Department of Energy
Nevada Operations Office
P. O. Box 98518
Las Vegas, NV 89193-8518

JUL 17 1989

WBS #1.2.9.3
"QA"

Larry R. Hayes
Technical Project Officer for Yucca Mountain Project
U.S. Geological Survey
101 Convention Center Drive
Suite 860
Las Vegas, NV 89109

CLOSURE OF STANDARD DEFICIENCY REPORT (SDR) 070 RESULTING FROM YUCCA MOUNTAIN PROJECT OFFICE QUALITY ASSURANCE AUDIT 87-6/87-7 OF U.S. GEOLOGICAL SURVEY

SDR 070 has been closed based on satisfactory verification of completed corrective actions. A copy of the SDR is enclosed for your files.

If you have any questions, please contact Wendell B. Mansel of my staff at 794-7945 or Daniel A. Klimas of Science Applications International Corporation at 794-7881.

Edwin L. Wilmot, Acting Director
Quality Assurance Division
Yucca Mountain Project Office

YMP:WBM-4870

Enclosure:
SDR 070

cc w/encl:
Ralph Stein, HQ (RW-30) FORS
Dwight Shelor, HQ (RW-3) FORS
J. R. Willmon, USGS, Denver, CO
D. A. Klimas, SAIC, Las Vegas, NV, 517/T-08
J. J. Brogan, SAIC, Las Vegas, NV, 517/T-12
L. G. Scherr, SAIC, Las Vegas, NV, 517/T-06
S. W. Zimmerman, NWPO, Carson City, NV
J. E. Kennedy, NRC, Washington, DC

cc w/o encl:
K. G. Sommer, HQ (RW-3) FORS
Alan Flint, USGS, NTS
G. P. Fehr, SAIC, Las Vegas, NV, 517/T-12
R. J. Bahorich, W, Las Vegas, NV, 517/T-37
D. O. Porter, SAIC, Golden, CO
J. W. Gilray, NRC, Las Vegas, NV

WMI STANDARD DEFICIENCY REPORT

N-QA-038
3/87

Completed by Originating QA Organization

1 Date

2 Severity Level ☐ 1 ☒ 2 ☐ 3 Page 1 of 2

3 Discovered During	3a Identified By	3b Branch Chief Concurrence Date	4 SDR No.
WMPO Audit 87-6/87-7	G. Heaney	N/A	070 Rev. 0

5 Organization	6 Person(s) Contacted	7 Response Due Date is 20 Working Days from Date of Transmittal
USGS	J. W. Reid, K. W. Causseaux, J. P. Rousseau, S. L. Breshears	

8 Requirement (Audit Checklist Reference, if Applicable) NNWSI-USGS-QMP-12.01, Rev. 1 Paragraph 5.3 states "Standards used for calibration of instruments shall be traceable to the National Bureau of Standards (NBS) or other known standards; this includes primary and working standards. If NBS standards do not exist, (cont'd)

9 Deficiency
Contrary to the above requirement, during the review of equipment calibration records it was observed that records sent to USGS by a calibration subcontractor do not indicate the NBS test numbers, or any other references which might provide (cont'd)

10 Recommended Action(s): ☒ Remedial ☒ Investigative ☒ Corrective
1) Investigate to determine if the calibration subcontractor has additional records to support the required traceability. If so, obtain these records for the calibration record files. (cont'd)

Aprvl.

11 QAE/Lead Auditor Date	12 Branch Manager Date	13 Project Quality Mgr. Date
AUG 27 1987	8/27/87	9/1/87

Completed by Organization in Block 5

14 Remedial/Investigative Action(s)
Investigate to determine if the subcontractor's calibration records support the required traceability. 15 Effective Date 11/16/87
If Records supporting the required traceability cannot be obtained from the calibration subcontractor, a NCR will be written for instruments involved with collecting Quality Level I & II data.
Procurement documents will be reviewed to determine (Continued on continuation sheet)

16 Cause of the Condition & Corrective Action to Prevent Recurrence
Minimum requirements will be determined and listed for certifications submitted to USGS.
Provide instruction to USGS personnel regarding pertinent information required to be included on subcontractor calibration documentation.
Cause of the conditions described within will be determined during the investigative process.
17 Effective Date 2/1/88 (Rev USGS Ltr 17 Nov 87) 11/15/87 NNA 87112000 81

18 Signature/Date
K. W. Causseaux 10/7/87 K W Causseaux 10/7/87

Comp. by Orig. QA Org.

