

## 1.0 Introduction

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for implementing the final response action selected in the *Final Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit* (CAD/ROD) (DOE 2006a) issued September 29, 2006, for the Rocky Flats Site (Site). Prior to the CAD/ROD, cleanup and closure activities were completed in accordance with the requirements of the *Rocky Flats Cleanup Agreement* (RFCA) (CDPHE et al. 1996). Under the CAD/ROD, two Operable Units (OUs) were established within the boundaries of the Rocky Flats property: the Peripheral OU (POU) and the Central OU (COU). The COU consolidates all areas of the Site that require additional remedial or corrective actions while also considering practicalities of future land management. The POU includes the remaining, generally unimpacted portions of the Site and surrounds the COU. The response action in the Final CAD/ROD is no action for the POU and institutional and physical controls with continued monitoring for the COU. The Off-Site Areas at Rocky Flats, known as OU 3, were addressed under a separate no-action CAD/ROD dated June 3, 1997.

The CAD/RODs for OU 3 and the POU determined that conditions in those OUs were suitable for unrestricted use. As a result, the U.S. Environmental Protection Agency (EPA) published a Notice of Intent for Partial Deletion (NOID) of the Rocky Flats Site (Plant) from the National Priorities List (NPL) on March 13, 2007 (*72 Federal Register* [FR] 11313, March 13, 2007) to delete the POU and OU 3 from the NPL. The NOID was based on the results of the remedial investigations leading to the CAD/ROD no-action remedies being selected for these OUs. The NOID states that because no hazardous substances occur in the OUs above levels that allow for unlimited use and unrestricted exposure, no 5-year review was required for these OUs. EPA subsequently published a Notice of Partial Deletion from the NPL for the POU and OU 3 on May 25, 2007 (*72 FR* 29276, May 25, 2007).

On July 12, 2007, most of the property outside the COU was transferred to the U.S. Department of the Interior for establishment of a national wildlife refuge managed by the U.S. Fish and Wildlife Service (USFWS). EPA certified that cleanup and closure of Rocky Flats was complete and that the COU remedy was operating properly and successfully, in accordance with requirements for DOE to transfer land to USFWS for establishing the refuge. DOE retained the COU and is responsible for implementing the CAD/ROD final response action and for ensuring that it remains protective of human health and the environment. The monitoring, surveillance, and maintenance activities for which quarterly, annual, and 5-year review reports are issued are included in the *Rocky Flats Legacy Management Agreement* (RFLMA) (DOE 2007a).

RFLMA, signed March 14, 2007, superseded RFCA. RFLMA is a Federal Facility Agreement and Consent Order under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and the Colorado Hazardous Waste Act, between DOE, EPA Region 8, and the Colorado Department of Public Health and Environment (CDPHE). The purpose of RFLMA is to establish the regulatory framework for Attachment 2, “Legacy Management Requirements.”

RFLMA Attachment 2, Section 7.0, requires DOE to provide reports pertaining to the surveillance and maintenance of the remedy prescribed in the CAD/ROD on a calendar quarter and annual basis. The fourth quarterly report information is to be included in the annual report.

RFLMA Attachment 2, Section 7.2, specifies that the annual reports may include a summary for the previous quarter and that the following will be included in annual reports:

- A discussion of surface-water monitoring data;
- A discussion of groundwater monitoring data;
- A discussion of groundwater treatment system monitoring data;
- A discussion of ecological sampling data;
- Adverse biological conditions;
- A summary of actions taken in response to reportable conditions;
- A summary of maintenance and repairs;
- Inspection reports;
- Verification of the Environmental Covenant and evaluation of the effectiveness of institutional controls (ICs);
- The Original Landfill (OLF) Monitoring Report (see Table 3 and Section 6.1 of the *Final Landfill Monitoring and Maintenance Plan, Rocky Flats Environmental Technology Site, Original Landfill* [OLF M&M Plan] [DOE 2009a]);
- The Present Landfill (PLF) Monitoring Report (see Table 3 and Section 6.1 of the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, U.S. Department of Energy Rocky Flats Site* (PLF M&M Plan) [DOE 2008a]);
- Assessments of analytical data, including laboratory audits; and
- Other conditions or actions taken that are pertinent to the continued effectiveness of the remedy.

This calendar year (CY) 2010 annual report contains the summary for the fourth quarter of CY 2010.

