available ; Up to date ; N/A

Remarks _____

7. MS-00176-VL Record Book ; Readily available ; Up to date ; N/A

Remarks _____

IV. LTSM Costs

1. LTSM Organization:

; State in-house ; Contractor for State
; PRP in-house ; Contractor for PRP
 Other: Federal Facility in-house

2. Unanticipated or Unusually High LTSM Costs During Review Period

Describe costs and reasons: _____

V. Access and Institutional Controls Applicable ; N/A

A. Fencing

1. Fencing damaged ; Location shown on site map ; Gates secured N/A

Remarks _____

B. Institutional Controls (ICs)

1. Implementation and Enforcement at City Streets and Utilities

ICs include radiological scanning of eroded material, radiological scanning of all excavations, and removal of radioactive material.

Site conditions imply ICs not properly implemented ; Yes ; No ; N/A
Site conditions imply ICs not being fully enforced ; Yes ; No ; N/A

Type of monitoring (e.g., self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____
Name Title Date Phone No,

Reporting is up-to-date	;	Yes	;	No	;	N/A
Reports are verified by the lead agency	;	Yes	;	No	;	N/A
Specific requirements in deed or decision documents have been met	;	Yes	;	No	;	N/A
Violations have been reported	;	Yes	;	No	;	N/A
Other problems or suggestions: ; Report attached						
<hr/>						
<hr/>						
<hr/>						
<hr/>						
Adequacy	;	ICs are adequate	;	ICs are inadequate	;	N/A
Remarks _____						

2. Implementation and Enforcement at Highways 191 and 666

ICs include radiological scanning of eroded material, radiological scanning of all excavations. Radioactive material may be used for backfill or removed.

Site conditions imply ICs not properly implemented	;	Yes	;	No	;	N/A
Site conditions imply ICs not being fully enforced	;	Yes	;	No	;	N/A

Type of monitoring (e.g., self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____

Name	Title	Date	Phone No.
------	-------	------	-----------

Reporting is up-to-date	;	Yes	;	No	;	N/A
Reports are verified by the lead agency	;	Yes	;	No	;	N/A

Specific requirements in deed or decision documents have been met	;	Yes	;	No	;	N/A
Violations have been reported	;	Yes	;	No	;	N/A
Other problems or suggestions: ; Report attached						
<hr/>						
<hr/>						
<hr/>						

Adequacy ; ICs are adequate ; ICs are inadequate ; N/A

Remarks _____

3. Implementation and Enforcement at MS-00176-VL

ICs include radiological scanning of the footprint of new habitable structures and eroded material. Radiological material is removed.

Site conditions imply ICs not properly implemented ; Yes ; No ; N/A
Site conditions imply ICs not being fully enforced ; Yes ; No ; N/A

Type of monitoring (e.g., self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____
Name Title Date Phone No,

Reporting is up-to-date ; Yes ; No ; N/A
Reports are verified by the lead agency ; Yes ; No ; N/A

Specific requirements in deed or decision documents
have been met ; Yes ; No ; N/A

Violations have been reported ; Yes ; No ; N/A

Other problems or suggestions: ; Report attached

Adequacy ; ICs are adequate ; ICs are inadequate ; N/A

Remarks _____

C. General

1. Vandalism ; Location shown on site map ; No vandalism evident

Remarks _____

2. Land use changes onsite ; N/A

Remarks _____

3. Land use changes offsite ; N/A

Remarks _____

VI. General Site Conditions

A. Roads ; Applicable ; N/A

1. Roads under Construction

; LTSM Representative aware of all excavations
; Location shown on site map ; Radiological scanning conducted

Remarks _____

2. Erosion ; Location shown on site map ; Erosion not evident

Areal extent _____ Depth _____

Remarks _____

B. Other Site Conditions

Remarks _____

VII. Overall Observations

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

B. Adequacy of LTSM

Describe issues and observations related to the implementation and scope of LTSM procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

C. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of LTSM or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Appendix C

Annual Inspection/Five-Year Review Site Inspection Checklist for Government-Owned Piñon/Juniper Properties and the Former Millsite

Annual Inspection/Five-Year Review Site Inspection Checklist for Government-Owned Piñon/Juniper Properties and the Former Millsite

(Working document for site inspection. Information may be completed by hand and attached to the five-year review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. Site Information	
Site name: Monticello Mill Tailings Site	Date of inspection:
Location and Region: Monticello, Utah: EPA Region 8	EPA ID: UT 3890090035
Agency, office, or company leading the five-year review: U.S. Department of Energy	Weather/temperature:
Remedy Includes: (Check all that apply) ; Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls ; Ground water pump and treatment ; Surface water collection and treatment ; Other: _____	
Attachments: ; Inspection team roster attached ; Site map attached	
II. Interviews (Check all that apply)	
1. LTSM Representative _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date </div> Interviewed ; at site ; at office ; by phone Phone no. _____ Problems; suggestions; ; Report attached _____ _____ _____	
2. LTSM Representative _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date </div> Interviewed ; at site ; at office ; by phone Phone no. _____ Problems; suggestions; ; Report attached _____ _____ _____	

