OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION

QUALITY ASSURANCE SURVEILLANCE REPORT OF

CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM

MANAGEMENT AND OPERATING CONTRACTOR

QUALITY RECORDS

SURVEILLANCE YMP-SR-93-031

CONDUCTED AT LAS VEGAS, NEVADA

JULY 6 THROUGH 9, 1993

ACTIVITIES SURVEILLED:

PROGRAM RECORDS MANAGEMENT: MICROFILMING PROGRAM RECORDS

Prepared by: _____ **Date:** 7-22-93
John S. Martin
Surveillance Team Leader
Yucca Mountain Quality Assurance Division

Approved by: _____ **Date:** 7/26/93
Donald G. Horton
Director
Office of Quality Assurance

ENCLOSURE

1.0 EXECUTIVE SUMMARY

This surveillance of the Civilian Radioactive Waste Management System (CRWMS) Management and Operating (M&O) Contractor's microfilming of Yucca Mountain Site Characterization Project (YMP) records was conducted at the Las Vegas YMP offices, July 6 through July 9, 1993. This surveillance was unscheduled and in response to concerns raised on the YMP regarding the quality of microfilmed records. During the surveillance, the effectiveness of implementation of the M&O Contractor's Quality Assurance (QA) Program Element 17.0, "Quality Assurance Records," and implementing procedures relating to the microfilming of YMP records, was evaluated. The quality of the microfilmed records reviewed were generally found to be acceptable. One microfilmed record was illegible due to an illegible hardcopy that had been accepted by the Local Records Center (LRC). This finding has been previously identified on Corrective Action Reports (CAR) YM-91-065 and YM-93-004. CAR-YM-93-004 remains open and this deficiency will be tracked until closed. Four additional adverse findings were identified and issued on CARs YM-93-066, YM-93-067, YM-93-068 and YM-93-069. These findings were related to procedural inconsistencies with U.S. Department of Energy (DOE) requirements documents, vendor qualification of microfilm testing services, and the lack of a calibration program and procedure for control of the photographic densitometer. Information copies of these CARs are contained in Attachment 1.

2.0 PURPOSE AND SCOPE

Surveillance YMP-SR-93-031 was conducted at the YMP Las Vegas offices to determine effective implementation of YMP requirements relating to the microfilming of YMP records by the M&O Contractor. The microfilming processes, equipment and controls were evaluated at the Project Microfilming Center; microfilmed records retrievability and legibility were evaluated at the LRC; and, retrieval and comparison of archived hardcopies of a microfilmed record were examined at Security Archives, a storage repository for YMP records.

3.0 SURVEILLANCE TEAM

John S. Martin, Surveillance Team Leader, Yucca Mountain Quality Assurance Division (YMQAD)

Kenneth O. Gilkerson, Surveillance Team Member, YMQAD

4.0 PERSONNEL CONTACTED DURING THE SURVEILLANCE

Hans Ebner, M&O Records Management
Kim Quinell, M&O Records Management (Project Microfilming Center)
Toni Castelli, M&O Records Management (LRC)
Joanne Jacobson, M&O Records Management (Central Records Facility)
Tom Reding, M&O Records Management
Jack Jackson, M&O QA
Robert Justice, M&O QA
William Petrie, M&O QA
James Frank, M&O QA
David Warriner, DOE/YMP
Paul Cloke, Science Applications International Corporation (SAIC) Manager, Scientific Investigation Support
August Matthusen, SAIC Scientific Investigation Support
Steve Mattson, SAIC Scientific Investigation Support

5.0 SURVEILLANCE RESULTS

The surveillance began with a review of illegible photocopied documents that were submitted by the LRC to SAIC Principal Investigators. See Paragraph 5.2 for documents reviewed. The documents submitted were all copied from the "record copy" microfilm in records. An examination of the microfilm disclosed that the microfilmed records were legible and reproducible with the exception of one document, an article titled "Fading of Fission Tracks in the Geologic Environment." The original of this document was later examined at the records repository, Security Archives. The original was illegible and should not have been accepted by the LRC from the record source. Most of the documents requested by SAIC appeared to be illegible due to "blowback" in the copying process, not because of poor microfilming. The adverse condition of illegible records has been previously identified on CARs YM-91-065 and YM-93-004. CAR YM-93-004 remains open.