LM prepared the *Rocky Flats Site Operations Guide* (RFSOG) (DOE 2011a) as a document to guide work at the Site. The RFSOG provides details on the surveillance and maintenance needed to satisfy the requirements of the CAD/ROD as well as best management practices (BMPs) at the Site. As a “desktop procedure,” the RFSOG explains how DOE will fulfill its long-term surveillance and maintenance obligations at the Site.

While the specific BMPs are not subject to regulation under RFLMA, this annual report includes a discussion of activities related to implementing BMPs to document the information for future reference and for a perspective of the work conducted over the year.

## **1.1 Purpose and Scope**

The purpose of this report is to inform the regulatory agencies and stakeholders of the surveillance, monitoring, and maintenance activities being conducted at the Site. LM provides periodic communications such as this report and communicates through other means such as Web-based tools and public meetings.

This annual report focuses on routine surveillance, maintenance, and monitoring activities that were conducted during CY 2010 and, as stated previously, also includes information for the fourth quarter of CY 2010. Topics covered include Site operations and maintenance (Section 2.0) and environmental monitoring, including water, air, and ecological monitoring (Section 3.0). Data management, data validation, and an assessment of data quality are also included in Section 3.0. References cited in this report are included in Section 4.0.

Supporting information is provided in a series of appendixes. Appendix A provides the hydrologic data; Appendix B provides the water quality data. The fourth quarter of CY 2010 landfill inspection forms for the PLF and OLF are included in Appendix C. RFLMA and RFSOG data evaluation flowcharts that were used are provided in Appendix D. Appendix E contains the *Technical Memorandum Regarding Instrumentation and Monitoring at the Rocky Flats OLF*. Appendix F presents the *Original Landfill Data Summary and Evaluation Report* regarding the evaluation of data from soil sampling at the OLF during 2010. Appendix G contains the RFLMA contact records issued during CY 2010.

## 1.2 Background

Surveillance, maintenance, and monitoring activities are conducted according to RFLMA. RFLMA incorporates the following plans:

- The OLF O&M Plan (DOE 2009a); and
- The PLF M&M (DOE 2008a).

RFLMA Attachment 2 stipulates that DOE employ administrative procedures to control activities in accordance with the ICs and to meet quality assurance and quality control program requirements. Other Site procedures are established to guide work and implement BMPs. These procedures are referenced in the RFSOG and include:

- The *Operations and Maintenance Plan for Rocky Flats Surface Water Control Project* (DOE 2010a);
- The *Operations and Maintenance Manual for the Rocky Flats Groundwater Treatment Systems* (DOE 2010b);
- The *Rocky Flats, Colorado, Site Revegetation Plan* (DOE 2009b);
- The *Erosion Control Plan for the Rocky Flats Property Central Operable Unit* (DOE 2007b);
- The *Rocky Flats, Colorado, Site Vegetation Management Plan* (DOE 2009c);
- The *Ecological Monitoring Methods Handbook for the Rocky Flats, Colorado, Site* (DOE 2008b); and
- The *Legacy Management CERCLA Sites Quality Assurance Project Plan* (LMS/PLN/S04353).

## 1.3 RFLMA Contact Records

This section provides a summary of the status of activities addressed by RFLMA contact records issued during 2010. RFLMA references the use of contact records to document CDPHE oral

approvals of field modifications to implement approved response actions (see RFLMA paragraph 34). RFLMA Attachment 2 also references the use of contact records to document the outcome of consultation related to addressing any reportable conditions (see RFLMA Attachment 2, Section 6.0). Finally, the *Rocky Flats Site Legacy Management Public Involvement Plan* (PIP), in RFLMA Appendix 2, also provides that a contact record of consultative process discussions between the RFLMA parties will be made available to the Rocky Flats Stewardship Council and other interested stakeholders as early in the process as is practicable following signature approval by the parties. The PIP process to make contact records available is implemented by posting contact records on the Rocky Flats public website and by promptly notifying stakeholders (by e-mail) that the contact record is posted.

The RFLMA parties agreed, as documented in RFLMA Contact Record 2007-08, that DOE will document the status of actions or activities in RFLMA contact records from time to time and will include the documentation in RFLMA quarterly and/or annual surveillance and maintenance reports for tracking purposes. The RFLMA parties also agreed that to facilitate the status reporting, contact records should include a short discussion of the anticipated actions or activities to close out the RFLMA contact record. Thus, RFLMA Contact Record 2007-08 and subsequent contact records will include the closeout discussion.

