

*rec'd with
delivered 7/27/90*

PROJECT OFFICE QUALITY ASSURANCE AUDIT REPORT FOR

THE YUCCA MOUNTAIN PROJECT OFFICE AUDIT OF

UNITED STATES GEOLOGICAL SURVEY

AUDIT NO. 90-03

CONDUCTED JUNE 25-29, 1990

AND

JULY 2-3, 1990

Prepared By: *Richard L. Maudlin*
Richard L. Maudlin
Audit Team Leader

Date: 07-23-90

Approved By: *James B. Houghton*
Donald G. Houghton, Acting Director
Office of Quality Assurance
Yucca Mountain Project Office

Date: 7/23/90

EXECUTIVE SUMMARY

In the opinion of the Yucca Mountain Project Office (Project Office) audit team, the effectiveness of implementation of the United States Geological Survey (USGS) Quality Assurance (QA) Program was considered satisfactory, except in the areas of training, nonconformance control, and records, to the extent of activities performed since the last USGS Audit. In the area of Audits, due to the problems noted, the effectiveness is considered indeterminate and needs to be evaluated during future audits.

The results of the audit identified nine Standard Deficiency Reports (SDRs) and ten observations. The areas of weakness identified above do not in any way represent a significant breakdown in the QA Program, but do indicate areas where management attention is needed. The deficiencies and observations generated during this audit should not prevent the USGS from continuing in ongoing activities for the Yucca Mountain Project. However, the Project Office audit team recommends that in-depth USGS internal surveillances and audits be performed in these areas, as well as all other areas, to gain confidence that the corrective actions taken by management to resolve the implementation deficiencies identified by this audit are effective and compliance to procedures is achieved.

1.0 INTRODUCTION

This report contains the results of a Quality Assurance (QA) audit of the activities conducted by the United States Geological Survey (USGS) in support of the Yucca Mountain Project Office (Project Office). The audit was conducted at the USGS facilities in Denver, Colorado (June 25-29, 1990) and at the Nevada Test Site (NTS) in Mercury, Nevada (July 02-03, 1990). The audit was conducted in accordance with the requirements of Quality Management Procedure QMP-18-01, Revision 3, "Audit System for the Waste Management Project Office." The QA Program requirements to be verified were taken from the USGS implementing procedures and applicable Project Office Administrative Procedures-Quality (APQs).

2.0 AUDIT SCOPE

The scope of the audit was to evaluate the effectiveness of implementation of the USGS QA Program. This was accomplished through the verification of compliance to the USGS implementing procedures which are applied to meet the requirements of YMPO 88/9 and the USGS Quality Assurance Program Plan (QAPP).

The following QA Program elements were audited to assess compliance with the USGS implementing procedures and applicable Project Office APQs.

- 1.0 Organization
- 2.0 Quality Assurance Program
- 3.0 Scientific Investigation Control and Design Control/Software Quality Assurance
- 4.0 Procurement Document Control
- 5.0 Instructions, Procedures, Plans, and Drawings
- 6.0 Document Control
- 7.0 Control of Purchased Items, and Services
- 8.0 Identification and Control of Items, Samples, and Data
- 12.0 Control of Measuring and Test Equipment
- 13.0 Handling, Shipping, and Storage
- 15.0 Control of Nonconforming Items
- 16.0 Corrective Action
- 17.0 Quality Assurance Records
- 18.0 Audits

The following program elements were deemed to be not applicable to the activities currently assigned to the USGS:

- 9.0 Control of Processes
- 10.0 Inspection
- 11.0 Test Control
- 14.0 Inspection, Test, and Operating Status

The audit scope included a review and evaluation of the following technical activities:

<u>SCP Reference</u>	<u>Title</u>
8.3.1.5.2.1	Characterization of Quaternary Regional Hydrology
Sub-activity	(.3)-Evaluation of Past Discharge Areas
Sub-activity	(.4)-Analog Recharge Studies
Sub-activity	(.5)-Calcite and Opaline Silica Vein Deposits
8.3.1.2.2.8	Fluid Flow in Unsaturated Fractured Rock
Sub-activity	(.1)-Development of Conceptual and Numeric Models of Fluid Flow in Unsaturated, Fractured Rock
8.3.1.4.2.2	Characterization of Structural Features Within the Site Area
Sub-activity	(.1)-Geologic Mapping of Zonal Features in the Paintbrush Tuff
Sub-activity	(.2)-Surface-Fracture Network Studies
8.3.1.2.1.3	Characterization of the Regional Ground-Water Flow System
Sub-activity	(.2)-Regional Potentiometric Level Distribution and Hydrogeologic Framework Studies
Sub-activity	(.3)-Fourtymile Wash Recharge Study

In addition, the above technical activities were evaluated to determine adequacy in the following areas:

1. Technical qualification of scientific investigation personnel.
2. Understanding of procedural requirements as they pertain to scientific investigation activities.
3. Adequacy of technical procedures.
4. Development of Study Plans, work supporting the Site Characterization Plan, and any work related products.

3.0 AUDIT TEAM PERSONNEL AND OBSERVERS

<u>Individual</u>	<u>Responsibility</u>
James Blaylock	Audit Manager
Richard L. Maudlin	Audit Team Leader
Tom J. Higgins	Lead Technical Specialist
A. Edward Cocoros	Auditor
Charles C. Warren	Auditor

Kenneth T. McFall	Auditor
Richard L. Weeks	Auditor
Robert B. Constable	Auditor
Neil D. Cox	Auditor
James E. Clark	Auditor
Ken O. Gilkerson	Auditor-In-Training
Donald J. Harris	Auditor-In-Training
Dennis Brown	Auditor-In-Training
Marc Meyer	Auditor-In-Training
Bruce W. Hurley	Technical Specialist
Keith M. Kersch	Technical Specialist
Paul L. Cloke	Technical Specialist
April V. Gil	Technical Specialist-In-Training
Teak Verma	Lead Observer, NRC
Ken Hooks	Observer, NRC
John Bradbury	Observer, NRC
Keith McConnel	Observer, NRC
Neil Coleman	Observer, NRC
Philip Justice	Observer, NRC
Tom Trbovich	Observer, NRC
Susan Zimmerman	Observer, State of Nevada
Engelbrecht Tiesenhausen	Observer, Clark County

4.0 SUMMARY OF AUDIT RESULTS

4.1 Statement of Program Effectiveness

In the opinion of the Project Office audit team, the effectiveness of implementation of the USGS QA Program was considered satisfactory, except in the areas of training, nonconformance control and records, to the extent of activities performed since the last USGS Audit. In the area of Audits, due to the problems noted, the effectiveness is considered indeterminate and needs to be evaluated during future audits.

The areas of weakness identified above do not in any way represent a significant breakdown in the QA Program, but do indicate areas where management attention is needed. The deficiencies and observations generated during this audit should not prevent USGS from continuing in ongoing activities for the Yucca Mountain Project. However, the

Project Office audit team recommends that in-depth USGS internal surveillances and audits be performed in these areas, as well as all other areas, to gain confidence that the corrective actions taken by management to resolve implementation deficiencies are effective and compliance to procedures is achieved.

4.2 Summary of Technical Activities

In the opinion of the Technical Specialists assigned to the audit, USGS technical staff are competent, capable, and appropriately dedicated to plan and carry out activities for the Yucca Mountain Project.

In the areas relating to good scientific practice, the following were observed by the technical audit team:

1. It is recommended that requirements be established that data entries in reports be checked against the original data recorded in lab books or computer printouts.
2. It is recommended that requirements be established that all samples be traceable to identifiers as to their type, locality, and other relevant characteristics.
3. In the review of Study Plans, it appears that there is confusion related to the revision levels for technical procedures referenced in the study plans. There were instances noted during the audit where the revision level for a technical procedure referenced in the study plan was not necessarily the correct revision. This item is addressed in Observation 90-03-02.
4. In interviews held with respective Principal Investigators (PIs), it was noted that improvement could be made in assuring that PIs are familiar with the procedural process for which they are responsible.
5. It was observed that investigators are not using Scientific Notebooks as a means to document preliminary investigative and development work. Instead investigators are using Technical Procedure, GCP-13, as an alternative because the Scientific Notebook Procedure, YMP-USGS-QMP-5.05, is difficult and time consuming to use. The procedure is difficult to use due to the YMP-USGS-QMP-5.05 requirement for the development and use of the Scientific Notebook Plan. It is recommended that this requirement be deleted.