An examination of the Project Microfilming Center was also conducted to determine if the microfilming process was consistent with the M&O procedure Quality Administrative Procedure (QAP)-17-4 and DOE/RW-0194P, Records Management Policies and Requirements (RMPR). A number of inconsistencies between these documents relating to background densities and required tests were identified, and CAR YM-93-066 was issued to address them. It was also noted that the testing for thiosulfate ion concentrations was not in accordance with procedural requirements; CAR YM-93-067 was issued. Two other adverse conditions were addressed relating to the Project Microfilming Center. CAR YM-93-068 was issued to document that no

procedural direction exists for the control of calibration and calibration results for the photographic densitometer being used to verify density of microfilm. For the last adverse finding, CAR YM-93-069, was issued to address the use of Micro D International for performing tests without having been evaluated as a qualified supplier of services.

Although five deficiencies were identified and four new CARs issued, the quality of the microfilming process itself appears acceptable for legibility and reproducibility. The impact of inconsistencies for density, testing requirements (e.g. film brittleness, film curl and acceptable levels of thiosulfate ion concentrations) will need to be evaluated to determine that archival quality of microfilm is acceptable.

5.1. Conditions Adverse to Quality

Procedure Deficiencies (QAP vs. RMPR)	CAR YM-93-066
Testing of Thiosulfate Ion Concentration	CAR YM-93-067
No Measuring and Test Equipment Procedure for Densitometer	CAR YM-93-068
Supplier of testing services not qualified	CAR YM-93-069

5.2 Records Reviewed/Equipment Examined

Record Accession Number	Comments
NNA.920119.0186	Microfilm and original illegible. See CAR-YM-93-004
NNA.910617.0019	Legible on microfilm. Photocopy was hard to read graphs and figures.
NNA.921019.0176	Description under drawings hard to read on microfilm due to small print.
NNA.930630.0004	Charts missing in copies. Original had charts. This record was not on microfilm.

NNA.870314.0549	Legible on microfilm and photocopies.
NNA.930624.0001	Legible on microfilm and photocopies.
NNA.900711.0237	Legible on microfilm and photocopies.

Additional Microfilmed Records Reviewed At Random in LRC	Comments
	Additional microfilm reviewed on ESF and other non-journal records
NNA.870403.0219	Legible
NNA.870409.0252	Legible
NNA.870323.0392	Legible
NNA.911017.0042	Legible
NNA.890104.0044	Legible
NNA.904210.1605	Legible. Reviewed associated drawings on aperture cards (35mm film)
NNA.930304.0022	Legible

Equipment Examined	Comments
3M Model 222 Densitometer ID No. PTL Y 881	Calibrated by Reynolds Electrical and Engineering Company, Inc. 7/16/92 Due 7/16/93
Kodak Film Processor Model-Pro-Star 1	None

Kodak Film (16mm) and Data Sheets (Kodak spec No. 163)	No reference in the Kodak specs to following required tests: ANSI PH1.29-1971 (for curl) ANSI PH1.31-1973 (for brittleness) Federal Standard 170B

6.0 RECOMMENDATIONS

See CARs attached.

7.0 ATTACHMENTS

Attachment 1: Information Copies of CARs YM-93-066 through YM-93-069

ATTACHMENT 1

INFORMATION COPIES

OF

CORRECTIVE ACTION REQUESTS

ORIGINAL
THIS IS A RED STAMP

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

8 CAR NO.: YM-93-066
DATE: 07/15/93
SHEET: 1 OF 2
QA

CORRECTIVE ACTION REQUEST

1 Controlling Document: DOE/RW-0194P

2 Related Report No.: YMP-SR-93-031

3 Responsible Organization: M&O

4 Discussed With: J. Jackson/T. Reding

5 Requirement:

Office of Civilian Radioactive Waste Management Program Management Polices and Requirements (DOE/RE-0194P), Revision 2, Paragraphs 1.0 and 2.0 identifies this document as applicable to OCRWM Headquarters and OCRWM Project Offices. The following requirements for microfilming are found in Appendix D of this document:

1. Appendix D, para D.3.2 c requires 16mm film stock to conform to..testing for determining the curl of photographic film as specified in ANSI PH 1.29-1971, testing for brittleness as specified in ANSI PH 1.31-1973, and black and white testing as specified in Federal Standard No. 170B.