19 Response	☒ Accept ☐ Amended ☐ Reject Response	QAE/Lead Auditor/Date	Branch Manager/Date
		12/1/87	12/2/87
20 Amended Response	☐ Accept ☐ Reject	QAE/Lead Auditor/Date	Branch Manager/Date
21 Verification	☒ Satisfactory ☐ Unsatisfactory	QAE/Lead Auditor/Date: Dan Kunas 6-23-89	Branch Manager/Date: J. W. Estelle 6/28/89

22 Remarks See Attached documentation pages 6 of 6

23 QA CLOSURE	QAE/Lead Auditor/Date	Branch Manager/Date	PQM/Date
	Dan Kunas 6-23-89	J. W. Estelle 6/28/89	James Blaylock 6/25/89

"BEST AVAILABLE COPY"

ENCLOSURE

Block 8 - Requirement (cont'd)

the reference standard shall be supported by certificates, reports, or data sheets attesting to the date, accuracy, and conditions under which the results were obtained."

Block 9 - Deficiency (cont'd)

traceability to NBS standards.

In some cases, the calibration documentation references a non-USGS identification or incomplete USGS serial numbers. In all cases this documentation does not indicate the identity of the vendor or approval signatures attesting to the provided test data.

Examples of calibration records reviewed with this deficiency are:
Three Psychrometer Microvoltmeter/Controllers located in the USGS Hydrologic group in Denver identified with USGS serial numbers 31800146, 23020139, 32020151.

Block 10 - Recommended Action (cont'd)

2) If additional records supporting the required traceability cannot be obtained from the calibration vendor, generate an NCR for the instruments involved and identify any Quality Level I and II data obtained by the use of those instruments.

3a) Review procurement documents to determine if adequate requirements for calibration certifications were specified. Develop minimum requirements list for certifications submitted to USGS.

3b) Provide appropriate USGS personnel with instruction regarding what pertinent information is required to be included on subcontractor calibration documentation.

Block 14 - Remedial/Investigative Action(s) (Cont't)

if adequate requirements for calibration certifications are specified.

United States Department of the Interior
GEOLOGICAL SURVEY
BOX 25046 M.S. 421
DENVER FEDERAL CENTER
DENVER, COLORADO 80225

IN REPLY REFER TO

October 7, 1987

NNA.871014.0011

Mr. James Blaylock
Project Quality Manager
Waste Management Project Office
U. S. Department of Energy
P. O. Box 98518
Las Vegas, NV 89193-8518

SUBJECT: WMPO ACTION ITEM #87-2422

Dear Jim:

As per your letter of September 9, 1987 (WMPO:JB-2680), enclosed please find WMPO SDRs Nos. 69, 70, 71, and 72. Responses have been provided by Joe R. Willmon, QA Manager, K. W. Causseaux, QA Implementation Specialist for the Nuclear Hydrology Program, and Joseph J. Barth, QA Implementation Specialist for the Geologic Division. Copies of these SDRs are being telefaxed to your office today.

Sincerely,

Larry R. Hayes
Chief, Branch of NNWSI

MHM/LRH/aa
Enclosures

cc w/enclos.
Nita J. Brogan, SAIC, Las Vegas
S. Nolan, SAIC, Las Vegas
QA File 3.16.02

cc w/o enclos.
C. B. Bentley, USGS, Denver
J. R. Willmon, USGS, Denver
K. W. Causseaux, USGS, Denver
J. J. Barth, USGS, Denver
NNWSI Chron

Attachments to SDR 070

SDR 70, Rev. 0

Verification of Remedial, Investigative and Corrective Actions

1. Investigation revealed that the actual calibration of the cited Psychrometers was not traceable to NIST (NBS) standards. However no Remedial Action is required since the data collected with the cited instruments has been determined to be QA Level III.

2. The Corrective Action was to issue a memorandum to all Principal Investigators reiterating the minimum requirements for procurement of Calibration Services, (reference: USGS Memorandum dated 1/29/88, from J. Willmon QA Manager, Branch of NNWSI to all NNWSI Principal Investigators).

United States Department of the Interior
GEOLOGICAL SURVEY
BOX 25046 M.S. 421
DENVER FEDERAL CENTER
DENVER, COLORADO 80225-0046

IN REPLY REFER TO

Memorandum February 1, 1988

To: USGS QA Manager, Lakewood, MS421

From: Assistant Chief, QA & Data Management, NHP, NNWSI

Subject: QUALITY ASSURANCE - Completion of Disposition for SDR-070

Pursuant to Extension dated November 16, 1987 for the subject Standard Deficiency Report, all actions required to close out this SDR have been completed. Recent actions by Principal Investigator Joe Rousseau are described in the attached memorandum dated February 1, 1988. The summary of those actions are:

Remedial/Investigative Actions - due 2/1/88

The data collected with instruments calibrated by the subcontractor were evaluated by the Principal Investigator who determined that these data will not be submitted as Level I or II data.