For the individual project areas sampled during the audit, the Technical audit team has the following comments:

SCP 8.3.1.5.2.1--An in-depth examination was performed on the technical criteria for decoding among hypotheses and the methods for determining these criteria. In addition data were tracked from several manuscripts and one published paper back to the original laboratory records. The results of this examination revealed that procedures are effective and work is satisfactory.

Also it was noted that work regarding this study plan had been accomplished using technical procedures that were of a later revision than that referenced by the study plan. It is recommended that Interim Change Notices (ICNs) should be written to correct the study plan. This problem relates to the overall problem of referencing technical procedure revision levels in study plans.

SCP 8.3.1.2.1.3--All activities reviewed in this area were considered satisfactory during the interviews and evaluations.

SCP 8.3.1.2.2.8--All activities reviewed in this area were considered satisfactory during the interviews and evaluations.

SCP 8.3.1.4.2.2--All activities reviewed in this area were considered satisfactory except as follows. The study plan for this element makes reference to outdated and obsolete technical procedures. The study plan will need to be revised to incorporate the correct technical procedures prior to implementing any activities. Also it was noted that the submittal of interim records from work accomplished is not occurring as required by AP 1.7Q. This deviation is addressed by SDR 554 and 560.

5.0 AUDIT MEETINGS

5.1 Pre-Audit Conference

A pre-audit conference was held with the USGS Project Technical Officer (TPO) and his staff in Denver, Colorado at 10:00 a.m. on June 25, 1990. The purpose, scope, and proposed agenda for the audit were presented and the audit team was introduced. A second pre-audit conference was held on July 02, 1990 at 08:00 a.m. to address those activities at the NTS. A list of those attending the pre-audit conferences is attached as Enclosure 1.

5.2 Persons Contacted During the Audit

See Enclosure 1.

5.3 Post-Audit Conference

The post-audit conference was held at 2:00 p.m. on June 29, 1990 at the Federal Center, Building 58 in Denver, Colorado. A synopsis of the preliminary SDRs and Observations identified during the course of the audit was presented to the TPO and his staff. A second post-audit conference was held at 2:00 p.m. on July 03, 1990 at Department of Energy (DOE) QA Project Office in Las Vegas, Nevada, to discuss the results of the activities evaluated at the NTS. A list of those attending the post-audit conferences is attached as Enclosure 1.

5.4 Audit Status Meetings

Audit status meetings were held with the USGS TPO and his key staff at 8:30 a.m. on each day of the audit. A status of how the audit was progressing and identification of discrepancies were discussed.

6.0 SYNOPSIS OF STANDARD DEFICIENCY REPORTS, OBSERVATIONS, AND CONCERNS CORRECTED DURING THE AUDIT

6.1 Standard Deficiency Reports

SDR No. 553 Criteria Letter not submitted to QA Manager for review. No description of location described in the criteria letter. No criteria, requirements, or applicable procedures for work to be performed by NTS Contractors. No listing of equipment and no assignment of a control number to the criteria letter or on each page of the criteria letter.

SDR No. 554 Conflicts in content of Study Plan related to QA Level Assignment and procedure revisions. Study Plan sent to Project Office with reference to obsolete Technical Procedure.

SDR No. 555 Nonconformance Reports (NCRs) are not being processed in accordance with procedural requirements.

SDR No. 556 Corrective Action Reports (CARs) not initiated to document recurring conditions.

SDR No. 557 Discrepancies found in several records packages related to: eligibility, completeness, use of white out, lack of indexing parameters, table of contents did not list all records, and packages not forwarded to LRC within 10 days.

SDR No. 558 Local Records Center (LRC) not adequately performing quality verification of records packages.

SDR No. 559 Record package GS.89.M.00025 contained illegible copies of aerial photos and field notebooks with illegible information.

SDR No. 560 USGS QMP-17.01, Revision 3 fails to implement the 45 day transmittal requirement of data to the LRC as required by AP1.7Q.

SDR No. 561 Audits are not being consistently implemented in accordance with USGS QMP-18.01, Revision 4.

6.2 Observations

1. Interviews held with USGS personnel revealed that personnel in several cases did not understand the intent and application of procedural requirements.
2. Because of apparent problems with referencing Technical Procedure revisions in Study Plans, it is suggested that reference to revision levels be dropped.
3. No apparent controls exist that assure that Purchase Orders are not released prior to QA review.
4. Requirements for acceptance of "commercial grade" items not requiring calibration should be addressed.
5. Calibration Logs at the NTS do not in all cases reference the revision of the procedure used to perform the calibration.
6. The application of the NCR process to programmatic deficiencies is confusing and being inappropriately applied.
7. Verification of USGS CAR found to be inadequate. CAR was revised and responded to. Accepted with no apparent verification. Documentation was not clear.
8. Cause/corrective actions to prevent recurrence or a plan describing future actions to resolve CAR were not clearly identified.
9. None of the USGS CARs reviewed during the audit included a statement of immediate action taken although the CARs identified conditions that appeared to require immediate action.
10. Record package was transmitted from LRC to the Central Records Facility (CRF) with 786 pages, however, CRF only received and verified 601 pages.

6.3 Concerns Corrected During the Audit

1. A balance in the Geologic Division, Lakewood, had a hold-tag attached based on the issuance of USGS NCR-89-22. The NCR has been closed and the balance has been recently calibrated. The hold-tag was removed and an up-to-date calibration status sticker was affixed during the audit.
2. Because of travel restrictions imposed to protect the habitat of the Desert Tortoise, two seismic telemetry stations overran the calibration due dates. During the efforts to meet the imposed requirements, the preparation of NCRs was overlooked. This omission was corrected during the audit by issuance of USGS NCR-90-30 that also applies to additional overruns expected in the near future.
3. USGS NCR-90-29 was issued during the audit to document the lack of traceability to National Fire Protection Association (NFPA) Fire Rating Requirements for safes where one of a kind records are stored.
4. Records initially reviewed in the LRC reflected that the response to USGS Audit 90-07, Observation No. 4, had been evaluated by the Lead-Auditor-In-Training rather than the Lead Auditor. The original document was subsequently located by the LRC and the Lead Auditor's evaluation and signature were found to be recorded on the original as required.

7.0 RECOMMENDED ACTION

Response to each SDR (delineated in Section 6.0) are due within 20 working days from the date of the SDR transmittal letter. Upon response, and satisfactory verification of all remedial and corrective actions, the SDRs will be closed and the USGS will notified (by letter) of the closure.

A written response is required for the observations contained in Enclosure 2 of this report. Responses are due within 20 working days from the date of the transmittal letter of this report.

ENCLOSURE 1

UNITED STATES GEOLOGICAL SURVEY
90-03 AUDIT ROSTER

USGS, DENVER, CO.