2. Appendix D, para D.3.4 a. requires that microfilm "be processed so

6 Adverse Condition:

Contrary to the above requirements, the M&O QAP 17-4, Rev 0, is inconsistent with these requirements.

1. Testing requirements for stock film is not addressed in any M&O procedures nor can any evidence be found that they are met by the supplier of the stock film (Kodak).

2. QAP 17-4 Rev 0, para 5.1.5 states that "...microfilm and aperture cards shall be tested for the residual thiosufate ion concentration, which shall not exceed 0.14 grams per square meter..."

3. QAP 17-4 Rev 0, para 5.1.7 states that density measurements are described in ANSI/AIIM MS 23 which provides different background densities than required by the DOE requirements document cited above, e.g. Group 1 is 1.3-1.5, Group 2 is 1.15-1.4, Group 3 is 1.0-1.2, Group 4 is .80-1.0, Group 5 is .70-.85.

9 Does a significant condition adverse to quality exist? Yes___ No X
If Yes, Circle One: A B C

10 Does a stop work condition exist? Yes___ No X ; If Yes - Attach copy of SWO
If Yes, Circle One: A B C D

11 Response Due Date: 20 working days fromdate of issue

12 Required Actions: [X] Remedial [X] Extent of Deficiency [X] Preclude Recurrence [ ] Root Cause Determination

13 Recommended Actions:

1.) Correct deficiencies identified in Block 6 and report results thereof.

2.) Determine the extent of like deficiencies, correct those identified, and report result.

3.) Provide methodology to preclude recurrence.

7 Initiator: John S. Martin — Date 7/15/93	14 Issuance Approved by: QADD for — Date 07-19-93
15 Response Accepted: QAR — Date	16 Response Accepted: QADD — Date
17 Amended Response Accepted: QAR — Date	18 Amended Response Accepted: QADD — Date
19 Corrective Actions Verified: QAR — Date	20 Closure Approved by: QADD — Date

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WASHINGTON, D.C.

8 CAR NO.: YM-93-066
DATE: 07/15/93
SHEET: 2 OF 2
QA

CORRECTIVE ACTION REQUEST (Continuation Page)

5 Requirements (continued)

that the residual thiosulfate ion concentration will not exceed 0.007 grams per meter.."

3. Appendix, para D.3.4 c. prescribes background densities for five classifications of documents, e.g. Group 1 is 1.1-1.3, Group 2 is 1.0-1.1, Group 3 is .90-1.0, Group 4 is .80-.90 and Group 5 is 1.2-1.5.

6 Adverse Condition (continued)

NOTE: The group classifications and background densities used by the MIO from ANSI/AIIM MS are as described in 36 CFR 1230.

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8 CAR NO.: YM-93-067
DATE: 07/15/93
SHEET: 1 OF 1
QA

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAP 17-4, Revision 4	YMP-SR 93-031

3 Responsible Organization	4 Discussed With
M&O	J. Jackson/T. Reding

5 Requirement:

QAP 17-4 Rev 0, para 5.1.5 states in part "Processed microfilm and aperture cards shall be tested for the residual thiosulfate ion concentration..."

6 Adverse Condition:

Contrary to this requirement, the only microfilm actually tested for residual thiosulfate ion concentration is the last roll processed in the week.

9 Does a significant condition adverse to quality exist? Yes___ No X If Yes, Circle One: A B C	10 Does a stop work condition exist? Yes___ No X ; If Yes - Attach copy of SWO If Yes, Circle One: A B C D	11 Response Due Date: 20 working days fromdate of issue

12 Required Actions: [X] Remedial [X] Extent of Deficiency [X] Preclude Recurrence [ ] Root Cause Determination

13 Recommended Actions:
1) Correct deficiency noted in block 6 and report results.
2) Determine extent of deficiency and report results thereof.
3) Provide methodology to preclude recurrence.