3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency UDEQ

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency City of Monticello

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

4. **Other interviews** (optional) ; Report attached
(List public interviews and attach interview reports)

III. Onsite Documents and Records Verified (Check all that apply)

1. LTSM Documents

- LTSM Administrative Manual ; Readily available ; Up to date ; N/A
- LTSM Operating Procedure Volume I ; Readily available ; Up to date ; N/A
- LTSM Operating Procedure Volume II ; Readily available ; Up to date ; N/A
- As-built drawings ; Readily available ; Up to date ; N/A
- Maintenance logs ; Readily available ; Up to date ; N/A

Remarks _____

2. LTSM Documents

- ; LTSM Administrative Manual ; Readily available ; Up to date ; N/A
- ; LTSM Operating Procedure Volume I ; Readily available ; Up to date ; N/A
- ; LTSM Operating Procedure Volume II ; Readily available ; Up to date ; N/A
- ; As-built drawings ; Readily available ; Up to date ; N/A
- ; Maintenance logs ; Readily available ; Up to date ; N/A

Remarks _____

3. LTSM Training Records ; Readily available ; Up to date ; N/A

Remarks _____

4. Agreements

- Cooperative Agreement DE-FC13-99GJ79485 ; Readily available ; Up to date ; N/A

Remarks _____

5. Government-Owned P/J Properties Record Book ; Readily available ; Up to date ; N/A

Remarks _____

6. LTSM Repository Record Book ; Readily available ; Up to date ; N/A
(includes millsite activities)

Remarks _____

IV. LTSM Costs

1. LTSM Organization:

- State in-house ; Contractor for State
 PRP in-house ; Contractor for PRP
 Other: Federal Facility in-house

2. Unanticipated or Unusually High LTSM Costs During Review Period

Describe costs and reasons: _____

V. Access and Institutional Controls ; Applicable ; N/A

A. Fencing

- 1. Fencing damaged ; Location shown on site map ; Gates secured ; N/A**

Remarks _____

B. Other Access Restrictions

- 1. Signs and other security measures ; Location shown on site map ; N/A**

Remarks _____

C. Institutional Controls

1. Implementation and enforcement at Government-Owned Piñon/Juniper Properties and the Former Millsite

ICs include the following:

- Public Access
- Recreational Use
- No overnight camping
- No habitable structures
- No damage caused by man to wetland areas

Site conditions imply ICs not properly implemented ; Yes ; No ; N/A
 Site conditions imply ICs not being fully enforced ; Yes ; No ; N/A

Type of monitoring (e.g., self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____
 Name Title Date Phone No,

Reporting is up-to-date ; Yes ; No ; N/A
Reports are verified by the lead agency ; Yes ; No ; N/A

Specific requirements in deed or decision documents
have been met ; Yes ; No ; N/A
Violations have been reported ; Yes ; No ; N/A
Other problems or suggestions: ; Report attached

Adequacy ; ICs are adequate ; ICs are inadequate ; N/A

Remarks _____

2. Additional Implementation and Enforcement of Prohibition on Removal of Soil

ICs prohibiting soil removal are in effect for the following properties.

- MP-00391
- MP-01077
- MS-01041
- MS-01042

Site conditions imply ICs not properly implemented ; Yes ; No ; N/A
Site conditions imply ICs not being fully enforced ; Yes ; No ; N/A

Type of monitoring (e.g., self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____

Name	Title	Date	Phone No.
------	-------	------	-----------

Reporting is up-to-date ; Yes ; No ; N/A
Reports are verified by the lead agency ; Yes ; No ; N/A

Specific requirements in deed or decision documents
have been met ; Yes ; No ; N/A
Violations have been reported ; Yes ; No ; N/A
Other problems or suggestions: ; Report attached

Adequacy ; ICs are adequate ; ICs are inadequate ; N/A

Remarks _____

3. Additional Implementation and Enforcement of Ground Water Usage Restrictions

ICs prohibit installation of water wells in the shallow alluvial aquifers at the following properties:

- MP-00181
- MP-00893
- MS-01040 (north portion)
- MP-00391
- MP-01077

Site conditions imply ICs not properly implemented ; Yes ; No ; N/A
 Site conditions imply ICs not being fully enforced ; Yes ; No ; N/A

Type of monitoring (e.g., self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____	_____	_____	_____	_____
	Name	Title	Date	Phone No.