<u>NAME</u>	<u>ORGANIZATION</u>	<u>TITLE</u>	<u>Pre-Audit</u>	<u>Contacted During Audit</u>	<u>Post Audit</u>
Appel, David	USGS	QA Manager	X	X	X
Bennington, Mary	SAIC	QA Ops Splst	X		
Blaylock, James	DOE/YMP	Audit Manager	X		X
Blout, D.	USGS	Technician		X	
Boucher, Michelle	USGS	NHP QA	X	X	X
Boughton, Carol	USGS	Hydrologist	X	X	X
Bradbury, John	USNRC	Observer	X		X
Brooks, Mark	SAIC	GD QA	X		X
Brown, Dennis	CER	Auditor-In-Trg	X		X
Burgess-Kohn, Karen	SAIC	Training Splst	X		X
Causseaux, Will	USGS	Sen. QA Splst	X	X	X
Chaney, Tom	USGS	Assoc QA Manager	X	X	X
Ciesnik, Marek	USGS	NHP-QA	X		X
Clark, James	SAIC	Auditor	X		X
Cloke, Paul	SAIC	Tech Specialist	X		X
Cocoros, Edward	MACTEC	Auditor			X
Coleman, Neil	USNRC	Observer	X		X
Constable, Robert	YMP/DOE	Auditor	X		X
Covington, Pamala	SAIC	SQA Impl. Splst	X	X	X
Cox, Neil	SAIC	Auditor	X		X
Czarnecki, John	USGS	PI		X	
Davies, W.	USGS	Technician		X	
DeMarco, Lauri	USGS			X	
Frans, Shelly	USGS	Secretary			X
Gil, April	SAIC	Tech Splst (Trg)	X		X
Gilkerson, Kenneth	SAIC	Auditor-In-Trg	X		X
Gillies, Daniel	USGS	Act Chief, Hyd	X	X	X
Glanzman, Virginia	USGS	Tech Pub Editor	X	X	X
Gutentag, Edwin	USGS	Hydrologist	X		
Handy, Al	USGS	QA Specialist	X		X
Harris, Don	SAIC	Auditor-In-Trg	X		X
Hayes, Larry	USGS	TPO	X	X	X
Higgins, Tom	SAIC	L. Tech Splst	X		X
Hooks, Ken	USNRC	Observer	X		X
Horton, Donald	YMP/DOE	Director, QA			X
Hoxie, Dwight	USGS	QA Specialist	X	X	X
Hurley, Bruce	SAIC	Tech Specialist	X		X
Justice, Philip	USNRC	Observer	X		X
Keefer, William	USGS	Geologist	X		X
Kersch, Keith	SAIC	Tech Specialist	X		X
Kinney, Jim	USBR	QA Manager			X

<u>NAME</u>	<u>ORGANIZATION</u>	<u>TITLE</u>	<u>Pre-Audit</u>	<u>Contacted-During Audit</u>	<u>Post Audit</u>
Kwicklis, Edward	USGS	Hydrologist	X		
LaMonaca, JoAnn	USGS	Report Splst	X		X
Langer, William	USGS	Sr. QA Splst		X	X
Langsteiner, Bruce	SAIC	USGS Auditor		X	
Luckey, Richard	USGS	Hydrologist	X	X	X
Mallon, Cheryl	USGS	NHP-QA	X		X
Maudlin, Richard	MACTEC	Audit Team Leader	X		X
McConnell, Keith	USNRC	Observer	X		X
McFall, Kenneth	SAIC	Auditor	X		X
McKinley, P.	USGS	PI		X	
Mendez-Vigo, Tracy	USGS	QA Impl. Splst	X		X
Meyer, Marc	CER	Auditor-In-Trg	X		X
Murray, Mildred	SAIC	Records Splst	X	X	
Mustard, Martha	USGS	QA Specialist	X	X	X
Overturf, D.	USGS	Contrib. Invest.		X	
Pabst, Marilyn	USGS	Hyd Technician	X	X	X
Porter, Darrell	SAIC	Mgr. Tech Support	X		X
Raup, Robert	USGS	Division Coord.	X	X	X
Reilly, Patricia	SAIC	GD/QA Impl Splst	X		X
Reynolds, Mitchell	USGS	Office Reg Hydr.	X		X
Rodman, Wayne	USGS	QA Specialist	X	X	X
Salamon, Mary	USGS	Paleohydrology	X	X	X
Shaler, John	SAIC	APM Tech Support	X		
Shideler, Gerald	USGS	Assoc Coord	X		
Spengler, R.	USGS			X	
Steinkampf, Bill	USGS	NHP	X		X
Stuckless, John	USGS	Geologist	X	X	X
Tiesenhausen, E.	Clark County	Observer	X		X
Trask, Newell	USGS-WRD	Chief, NW Hyd.			X
Trbovich, Tom	USNRC	Observer	X		X
Ulmer, Lori	SAIC	QA Impl. Splst	X		
Valega, Dan	SAIC	QA Auditor	X	X	X
Verma, Teek	USNRC	Lead Observer	X		X
Wallensdorf, Mark	SAIC	SCM Librarian		X	X
Warner, Peggy	SAIC	Records Coord.	X	X	X
Warren, Charles	MACTEC	Auditor	X		X
Weaver, Jeff	SAIC	Study Plans Supp			X
Weeks, Richard	SAIC	Auditor	X		X
Whelan, J.	USGS	Contrib. Invest.		X	
Whiteside, Ardell	SAIC	TPO Support Staff	X		X
Woolverton, Jon	USGS	QA Specialist	X	X	X
Ziemba, James	SAIC	QA Auditor	X	X	X
Zimmerman, Susan	St. of NV	Observer	X		

USGS (NTS), MERCURY, NV.

<u>NAME</u>	<u>ORGANIZATION</u>	<u>TITLE</u>	<u>Pre-Audit</u>	<u>Contacted During Audit</u>	<u>Post Audit</u>
Appel, David	USGS	QA Manager			X
Bauer, D.	USGS	Technician		X	
Blaylock, Jim	YMP/DOE	Audit Manager	X		X
Boucher, Michelle	USGS	QA Specialist	X	X	X
Brooks, J.	USGS	Technician		X	
Brooks, Mark	SAIC	QA Specialist	X	X	X
Buono, Tony	USGS	Assistant TPO			X
Causseaux, Will	USGS	Sr QA Specialist	X	X	X
Chaney, Tom	USGS	Assoc QA Manager			X
Coleman, Neil	USNRC	Observer	X		X
Cox, Neil	SAIC	Auditor	X		X
Flint, Alan	USGS	Hydrologist	X	X	
Handy, Al	USGS	QA Specialist	X	X	X
Higgins, Tom	SAIC	Lead Tech Splst			X
Long, W.	USGS	Scientist		X	
Lucky, Richard	USGS	Hydrologist	X	X	X
Maudlin, Richard	HACTEC	Audit Team Leader	X		X
Meyer, Marc	CER	Auditor-In-Trg	X		X
Murthy, Ram	YMP/DOE	Phy. Scientist			X
Pabst, Marilyn	USGS	Hyd. Technician		X	X
Tiesenhausen, E.	Clark County	Observer	X		X
Verma, Teek	USNRC	Lead Observer	X		X

ENCLOSURE 2

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-01

N-QA-012
4/89

Completed by Originating Organization

2 Noted During: Audit 90-03

3 Identified By: A.E. Coccros

4 Date:
 6/29/90

5 Organization: USGS

6 Person(s) Contacted: P. Warner,
 T. Chaney, K. Kohn

7 Response Due Date
 is 20 Days from Date
 of Transmittal

8 Discussion:

The audit effort related to QMPs 2.02 & 2.07 (Indoctrination/Training of Personnel) reported that the Indoctrination/Training Program was being implemented in an acceptable manner. However, the effectiveness of the program is marginal as reported by the auditors of Criteria 3, 4, 7, 15, 16 & 17. Personnel were encountered who did not appear to fully understand the intent and application of the requirements documents. During the audit of QMPs 2.02 and 2.07, a review of the Indoctrination/Training Records of personnel performing quality-related effort, revealed that the Training/Indoctrination Program is

9 QAE/Lead Auditor

Date

[Signature] 7/17/90

10 Branch Manager

Date

[Signature] 7/17-90

Completed by Respondee

11 Response:

12 Signature:

Date:

Completed by QA Org.

13 Response Receipt Acceptable ☐

Initiator

Date

QA/Lead Auditor

Date

14 Remarks:

Page

1 of 2

8 Discussion: (continued)

directed predominately toward "required reading" type of effort as opposed to a formal classroom effort.

Since a "required reading" approach tends to only familiarize personnel with procedural steps rather than facilitating a complete understanding of the application of the procedure, it is recommended that USGS give strong consideration to conducting formal classroom Training/Indoctrination Programs for all personnel who are required to understand and implement specific requirements documents.