Under certain situations, activities previously approved in a Contact Record that has been closed out will need to be performed. A simple notification and approval process has been developed for these situations, which is documented in RFLMA Contact Record 2009-05. CDPHE may receive notification of and approve the activities over the phone or in person, with e-mail follow-ups. The notification and approval of such work shall be reported in the next RFLMA annual report, in relation to the Contact Record that originally covered the work. This protocol is consistent with RFLMA paragraph 34.

Table 1 lists the RFLMA contact records issued in 2010 and their status at the end of 2010. The table also lists contact records that were issued from 2007 to 2009, which were discussed in the 2009 Annual Report that were not closed by the end of 2009, and indicates their status at the end of 2010. The table also lists e-mail approval of activities previously covered by closed out contact records. Appendix G contains copies of the 2010 contact records.

## **1.4 RFLMA Modification Requests**

A proposed modification to RFLMA Attachment 2 was released by the RFLMA Parties for public review and comment on July 20, 2010. The proposed modification establishes new surface water Point of Compliance (POC) monitoring locations in Walnut Creek and Woman Creek that will replace the existing POCs within the Central Operable Unit (COU) when DOE completes installation of flumes and monitoring equipment at the new POC locations. The proposed modification is discussed in Contact Record 2010-04 in Appendix G.

The public comment period ended on October 19, 2010. Several public meetings with stakeholders to discuss the proposed modification were also held by the RFLMA Parties during the public comment period. At the end of 2010, the RFLMA Parties were continuing to consider the written comments received. Any resulting modification is subject to approval by CDPHE and EPA.

Table 1. Status of RFLMA Contact Records

Contact Record No.	Purpose	Approval Date	Status as of December 31, 2009
2010-01	Targeted soil sampling at the Original Landfill (OLF) to evaluate residual contamination levels in relation to the Colorado Department of Public Health and Environment's (CDPHE's) August 2008 Policy, <i>End of Post-Closure Care</i>	1/20/10	Actions completed—closed
2010-02	Approval of Excavation Greater Than 3 Feet Below Grade to Breach Dams A-3, A-4, B-5, C-2 and the Present Landfill Dam.	4/15/10 Withdrawn 10/15/10	CDPHE withdrew approval to allow for further consideration of concerns raised by communities and for possible clarification of institutional control #2 (regarding soil excavation deeper than 3 feet) before potential reconsideration of the contact record.
2010-03	Non-Rocky Flats Legacy Management Agreement (RFLMA) Surface Water Monitoring Project for North and South Walnut Creeks	3/15/10	Contact record will be closed after completion of the non-RFLMA sampling project described herein. After this Contact Record is closed out, additional non-RFLMA sampling activities may be performed, and CDPHE will be kept apprised of the additional sampling through the consultative process.
2010-04	Rocky Flats Legacy Management Agreement Attachment 2: Modification to Revise Monitoring Points	7/15/10	Contact record will be closed when the RFLMA modification is completed and the as-built drawings are completed for the flume construction work
2010-05	Statistically Higher Concentrations of Analytes in Groundwater Downgradient of the Original Landfill (OLF) and Present Landfill (PLF)	5/10/10	Actions completed—closed
2010-06	Monitoring Results at Surface Water Point of Evaluation (POE) SW027	7/27/10	Actions completed—closed
2010-07	Monitoring Results and Water Treatment at the MSPTS and ETPTS	11/2/10	Actions completed—closed
2009-01	Phase II and III Upgrades to Solar Ponds Plume Treatment System	2/17/09	Construction and post-construction revegetation and erosion controls are in place. Optimization of the upgrades and monitoring is ongoing. Contact record will be closed when testing complete and as-built drawings completed.
	E-mail approval—application of chlorine bleach to address biofouling in Cell 1	3/31/10	Actions completed—closed
2009-02	Excavation by Xcel Energy for Valve Replacement on 12-inch Golden Pipeline	6/29/09	Actions completed—closed in 2009
	E-mail approval—excavation by Xcel to investigate anomaly in pipeline	3/10/10	Actions completed—closed
2008-05	Boron and uranium in groundwater downgradient of the Original Landfill	7/9/08	Actions completed—closed
2008-06	Management of intercepted groundwater during SPPTS repair or maintenance activities	7/9/08	Actions continuing
2007-06	Evaluation of elevated nitrate in groundwater samples from Area of Concern well B206989	10/16/07	Continuing monitoring and evaluation

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