Reporting is up-to-date ; Yes ; No ; N/A
 Reports are verified by the lead agency ; Yes ; No ; N/A

Specific requirements in deed or decision documents
 have been met ; Yes ; No ; N/A
 Violations have been reported ; Yes ; No ; N/A
 Other problems or suggestions: ; Report attached

Adequacy ; ICs are adequate ; ICs are inadequate ; N/A

Remarks _____

D. General

1. Vandalism ; Location shown on site map ; No vandalism evident

Remarks _____

2. Land use changes onsite ; N/A

Remarks _____

3. Land use changes offsite ; N/A

Remarks _____

VI. General Site Conditions

A. Roads ; Applicable ; N/A

1. Roads damaged ; Location shown on site map ; Roads adequate ; N/A

Remarks _____

B. Other Site Conditions

Remarks _____

VII. Overall Observations

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

B. Adequacy of LTSM

Describe issues and observations related to the implementation and scope of LTSM procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

C. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of LTSM or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Appendix D

Annual Inspection/Five-Year Review Site Inspection Checklist for OU II Soil and Sediment Properties

Annual Inspection/Five-Year Review Site Inspection Checklist for OU II Soil and Sediment Properties

(Working document for site inspection. Information may be completed by hand and attached to the five-year review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. Site Information				
Site name: Monticello Mill Tailings Site	Date of inspection:			
Location and Region: Monticello, Utah: EPA Region 8	EPA ID: UT 3890090035			
Agency, office, or company leading the five-year review: U.S. Department of Energy	Weather/temperature:			
Remedy Includes: (Check all that apply) <ul style="list-style-type: none"> ; Landfill cover/containment ; Access controls <input checked="" type="checkbox"/> Institutional controls ; Ground water pump and treatment ; Surface water collection and treatment ; Other: _____ 				
Attachments: ; Inspection team roster attached ; Site map attached				
II. Interviews (Check all that apply)				
1. LTSM Representative _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 30%; text-align: center;">Date</td> </tr> </table> Interviewed ; at site ; at office ; by phone Phone no. _____ Problems; suggestions; ; Report attached _____ _____ _____		Name	Title	Date
Name	Title	Date		
2. LTSM Representative _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 30%; text-align: center;">Date</td> </tr> </table> Interviewed ; at site ; at office ; by phone Phone no. _____ Problems; suggestions; ; Report attached _____ _____ _____		Name	Title	Date
Name	Title	Date		

3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency UDEQ

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency City of Monticello

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

Agency _____

Contact _____
Name Title Date Phone No.

Problems; suggestions; ; Report attached _____

4. **Other interviews** (optional) ; Report attached
 (List public interviews and attach interview reports)

III. Onsite Documents and Records Verified (Check all that apply)

1. LTSM Documents

- LTSM Administrative Manual ; Readily available ; Up to date ; N/A
- LTSM Operating Procedure Volume II ; Readily available ; Up to date ; N/A
- ; As-built drawings ; Readily available ; Up to date ; N/A
- ; Maintenance logs ; Readily available ; Up to date ; N/A

Remarks _____

2. Site-Specific Health and Safety Plan

- ; Readily available ; Up to date ; N/A
- ; Contingency plan/emergency response plan ; Readily available ; Up to date ; N/A

Remarks _____

3. LTSM Training Records

- ; Readily available ; Up to date ; N/A

Remarks _____

4. OU II Soils and Sediments Record Book

- ; Readily available ; Up to date ; N/A

Remarks _____

IV. LTSM Costs

1. LTSM Organization:

- ; State in-house ; Contractor for State
- ; PRP in-house ; Contractor for PRP
- Other: Federal Facility in-house _____

Reporting is up-to-date	:	Yes	:	No	:	N/A
Reports are verified by the lead agency	:	Yes	:	No	:	N/A
Specific requirements in deed or decision documents have been met	:	Yes	:	No	:	N/A
Violations have been reported	:	Yes	:	No	:	N/A
Other problems or suggestions: ; Report attached						

Adequacy	:	ICs are adequate	:	ICs are inadequate	:	N/A
Remarks _____						

VI. General Site Conditions

A. Contaminated Areas	<input checked="" type="checkbox"/>	Applicable	:	N/A
1. Erosion	:	Location shown on site map	:	Erosion not evident
Areal extent _____		Depth _____		
Remarks _____				

B. Other Site Conditions

Remarks _____

VII. Overall Observations

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

B. Adequacy of LTSM

Describe issues and observations related to the implementation and scope of LTSM procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

C. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of LTSM or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.