YUCCA MOUNTAIN PROJECT OFFICE
YMPO OBSERVATION NO. 90-03-02

N-QA-012
4/89

Completed by Originating Organization	2 Noted During: Audit 90-03		3 Identified By: R. Weeks, B. Hurley, K. Kersch		4 Date: 6/27/90	
	5 Organization: USGS		6 Person(s) Contacted: T. Chaney, R. Spengler		7 Response Due Date is 20 Days from Date of Transmittal	
	8 Discussion: YMP Administrative Procedure AP 1.10Q requires that each Study Plan contain a list of the procedures necessary to implement that Plan. It is USGS practice to include the revision number for each procedure as well. This has resulted in apparent discrepancies between the Study Plan-listed revision numbers and those found in the List of Controlled Documents at the time of comparison. The USGS should amend their existing Study Plans to list procedures without revision number and with a statement that the activity will be performed in accordance with the revision in force at the time the activity is performed.					
	9 QAE/Lead Auditor <i>Richard L. Weeks</i>		Date 7/16/90		10 Branch Manager <i>Cathy Thompson</i>	
Completed by Respondee	11 Response:					
	12 Signature: _____ Date: _____					
Completed by QA Org.	13 Response Receipt Acceptable <input type="checkbox"/>					
	Initiator	Date	QA/Lead Auditor	Date		
14 Remarks:						
						Page <u>1</u> of <u>2</u>

8 Discussion: (continued)

This approach should be adopted in future Study Plans as well.

YUCCA MOUNTAIN PROJECT OFFICE
YMPO OBSERVATION NO. 90-03-03

N-QA-012
4/89

Completed by Originating Organization	2 Noted During: Audit 90-03		3 Identified By: Bob Constable, Ken Gilkerson		4 Date: 06/29/90		
	5 Organization: USGS		6 Person(s) Contacted: Martha Mustard		7 Response Due Date is 20 Days from Date of Transmittal		
	8 Discussion: QMP 4.01, Rev. 3, Par. 5.4.1, states in part that the Contracting Officer shall not award a QA Level I or II final procurement document until receipt of the review of final procurement documentation. (Attachment 3, QA & Technical Review of the Procurement Documentation.) No procedural controls exists to assure that the C.O. releases POs only after QAs documented review. USGS Surveillance 90-S05-OBS1 documents the occurrence of such an anomaly. It is recommended that USGS consider having the QA organization sign off on the PO approving that QA requirements have been met, or instituting other similar						
	9 QAE/Lead Auditor <i>Robert M. Powell</i>		Date 07/17/90		10 Branch Manager <i>Robert M. Powell</i>		Date 7/17/90
Completed by Respondee	11 Response:						
	12 Signature: _____ Date: _____						
Completed by QA Org.	13 Response Receipt Acceptable <input type="checkbox"/> Initiator _____ Date _____				QA/Lead Auditor _____ Date _____		
	14 Remarks:						

Page

1 of 2

8 Discussion: (continued)
procedural controls.

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-04

N-QA-012
4/89

Completed by Originating Organization

2 Noted During: Audit 90-03	3 Identified By: Bob Constable-Ken Gilkerson	4 Date: 6/29/90
5 Organization: USGS	6 Person(s) Contacted: Tom Chaney, W. Rodman, M. Mustard	7 Response Due Date is 20 Days from Date of Transmittal
8 Discussion: Modification to QMP 7.01, Rev. 4, dated 6/8/90 eliminated the requirements for QA records for certain "commercial grade" items. Requirements for the acceptance of "commercial grade" items not requiring calibration should be addressed to delineate the following: a) who receives "commercial grade" items not requiring calibration. b) how are these items received. c) what documentation is generated upon acceptance. d) where does this documentation go.		
9 QAE/Lead Auditor <i>Robert B. Cusack</i>		10 Branch Manager <i>Patricia H. Hays</i>
Date 7/16/90		Date 7-17-90

Completed by Respondee

11 Response:
12 Signature:
Date:

Completed by QA Org.

13 Response Receipt Acceptable <input type="checkbox"/>	
Initiator	QA/Lead Auditor
Date	Date
14 Remarks:	

Discussion: (continued)

- e) how is it processed and sent to the LRC.
- f) how/when does USGS-QA verify the adequacy of this documentation.

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-05

N-QA-012
4/89

Completed by Originating Organization

2 Noted During: Audit 90-03

3 Identified By: R. L. Maudlin

4 Date:
 07/02/90

5 Organization: USGS

6 Person(s) Contacted: R. Luckey

7 Response Due Date
 is 20 Days from Date
 of Transmittal

8 Discussion:

During the review of calibration logs maintained at several data stations at the NTS, it was observed that the logs did not, in all cases, identify the procedural revision used to perform the calibration. It is recommended that all future entries in the logs at the NTS include the procedure and procedure revision used to do the calibration.

9 QAE/Lead Auditor

Date

R. Maudlin

07/16/90

10 Branch Manager

Date

Little for 77-90

Completed by Respondee

11 Response:

12 Signature:

Date:

Completed by QA Org.

13 Response Receipt Acceptable ☐

Initiator

Date

QA/Lead Auditor

Date

14 Remarks:

Page

1 of 1

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-06

N-QA-012
4/89

Completed by Originating Organization	2 Noted During: AUDIT 90-03 (USGS)		3 Identified By: J.E. CLARK		4 Date: JUNE 27, 1990	
	5 Organization: USGS		6 Person(s) Contacted: J. ZIEMBA, R. LUCKEY, A. WHITESIDE, ET AL		7 Response Due Date is 20 Days from Date of Transmittal	
	8 Discussion: The NCR system established in QMP-15.01, Rev. 4, is applied to both hardware and programmatic deficiencies. The dispositioning process requires assigning resolutions such as "rework," "repair," and "use-as-is," which do not help identify corrective actions necessary for programmatic deficiencies. A dedicated programmatic deficiency documentation system (possibly an adaptation of the system used for audit findings) would facilitate corrective action identification and implementation by eliminating the force-fitting of irrelevant dispositioning terms.					
	9 QAE/Lead Auditor <i>J.E. Clark</i>		Date <i>7/16/90</i>		10 Branch Manager <i>William H. ...</i>	
Completed by Respondee	11 Response:					
	12 Signature: _____ Date: _____					
Completed by QA Org.	13 Response Receipt Acceptable <input type="checkbox"/>					
	Initiator	Date	QA/Lead Auditor	Date		
14 Remarks:						
						Page <u>1</u> of <u>1</u>

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-07

N-QA-012
4/89

Completed by Originating Organization	2 Noted During: Audit 90-03		3 Identified By: C.C. Warren		4 Date: 6-26-90	
	5 Organization: USGS		6 Person(s) Contacted: J. Ziemba		7 Response Due Date is 20 Days from Date of Transmittal	
	8 Discussion: Procedure YMP-USGS-QMP-16.01, Rev. 3 requires verification of completion of corrective action for CARs be accomplished by audit, surveillance, or management review of the affected activity. Verification of completion of corrective action for CAR 89-13 was accomplished by surveillance and found "not to be adequate or effective". Revision 1 to CAR 89-13 was issued to document this unsatisfactory verification. No additional corrective action was specified in the response to CAR 89-13, Rev. 1					
	9 QAE/Lead Auditor <i>C.C. Warren</i>		Date 7-16-90		10 Branch Manager <i>Patricia H. ...</i>	
Completed by Respondee	11 Response:					
	12 Signature: _____ Date: _____					
Completed by QA Org.	13 Response Receipt Acceptable <input type="checkbox"/>					
	Initiator	Date	QA/Lead Auditor	Date		
14 Remarks:						
						Page 1 of 2

8 Discussion: (continued)

although this response was accepted and closed by USGS Quality Assurance. Verification action on CAR 89-13, Rev. 1 was then marked "N/A - No Action". Therefore, CARs 89-13 and 89-13, Rev. 1 were closed out without a satisfactory verification of corrective action being performed. In addition, there was no documented justification for acceptance of the Revision 1 response without additional corrective action being specified.

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-08

N-QA-012
4/89

Completed by Originating Organization

2 Noted During: Audit 90-03

3 Identified By: C.C. Warren

4 Date:
6-26-90

5 Organization: USGS

6 Person(s) Contacted: J. Ziemba

7 Response Due Date
is 20 Days from Date
of Transmittal

8 Discussion:

Procedure YMP-USGS-QMP-16.01, Rev. 3 requires responsible management to identify cause and propose appropriate corrective action to prevent recurrence or provide a plan describing future actions to resolve the CAR.

A cause/corrective actions to prevent recurrence or a plan describing future actions to resolve the CAR were not clearly identified in the accepted response to CAR 89-11.