Because of the determination that the subject instruments were not used to collect Level I or II data, it was not necessary to review procurement documents to determine if adequate requirements for calibration certifications were specified.

The determination that data collected with the subject instruments are Level III is adequately supported on pages 59-65 of SIP-3343G-01, R0.

Corrective Action to Prevent Reccurrence - due 2/1/88

Minimum requirements for procurement of instrument calibration are contained in a memorandum of 1/29/88 from the QA Manager's office to NNWSI Principal Investigators.

Wil Causseaux
K. Wilford Causseaux

Attachment

cc: Joe Rousseau
Joe Reid

United States Department of the Interior
GEOLOGICAL SURVEY
BOX 25046 M.S.
DENVER FEDERAL CENTER
DENVER, COLORADO 80225

IN REPLY REFER TO

February 1, 1988

Memorandum

To: Assistant Chief, QA & Data Management, NHP

From: Joe Rousseau, Project Chief, Deep UZ Hydrology, NHP

Subject: QUALITY ASSURANCE--Disposition of SDR070, WMPO Audit 87-6/87-7

The deficiencies noted in SDR070, have been investigated and the following findings have been made:

1. Per conversation with the sub-contractor, it was determined that calibrations of the psychrometer microvoltmeter/controllers are not traceable to NBS standards.

2. The data collected with instruments calibrated by the sub-contractor were evaluated and a determination has been made not to submit these data as Level I or II.

3. The monitoring at USW UZ-1 should be considered as a prototype effort. It supports the development of methods for in-situ verification of sensor output or recalibration of downhole sensors which is identified as Level III in QALA-3343G-01-10, RO.

Joe Rousseau

JR/jml

United States Department of the Interior
GEOLOGICAL SURVEY
BOX 25046 M.S. ~~421~~
DENVER FEDERAL CENTER
DENVER, COLORADO 80225-0046

IN REPLY REFER TO

INFORMATION ONLY

January 29, 1988

MEMORANDUM

TO: NNWSI Principle Investigators

THROUGH: Acting Chief, Nuclear Hydology Program
Geologic Division NNWSI Coordinator

FROM: Quality Assurance Manager, Branch of NNWSI

SUBJECT: PROCUREMENT OF CALIBRATION SERVICES

This memorandum is issued as a guide to aid in writing technical requirements for requisitions of calibration services supporting Quality Assurance level I or II activities. Such requisitions must specify that a calibration sheet will be supplied with the following information, at a minimum:

Name of calibration facility/organization,

Date of calibration,

Name and signature of person(s) performing calibration,

Identification of the equipment being calibrated by manufacturer, type, model, and serial number and/or other unique identification numbers,

Record of actual measurements versus standard,

Determine of accuracy based upon manufacturer's or project requirements or other applicable requirements

NBS traceability numbers when traceable to NBS standard, or other applicable traceability numbers/information when using other standards.

The above are considered minimum requirements for initial calibration and should be included on procurement requisitions for calibration services. In addition, if the equipment has

Method/Item Breakdown	QA Level	NQA-1 Criteria Requirements*	Justification of Level & QA Criteria Exceptions
Develop methods for in-situ verification of sensor output or recalibration of downhole sensors	III		Meets none of the attributes of Level I or II; item describes prototype testing; successful methods will be used for subsequent monitoring and data collection in the field.
Establish validity of method and perform in-situ verification of downhole sensor output or recalibration of downhole sensors	I	1,2,3,4,6,7,10, 11,12,13,15,16, 17,18	Meets step no. 5 of the QA Level Checklist wherein the failure to provide a means to periodically recalibrate and/or verify sensor performance in-situ could result in the irretrievable loss of QA Level I data either because of sensor malfunctions and/or drift. Criteria excluded: 5--method is experimental and is thus controlled by Chapter II, NQA-1 Criteria Requirements; 8--does not involve geologic or hydrologic samples; 9--not a special process; 14--not part of USGS QA Program.
Stem and instrument boreholes in accordance with borehole stemming design	I	1,2,3,4,5,6,7,10, 12,13,15,16,17,18	Meets step no 5 of the QA Level Checklist wherein the failure to adhere to strict procedures and guidelines for placement of downhole sensors and stemming materials could result in the irretrievable loss of QA Level I data. Criteria excluded: 8--does not involve geologic or hydrologic samples; 9--not a special process; 11--no tests or research involved; 14--not part of USGS QA Program.

Page 6 of 6