7 Initiator John S. Martin	Date 7/15/93	14 Issuance Approved by: QADD for	Date 07-19-93
15 Response Accepted QAR	Date	16 Response Accepted QADD	Date
17 Amended Response Accepted QAR	Date	18 Amended Response Accepted QADD	Date
19 Corrective Actions Verified QAR	Date	20 Closure Approved by: QADD	Date

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WASHINGTON, D.C.

5 CAR NO.: YM-93-068
DATE: 07/15/93
SHEET: 1 OF 1
QA

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD	SR-YMP-93-031

3 Responsible Organization	4 Discussed With
M&O	J. Jackson/T. Reding

5 Requirement:

Civilian Radioactive Waste Management System Management and Operating Contractor (M&O) Quality Assurance Program Description (QAPD), Revision 3, Paragraph 12.0 states in part "If the M&O scope of work changes to require the M&O to establish its own calibration program, then the QA Program shall be revised accordingly."

M&O QAPD, Section 5, Paragraph 5.0 states in part "M&O quality affecting activities are prescribed by plans, procedures and drawings".

6 Adverse Condition:

Contrary to the above, the M&O has not developed program nor procedural controls necessary for the control of Material and Test Equipment (M&TE).

Example: Densitometer (No. PTL Y 881) utilized by the M&Os Microfilming group.

NOTE: Currently this densitometer is used to verify density of microfilm to the requirements set forth within M&O procedure QAP 17-4, Revision 0.

9 Does a significant condition adverse to quality exist? Yes___ No_X_ If Yes, Circle One: A B C	10 Does a stop work condition exist? Yes___ No_X_; If Yes - Attach copy of SWO If Yes, Circle One: A B C D	11 Response Due Date: 20 working days from issuance

12 Required Actions: [X] Remedial [X] Extent of Deficiency [X] Preclude Recurrence [ ] Root Cause Determination

13 Recommended Actions:
1) Correct deficiencies identified in Block 6 and report results thereof.
2) Determine the extent of like deficiencies, correct those identified, and report result.
3) Provide methodology to preclude recurrence.

7 Initiator K. O. Gilkerson Date 7/15/93	14 Issuance Approved by: QADD for Date 07-19-93
15 Response Accepted QAR Date	16 Response Accepted QADD Date
17 Amended Response Accepted QAR Date	18 Amended Response Accepted QADD Date
19 Corrective Actions Verified QAR Date	20 Closure Approved by: QADD Date

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5 CAR NO.: YM-93-069
DATE: 07/15/93
SHEET: 1 OF 1
QA

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAP 7-1	SR-YMP-93-031

3 Responsible Organization	4 Discussed With
MIO	J. Jackson/T. Reding

5 Requirement:

MIO QAP 7-1, Revision 0, Paragraph 5.5.3 states in part "The systems QA Manager shall use one or more of the following methods to evaluate the capabilities of qualified offers. Results of the evaluation shall be documented..." These methods include history evaluation, quality records reviews and or facility evaluation.

6 Adverse Condition:

Contrary to the above, no documented objective evidence could be produced that indicates the MIO has evaluated Micro D International (Purchase Order No. DX1082LJ3) for supplying quality services.

Micro D performs chemistry analyses of microfilm, reporting the residual amounts of thiosulfate ion concentrations.

9 Does a significant condition adverse to quality exist? Yes___ No X_ If Yes, Circle One: A B C	10 Does a stop work condition exist? Yes___ No X_; If Yes - Attach copy of SWO If Yes, Circle One: A B C D	11 Response Due Date: 20 working days from issuance

12 Required Actions: [X] Remedial [X] Extent of Deficiency [X] Preclude Recurrence [ ] Root Cause Determination

13 Recommended Actions:

1) Correct deficiencies identified in Block 6 and report results thereof.
2) Determine the extent of like deficiencies, correct those identified, and report result.
3) Provide methodology to preclude recurrence.

7 Initiator K. O. Gilkerson Date 7/13/93	14 Issuance Approved by: QADD for Date 07-19-93
15 Response Accepted QAR Date	16 Response Accepted QADD Date
17 Amended Response Accepted QAR Date	18 Amended Response Accepted QADD Date
19 Corrective Actions Verified QAR Date	20 Closure Approved by: QADD Date

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