9 QAE/Lead Auditor

Date

C.C. Warren

7-11-90

10 Branch Manager

Date

John Hampton 7/17/90

Completed by Respondee

11 Response:

12 Signature:

Date:

13 Response Receipt Acceptable ☐

Initiator

Date

QA/Lead Auditor

Date

14 Remarks:

Completed by QA Org.

Page

1 of 1

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-09

N-QA-012
4/89

Completed by Originating Organization

2 Noted During: Audit 90-03

3 Identified By: C.C.- Warren

4 Date:
 6-26-90

5 Organization: USGS

6 Person(s) Contacted: J. Ziemba

7 Response Due Date
 is 20 Days from Date
 of Transmittal

8 Discussion:

Procedure YMP-USGS-QMP-16.01, Rev. 3 requires the initiator of a CAR to include in the description (part 4) a statement of immediate actions taken to remedy specific conditions, if immediate actions were necessary.

None of the CARs reviewed during the audit included a statement of immediate actions taken although the following CAR identified conditions that appeared to require immediate action.

9 QAE/Lead Auditor

Date

CC Warren

7-17-90

10 Branch Manager

Date

[Signature] 7-17-90

Completed by Respondee

11 Response:

12 Signature:

Date:

Completed by QA Org.

13 Response Receipt Acceptable ☐

Initiator

Date

QA/Lead Auditor

Date

14 Remarks:

Page

1 of 2

8 Discussion: (continued)

CAR 89-14, "ADVERSE TREND IN CALIBRATION OF EQUIPMENT" CARS reviewed were 89-10, 89-11, 89-12, 89-13, 89-14, and 90-01.

YUCCA MOUNTAIN PROJECT OFFICE
1 YMPO OBSERVATION NO. 90-03-10

N-QA-012
4/89

Completed by Originating Organization

2 Noted During: YMP-90-03	3 Identified By: R. Weeks/M. Meyer	4 Date: 6-28-90
5 Organization: USGS	6 Person(s) Contacted: Peggy Warner	7 Response Due Date is 20 Days from Date of Transmittal
8 Discussion: Record package GS.89.M000112 was transmitted from the USGS LRC to the CRF stating that 786 pages were present in the record package; however, the CRF stated the page count to be 601 pages on the returned copy of the LRC Record Transmittal form. There is no indication that the LRC attempted to resolve the discrepancy that existed between the different page counts.		
9 QAE/Lead Auditor <i>Richard L. W. [Signature]</i>	Date 7/16/90	10 Branch Manager <i>[Signature]</i>
Date 7-17-90		

Completed by Respondee

11 Response:

12 Signature:	Date:
---------------	-------

Completed by QA Org.

13 Response Receipt Acceptable <input type="checkbox"/>				
<table border="0"> <tr> <td>Initiator</td> <td>Date</td> <td>QA/Lead Auditor</td> <td>Date</td> </tr> </table>	Initiator	Date	QA/Lead Auditor	Date
Initiator	Date	QA/Lead Auditor	Date	

14 Remarks:

ENCLOSURE 3

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization	1 Date 7/2/90		2 Severity Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		Page 1 of 2	
	3 Discovered During Audit YMP-90-03		3a Identified By K. T. McFall		4 SDR No. 553 Rev. 0	
	5 Organization USGS		6 Person(s) Contacted Larry Hayes John Stuckless		7 Response Due Date is 20 Working Days from Date of Transmittal	
	8 Requirement (Audit Checklist Reference, if Applicable) 1. YMP-USGS-QMP-3.05, Rev. 2, Para. 5.3 states in part, "Review of Criteria Letters shall be performed by the USGS QA Manager and the Chief, Branch of YMP or their delegates, for technical completeness, accuracy, clarity of statement"					
Completed by Organization in block 5	9 Deficiency 1. Contrary to the above requirement, the Criteria Letter titled "Criteria Letter For Water Sampling At Well UE 25p1", dated 4/17/90 was not submitted to the USGS QA Manager for review.					
	10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Investigative <input checked="" type="checkbox"/> Corrective Identify the remedial actions to be taken to correct the deficiencies noted in Block 9. In addition, review the criteria letters issued since the effective					
	11 QAE/Lead Auditor/Date <i>Kenneth McFall 7-16-90</i>		12 Division Manager/Date <i>UA</i>		13 Project Quality Mgr./Date <i>Arthur J. [Signature] 7-17-90</i>	
	14 Remedial/Investigative Action(s) 15 Effective Date _____					
Completed by Org. QA Org.	16 Cause of the Condition & Corrective Action to Prevent Recurrence 17 Effective Date _____					
	18 Signature/Date					
	19 Response Accepted		QAE/Lead Auditor/Date		Division Manager/Date	
20 Corrective Action Verif. Satisfactory		QAE/Lead Auditor/Date		Division Manager/Date		
21 Remarks						
22 QA CLOSURE		QAE/Lead Auditor/Date		Division Manager/Date		
				PQM/Date		

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

**N-QA-038
2/89**

SDR No. 553

Page 2 of 2

8 Requirement (continued)
and applicable QA requirements...."

2. Additional requirements of YMP-USGS-QMP-3.05, Rev. 2

- A. Para. 5.1 Section "e" requires the criteria letter to include the description of location.**
- B. Para. 5.1 Section "f" requires definition of specific criteria, requirements, and applicable procedures for work to be performed by NTS Contractors.**
- C. Para. 5.1 Section "g" requires that equipment to be provided by the USGS be specified.**
- D. Para. 5.2 requires the assignment and inclusion of a unique control number and that the control number be located in the upper right-hand corner of each page along with the page numbering system.**

9 Deficiency (continued)

2. Contrary to the above requirement in Block 8:

- A. There was no location description included in the criteria letter.**
- B. There were no specific criteria, requirements, or applicable procedures for work to be performed by NTS Contractors.**
- C. There was no listing of the equipment to be provided, if any, by the USGS.**
- D. There was no assignment of a unique control number or its location in the upper right-hand corner of each page along with the page numbering system.**

10 Recommended Actions (continued)

date of YMP-USGS-QMP-3.05, 6/5/89, for similar deficiencies and provide the measures required to correct them.

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization

Appl.

5

Completed by Organization in back

Comp. by Org. QA Org.

1 Date 6-28-90		2 Severity Level <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3		Page 1 - of 2
3 Discovered During YMF-90-03		3a Identified By R. Weeks and M. Meyer		4 SDR No. 554 Rev. 0
5 Organization USGS		6 Person(s) Contacted Peggy Warner		7 Response Due Date is 20 Working Days from Date of Transmittal
8 Requirement (Audit Checklist Reference, if Applicable) SCP Management Plan, Revision 2, Paragraph 6.3 states in part, "The participating organization will submit clean, typed initial draft text that is consistent with the required format (Section 3.4) to the				
9 Deficiency Although Study Plan 8.3.1.4.2.2 was issued in February 1989, the following conflicts had not been corrected using the Study Plan change process provided in the SCP Management Plan, Revision 2:				
10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input type="checkbox"/> Investigative <input type="checkbox"/> Corrective				
11 QAE/Lead Auditor/Date <i>Richard L. White</i> 7/17/90		12 Division Manager/Date N/A		13 Project Quality Mgr./Date <i>John D. ...</i> 7-17-90
14 Remedial/Investigative Action(s)				15 Effective Date
16 Cause of the Condition & Corrective Action to Prevent Recurrence				17 Effective Date
18 Signature/Date				
19 Response Accepted	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date	
20 Corrective Action Verif. Satisfactory	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date	
21 Remarks				
22 QA CLOSURE	QAE/Lead Auditor/Date	Division Manager/Date	PQM/Date	

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

**N-QA-038
2/89**

SDR No. 554

Page 2 of 2

8 Requirement (continued)

WMPO for review..."

SCP Management Plan, Revision 2, Paragraph 3.4 states in part, "Programatic guidance relative to the content requirements and level of detail for Study Plans was developed by and received concurrence from the DOE and the NRC in the May 7-8, 1986, SCP level-of-detail meeting (see Appendix A)."

9 Deficiency (continued)

- 1) Paragraph 3.1.1 (p. 3.1-2) states that transferring geologic data from photos to base maps is a QA Level III work; Appendix A (p. A-5) states that this work is QA Level I.
- 2) Study Plan 8.3.1.4.2.2 was sent to DOE on 12-20-88 (see letter Langer to Gertz) with reference to obsolete Technical Procedure GP-01, Revision 0 although, GP-01, Revision 1 had been issued on 11-8-88. Examples of references to GP-01, Revision 0, which was obsolete at the time Study Plan 8.3.1.4.2.2 was issued, are as follows:

- o Paragraph 2.1 (p.2.1-1)
- o Paragraph 3.4.3 (p. 3.4-5)
- o Table 3.1-1 (p. T-17)

- 3) Table 3.2-1 (p. T-18) requires compliance with both Revisions 0 and 1 of Technical Procedure GP-12. Table 3.2-1 also indicates that the date of issue for both revisions of this procedure is 3-6-83.

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization

1 Date JUNE 29, 1990		2 Severity Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		Page 1 of 3	
3 Discovered During AUDIT 90-03		3a Identified By DENNIS BROWN/ JAMES E. CLARK		4 SDR No. 555 Rev. 0	
5 Organization USGS		6 Person(s) Contacted J. ZIEMBA, M. MUSTARD		7 Response Due Date is 20 Working Days from Date of Transmittal	
8 Requirement (Audit Checklist Reference, If Applicable) USGS-QMP-15.01, Rev. 4, states in part:					
9 Deficiency NCRs are not being processed in accordance with procedural requirements. A sampling of NCRs revealed procedural noncompliances in four of seven: NCRs 89-24, 89-26, 89-30, and 90-02.					
10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Investigative <input checked="" type="checkbox"/> Corrective					

Apvl.

11 QAE/Lead Auditor/Date <i>J. E. Clark 7/16/90</i>	12 Division Manager/Date <i>N/A</i>	13 Project Quality Mgr./Date <i>[Signature] 7-17-90</i>
--	--	--

Completed by Organization In Block 5

14 Remedial/Investigative Action(s)		15 Effective Date _____
16 Cause of the Condition & Corrective Action to Prevent Recurrence		17 Effective Date _____
18 Signature/Date		

Comp. by Org. QA Org.

19 Response Accepted	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date
20 Corrective Action Verif. Satisfactory	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date
21 Remarks			
22 QA CLOSURE	QAE/Lead Auditor/Date	Division Manager/Date	PQM/Date

YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET

N-QA-038
2/89

SDR No. 555

Page 2 of 3

8 Requirement (continued)

- Para. 5.5.3 When the methods specified in Para. 5.5.1 and 5.5.2 are not necessary, the assigned personnel shall assure that the documented condition is adequately identified and described and shall propose a disposition.
- Para. 5.5.3a ... The proposed disposition actions have been categorized, such as repair, rework, ...
- Para. 5.5.3c ... The cause and, if appropriate, action(s) to preclude recurrence, have been described ...
- Para. 5.5.4 The NCR shall be forwarded to the cognizant personnel or office for review and approval of the proposed disposition.
- Para. 5.5.5 The NCR is next forwarded to the QA office for review and approval which shall ensure that appropriate QA requirements have been included. The QA Manager or delegate shall ensure that the information identified in Para. 5.5.3 has been included or considered in the disposition.
- Para. 5.6.3 Upon completion of the disposition actions, the responsible personnel shall sign and date Part III of the NCR, then notify the QA office of action completion.
- Para. 5.7.3 If verification of the disposition and related records is acceptable, the QA Manager or delegate shall sign and date Part IV of the NCR ...
- Para. 5.1.5 ... If the condition or item is not out of conformance, the NCR shall be voided and the initiator of the NCR shall be informed of the basis for the voidance.

9 Deficiency (continued)

89-24 - Corrective action to prevent recurrence not addressed

89-26 - Two different dispositions indicated
Disposition action not signed as required
Corrective action to prevent recurrence not addressed

89-30 - Disposition not referenced on NCR
Disposition not approved by supervisor
Disposition not approved by QA
Disposition action not signed as completed
Verification action completed and accepted, but NCR not closed
NCR was voided; the reason was not clear or correct

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

**N-QA-038
2/89**

SDR No. 555

Page 3 of 3

9 Deficiency (continued)

**90-02 - Disposition block not marked
Disposition action not approved as completed**

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization

Appr.

Completed by Organization in Block 5

Comp. by Orig. QA Org.

1 Date June 28, 1990		2 Severity Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		Page 1 of 2
3 Discovered During Audit 90-03		3a Identified By James E. Clark		4 SDR No. 556 Rev. 0
5 Organization USGS		6 Person(s) Contacted Jim Ziemba		7 Response Due Date is 20 Working Days from Date of Transmittal
8 Requirement (Audit Checklist Reference, if Applicable) QMP-16.01, Revs. 2 & 3 Section 1 states that the procedure is to establish a system for identifying, determining the cause and providing corrective action				
9 Deficiency Contrary to the requirements cited, on at least three occasions Corrective Action Reports (CARs) were not initiated to document recurring conditions adverse to quality, or potentially adverse to quality, identified in the				
10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Investigative <input checked="" type="checkbox"/> Corrective				
11 QAE/Lead Auditor/Date <i>J E Clark 7/16/90</i>		12 Division Manager/Date <i>N/A</i>		13 Project Quality Mgr./Date <i>Thomas Hampton 7-17-90</i>
14 Remedial/Investigative Action(s)				
15 Effective Date				
16 Cause of the Condition & Corrective Action to Prevent Recurrence				
17 Effective Date				
18 Signature/Date				
19 Response Accepted	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date	
20 Corrective Action Verif. Satisfactory	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date	
21 Remarks				
22 QA CLOSURE	QAE/Lead Auditor/Date	Division Manager/Date	PQM/Date	

YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET

N-QA-038
2/89

SDR No. 556

Page 2 of 2

8 Requirement (continued)

for significant or recurring conditions adverse to quality or potentially adverse to quality, that include but are not limited to a breakdown of the USGS QA program and repetitive nonconformances.

QMP-16.01, Revs 2 & 3 Section 5.1.1 states in part "Any USGS personnel or USGS contractor personnel that observe a condition adverse to quality or potentially adverse to quality, are responsible for initiating a Corrective Action Report (CAR) and for notifying immediate and upper levels of management of the adverse condition."

9 Deficiency (continued)

September and November 1989 Trend Analysis Reports, and the March 1990 Trend Analysis Report.

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization

Aprvl.

Completed by Organization in block 5

Comp. by Orig. QA Org.

1 Date 06/28/90		2 Severity Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		Page 1 of - 3	
3 Discovered During AUDIT 90-03		3a Identified By C.C. Warren		4 SDR No. 557 Rev. 0	
5 Organization USGS		6 Person(s) Contacted P. Warner		7 Response Due Date is 20 Working Days from Date of Transmittal	
8 Requirement (Audit Checklist Reference, if Applicable) YMP-USGS-QMP 17.01, Rev. 3 identifies the following requirements for record source:					
9 Deficiency Contrary to the above requirements, a sample of 10 record packages from the LRC indicated the following:					
10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Investigative <input checked="" type="checkbox"/> Corrective Identify the remedial action to be taken to correct the deficiencies noted in Block 9. Investigate the program, process, activities, or documentation					
11 QAE/Lead Auditor/Date C.C. Warren / 7-16-90		12 Division Manager/Date N/A		13 Project Quality Mgr./Date 7-17-90	
14 Remedial/Investigative Action(s)				15 Effective Date	
16 Cause of the Condition & Corrective Action to Prevent Recurrence				17 Effective Date	
18 Signature/Date					
19 Response Accepted		QAE/Lead Auditor/Date		Division Manager/Date	
20 Corrective Action Verif. Satisfactory		QAE/Lead Auditor/Date		Division Manager/Date	
21 Remarks					
22 QA CLOSURE		QAE/Lead Auditor/Date		Division Manager/Date	
				PQM/Date	

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

N-QA-038
2/89

SDR No. 557

Page 2 of 3

8 Requirement (continued)

A. 5.1.4 INDEXING PARAMETERS: The Record Source shall ensure that the following indexing parameters for each Project record are available on the record prior to submittal to the LRC:

- o QA designation for correspondence (for QA Level I and II records designate "QA: QA" or for QA Level III, N/A or IND records designate "QA: N/A").
- o QA designation for packages ("QA levels I, II, III, N/A, or IND").
- o The Work Breakdown Structure (WBS) designation (through six digits when appropriate and separated by decimal points) of the subject of all QA records with periods.

B. 5.1.7 RECORD INSPECTION: The Records Source responsible for submitting the record (QA and/or non-QA) to the LRC shall inspect the record(s) prior to submittal to ensure the following:

5.1.7.1 Completeness - That all pages of the record, including attachments or enclosures, are accounted for and that all blocks on forms (including signature lines) are filled in or "N/A" (not applicable) is entered.

5.1.7.2 Copy Suitability - That written/typed records are legible, reproducible, and can be microfilmed in accordance with the standards for processing and microfilming outlined in Attachment 5 of this procedure and the following:

- c. Records shall not have any information scratched out or obliterated by correction fluids, etc., or have extraneous information handwritten on the record (with the exception of corrections made in accordance with Para. 5.1.8 of this procedure). If new information has been added to a record previously submitted to the LRC, it constitutes a new and separate record.
- d. No portion of any page shall be missing due to tearing or folding of the record edges nor, to the extent feasible, nor shall it contain stamps or other marks that obliterate text or other information.

C. 5.1.8 CORRECTIONS TO RECORDS: The Record Source may make corrections to completed written/typed records that have not been processed. Corrections shall be made by scribing a single line through the incorrect information using indelible black ink and entering the correct information in close proximity to the line-out. The incorrect information shall remain legible. The correction shall include the date and initials or signature of the Record Source making the correction. Erasures or correction fluid of any type shall not be used as a means of

YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET

N-QA-038
2/89

SDR No. 557

Page 3 of 3

8 Requirement (continued)

correcting information on records.

D. 5.1.9.1 General Requirements - The following requirements apply to
submittal of all Packages.

- o Prepare a Table of Contents for each package that lists all records
that are contained in the package. In the upper right corner of
the first page, list the WBS number under which the Record Source
activities are governed and the QA Level corresponding to the
subject activity.

E. 5.2.1 TRANSMITTAL TO THE LRC: Records shall be forwarded to the LRC no
later than 10 working days after either the completion date shown on the
record, the date the Record Source receives the published manuscript, or
after closeout of a record package (packages require a transmittal form -
see Attachment 6). Correspondence is submitted directly to the LRC on an
ongoing basis within 10 days of receipt or completion. YMP Records
prepared by non-USGS Project departments.

9 Deficiency (continued)

- A. Five of the Record Packages contained records that did not indicate all
required Indexing Parameters. Missing parameters included QA
Designation/Level and WBS Designation.
- B. & C. One of the Record Packages contained a record with extensive use of
correction fluid (in excess of 20 instances)
- D. The Table of Contents for six of the Record Packages did not list all
records that were contained in the Package.
- E. Five of the Record Packages were not forwarded to the LRC within 10
working days after the completion date shown on the record.

The following Record Packages were reviewed:

NCR Package 89-26	Study Plan 8.3.1.2.1.3
NCR Package 89-30	Audit Package EA 90-02
NCR Package 90-02	Audit Package USGS 89-03
CAR Package 89-13	Surveillance Package 90-S05
Study Plan 8.3.1.4.2.2	Surveillance Package 90-S17

10 Recommended Actions (continued)

to determine the extent and depth of similar deficient conditions listed as
examples on the SDR. Identify the cause of the condition and the planned
action to prevent recurrence.

N-QA-038
4/89

Completed by Originating QA Organization	1 Date 06/29/90		2 Severity Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		Page 1 of 3	
	3 Discovered During AUDIT 90-03		3a Identified By D. Brown, C. Warren		4 SDR No. 558 Rev. 0	
	5 Organization USGS		6 Person(s) Contacted P. Warner		7 Response Due Date is 20 Working Days from Date of Transmittal	
	8 Requirement (Audit Checklist Reference, if Applicable) YMP-USGS-QMP 17.01, Rev. 3, Para. 5.3.3 states, "The LRC shall verify that all Records listed within the					
Completed by Organization in Block 5	9 Deficiency Contrary to the above, the LRC was not adequately performing quality verification of QA Record Packages. The following deficient conditions were identified:					
	10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Investigative <input checked="" type="checkbox"/> Corrective Identify the remedial action to be taken to correct the deficiencies noted in Block 9. Investigate the program, process, activities, or documentation					
	11 QAE/Lead Auditor/Date C. L. W. / 7-11-90		12 Division Manager/Date N/A		13 Project Quality Mgr./Date C. L. W. / 7-17-90	
	14 Remedial/Investigative Action(s) 15 Effective Date _____					
Completed by Orig. QA Org.	16 Cause of the Condition & Corrective Action to Prevent Recurrence 17 Effective Date _____					
	18 Signature/Date					
	19 Response Accepted		QAE/Lead Auditor/Date		Division Manager/Date	
20 Corrective Action Verif. Satisfactory		QAE/Lead Auditor/Date		Division Manager/Date		
21 Remarks						
22 QA CLOSURE		QAE/Lead Auditor/Date		Division Manager/Date		
PQM/Date						

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

N-QA-038
2/89

SDR No. 558

Page 2 of 3

8 Requirement (continued)

Table of Contents to a Record Package are within that Record Package."

Para. 5.3.4 states, "The LRC shall check the Records which are being received by using the Quality Verification Checklist (Attachment 4)."

Para. 5.4 states, "The LRC shall transmit the completed Records to the CRF within 10 working days of receipt from the Record Source."

9 Deficiency (continued)

- a. QA Levels (I, II, III, N/A, or IND) were not indicated on QA Record Packages (listed on the Table of Contents). (2 out of 10 packages sampled were deficient).
- b. QA designations (QA or N/A) were not indicated on individual QA Records. (5 out of 10 packages sampled were deficient).
- c. Individual QA Records either have no WBS number or have conflicting WBS (5 out of 10 packages sampled were deficient).
- d. Attachments and enclosures to individual QA Records are not being accounted for prior to submittal to CRF. (One out of 10 packages sampled were deficient).
- e. The Table of Contents does not list all individual QA Records in QA Record Packages. (6 out of 10 packages sampled were deficient).
- f. Aerial photographs indicated by the Table of Contents for Package GS.89.M00022 were missing from the Package. These photos are one of a kind records. (This package was removed by others on the Audit Team)

The Audit Team sampled approximately 1% of all LRC QA Record Packages. Reviewed Record Packages include:

NCR Package 89-26

NCR Package 89-30

NCR Package 90-02

Study Plan 8.3.1.4.2.2

Study Plan 8.3.1.2.1.3;

CAR Package 89-13

Audit Package EA 90-02

Audit Package USGS 89-03

Surveillance Package 90-S05

Surveillance Package 90-S17

NOTE: Prior to 08/21/89, LRC was required to complete and sign the Quality Verification Checklist. The 08/21/89 modification to QMP-17.01 caused the checklist to be used as only a guide. The checklist covers many items addressed in this SDR.

10 Recommended Actions (continued)

to determine the extent and depth of similar deficient conditions listed as examples on the SDR. Identify the cause of the condition and the planned

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

**N-QA-038
2/89**

SDR No. 558

Page 3 of 3

10 Recommended Actions (continued)
action to prevent recurrence.

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization	1 Date 6-28-90		2 Severity Level <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3		Page 1 of 2
	3 Discovered During YMP-90-03		3a Identified By F. Weeks and M. Meyer		4 SDR No. 559 Rev. 0
	5 Organization USGS		6 Person(s) Contacted Peggy Warner		7 Response Due Date is 20 Working Days from Date of Transmittal
	8 Requirement (Audit Checklist Reference, if Applicable) YMP-USGS-QMP-17.01, Revision 3, Paragraph 5.1.7.2 states in part, " That written/typed records are legible, reproducible, and can be microfilmed in accordance with the standards for processing and				
Completed by Organization in Block 5	9 Deficiency Contrary to the above requirement, record package No. GS.89.M.00025 contained illegible copies of aerial photos and field notebooks (by Scott 10/20/81 - 4/26/84) with illegible information.				
	10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input type="checkbox"/> Investigative <input type="checkbox"/> Corrective				
	11 QAE/Lead Auditor/Date <i>Richard L. Weeks 7/16/90</i>	12 Division Manager/Date N/A		13 Project Quality Mgr./Date <i>John Sample 7-17-90</i>	
	14 Remedial/Investigative Action(s)				
Completed by Org. QA Org.	15 Effective Date _____				
	16 Cause of the Condition & Corrective Action to Prevent Recurrence				
	17 Effective Date _____				
	18 Signature/Date				
Comp. by Orig. QA Org.	19 Response Accepted	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date	
	20 Corrective Action Verif. Satisfactory	QAE/Lead Auditor/Date	Division Manager/Date	Project Quality Mgr./Date	
	21 Remarks				
22 QA CLOSURE		QAE/Lead Auditor/Date	Division Manager/Date	PQM/Date	

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

**N-QA-038
2/89**

SDR No. 559

Page 2 of 2

8 Requirement (continued)
microfilming..."

9 Deficiency (continued)

Specific problems:

- o QA records submitted to the LRC had illegible information written on them. An example was aerial photos which documented sample locations however, the identifiers for specific sample locations were not legible.
- o Entries in field notebooks are not always legible (pencil entries) examples on pages 1, 2, 7, 8, 11, and 13. (Notebook No. 1)

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization...	1 Date 6-26-90		2 Severity Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		Page 1 of 2	
	3 Discovered During YMP-90-03		3a Identified By R. Weeks and B. Hurley		4 SDR No. 560 Rev. 0	
	5 Organization USGS		6 Person(s) Contacted R. Spengler and R. Luckey		7 Response Due Date is 20 Working Days from Date of Transmittal	
	8 Requirement (Audit Checklist Reference, if Applicable) AP-1.7Q, Revision 2, Paragraph 2.0 states in part, " This procedure is applicable to the Project Office and all other Project participants and to Project records generated, purchased, received, and/or maintained as					
Completed by Organization In block 5	9 Deficiency Contrary to the above requirement, YMP-USGS-QMP-17.01, Revision 3, fails to implement the above stated requirement of AP-1.7Q. As a result of this condition, USGS investigators have collected data for more than					
	10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input type="checkbox"/> Investigative <input checked="" type="checkbox"/> Corrective					
	11 QAE/Lead Auditor/Date <i>Richard L. Weeks 7/16/90</i>		12 Division Manager/Date <i>U/A</i>		13 Project Quality Mgr./Date <i>Catherine [Signature] 7-17-90</i>	
	14 Remedial/Investigative Action(s)					
Comp. by Orig. QA Org.	15 Effective Date					
	16 Cause of the Condition & Corrective Action to Prevent Recurrence					
	17 Effective Date					
	18 Signature/Date					
Comp. by Orig. QA Org.	19 Response Accepted		QAE/Lead Auditor/Date		Division Manager/Date	
	20 Corrective Action Verif. Satisfactory		QAE/Lead Auditor/Date		Division Manager/Date	
	21 Remarks					
Comp. by Orig. QA Org.	22 QA CLOSURE		QAE/Lead Auditor/Date		Division Manager/Date	
					PQM/Date	

YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET

N-QA-038
2/89

SDR No. 560

Page 2 of 2

8 Requirement (continued)

a result of Project activities and functions...."

AF-1.7Q, Revision 2, Paragraph 5.5.4.3 states in part, " Interim record packages (data) shall be compiled and submitted to an LRC at 45 day intervals to ensure that all records are protected, accessible, and retrievable for Project use...."

9 Deficiency (continued)

80 days without submitting data to the Local Records Center (LRC).

Examples:

- 1) Data collected as part of Activity 8.3.1.4.2.2.2 has not been submitted to the LRC within the required 45 day period.
- 2) Data collected as part of Activity 8.3.1.5.2.1.3 has not been submitted to the LRC within the required 45 day period.
- 3) Data collected as part of Activity 8.3.1.2.3.1.2 has not been submitted to the LRC within the required 45 day period.

YMPO STANDARD DEFICIENCY REPORT

N-QA-038
4/89

Completed by Originating QA Organization	1 Date JUNE 29, 1990		2 Severity Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		Page 1 of 3	
	3 Discovered During AUDIT 90-3		3a Identified By D. HARRIS/ J.E. CLARK		4 SDR No. 561 Rev. 0	
	5 Organization USGS		6 Person(s) Contacted B. LANGSTEINER, A. WHITESIDE		7 Response Due Date is 20 Working Days from Date of Transmittal	
	8 Requirement (Audit Checklist Reference, if Applicable) USGS-QMP-18.01, Rev. 4, states in part:					
Completed by Organization in Block 5	9 Deficiency The audits program is not being consistently implemented in accordance with cited procedure requirements. Procedure violations were noted as follows: (See Page 3.)					
	10 Recommended Action(s): <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Investigative <input checked="" type="checkbox"/> Corrective					
	11 QAE/Lead Auditor/Date <i>J.E. Clark 7/16/90</i>		12 Division Manager/Date <i>N/A</i>		13 Project Quality Mgr./Date <i>Catherine Murphy 7-17-90</i>	
	14 Remedial/Investigative Action(s) 15 Effective Date _____					
Completed by Org. QA Org.	16 Cause of the Condition & Corrective Action to Prevent Recurrence 17 Effective Date _____					
	18 Signature/Date					
	19 Response Accepted		QAE/Lead Auditor/Date		Division Manager/Date	
20 Corrective Action Verif. Satisfactory		QAE/Lead Auditor/Date		Division Manager/Date		
21 Remarks						
22 QA CLOSURE		QAE/Lead Auditor/Date		Division Manager/Date		PQM/Date

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

**N-QA-038
2/89**

SDR No. 561

Page 2 of 3

8 Requirement (continued)

1. Para. 5.1.2 **INTERNAL AUDITS** - Applicable elements of the YMP-USGS QAPP shall be audited at least annually or at least once during the life of the activity, whichever is shorter. The scope of an audit shall be established by considering the results of any previous audits, the nature and frequency of identified deficiencies, and any significant changes in personnel, organization, or the QA Program.
2. Para. 5.5.4 As the audit progresses, any identified deficiencies and concerns shall be prepared by the audit team members and recorded on the Audit Finding Report (Attachments 4 and 5) or the Audit Observation form (Attachment 6), as appropriate.
3. Para. 5.9.2 Annual supplier evaluations, supplier performance audits, or source verification shall be identified in the USGS Audit Schedule (refer to Para. 5.1) and conducted as directed by the QA Manager. Applicable procurement-related requirements shall be incorporated into the Audit Checklist.
4. Para. 5.4.1 Audit checklist characteristics or elements that have been selected shall be evaluated against specified requirements or effectiveness indicators and shall include a review of corrective actions taken on deficiencies identified during previous audits.
5. Para. 5.6 **Audit Report:** The Audit Team Leader, or delegate, shall prepare a written Audit Report that shall include the information shown in Attachment 7, as a minimum.

Attachment 7 requires the following:

AUDIT REPORT: (Include statement of the effectiveness of the QA program elements that were audited.)

9 Deficiency (continued)

1. The Fiscal Year 90 Audit Schedule, Rev. 0, Rev. 1, and Rev. 2, do not reflect scheduled audits to cover QAPP elements 1 and 15.
2. In Audit 90-07, conditions documented on Observations No. 2 and 3 were issued as concerns, when they actually cite program violations.
3. The USGS YMP Audit Schedule and Vendor Evaluation Schedule do not contain 3 suppliers due for requalification: ENSECO Rocky Mountain Lab, Stable Isotope Lab, and USGS National Water Lab.

**YMPO STANDARD DEFICIENCY REPORT
CONTINUATION SHEET**

**N-QA-038
2/89**

SDR No. 561

Page 3 of 3

9 Deficiency (continued)

4. US Bureau of Reclamation Audit 90-07 and USGS Internal Audit 90-02 took credit for determining implementation of program elements when the audit records indicated that those criteria were not audited.
5. Audit 90-02 Audit Report did not contain an effectiveness statement.