

YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION

QUALITY ASSURANCE SURVEILLANCE REPORT OF

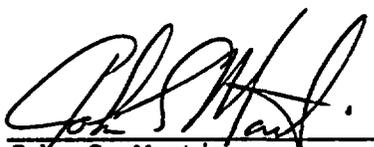
UNITED STATES GEOLOGICAL SURVEY

SURVEILLANCE NUMBER YMP-SR-91-020

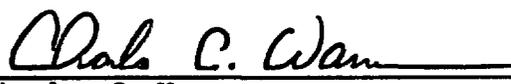
CONDUCTED JUNE 12 THROUGH JUNE 13, 1991

ACTIVITIES SURVEILLED:

CONTROL OF MEASURING AND TEST EQUIPMENT

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Date:  6-25-91

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Date: 6-25-91

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Date: 6/28/91

## 1.0 INTRODUCTION

This report contains the results of Yucca Mountain Quality Assurance Division (YMQAD) Surveillance No. YMP-SR-91-020 of United States Geological Survey (USGS). The surveillance was conducted at Mercury, Nevada, and remote locations of the Nevada Test Site (NTS) from June 12 through June 13, 1991, to verify compliance and implementation of approved USGS implementing procedures.

## 2.0 PURPOSE AND SCOPE

The purpose of this surveillance was to perform an evaluation of the control of measuring and test equipment (M&TE) as a follow-up to Audit No. YMP-91-05. During the course of this audit, it was felt that full effectiveness of Criterion 12 could not be determined due to the limited amount of M&TE available at USGS in Denver, Colorado. As a result, this surveillance was conducted to further evaluate the effectiveness and control of M&TE which is utilized by USGS at Mercury and remote locations of the NTS, and specifically at Yucca Mountain.

The scope of the surveillance included the following criterion and its attendant procedure:

### VII Control of Measuring and Test Equipment

Yucca Mountain Site Characterization Project USGS Quality Management Procedure QMP-12.01, Revision 5, "Control of Measuring and Test Equipment"

## 3.0 SURVEILLANCE PERSONNEL

The surveillance was conducted by the following personnel:

John S. Martin, Quality Assurance Engineer (Surveillance Team Leader),  
Science Applications International Corporation (SAIC)/YMQAD, Las Vegas,  
Nevada

Charles C. Warren, Quality Assurance Engineer, MAC Technical Services  
Company/YMQAD, Las Vegas, Nevada

In addition, the surveillance was attended by one observer:

John W. Gilray, U.S. Nuclear Regulatory Commission (NRC)

## 4.0 SUMMARY OF SURVEILLANCE RESULTS

The implementing procedure listed in Section 2.0 of this report was the source of the questions used to conduct this surveillance. A marked-up procedure was used to determine compliance.

4.1 Yucca Mountain Site Characterization Project USGS QMP-12.01,  
Revision 5, "Control of Measuring and Test Equipment"

During the course of this surveillance, the Surveillance Team performed procedure reviews, documentation reviews, personnel interviews, and direct observation of M&TE. Direct observation of M&TE was performed on two instruments used for calibration of other instrumentation, three seismic monitoring stations, two hydrologic monitoring stations, and two weather data gathering stations which comprised a total of 23 separate pieces of instrumentation (see Enclosure 1 for identification of M&TE observed). Specifically, field observation was performed to verify procedural compliance for the following attributes:

- o Equipment uniquely identified with model number, serial number, or other unique identifier.
- o Calibration status sticker affixed.
- o Required information on calibration sticker (i.e., identification, date calibrated, recalibration due date, procedure used for calibration, and calibrator).
- o Condition and overall protection of sensitive instrumentation from the elements, where required, and operating status of instrumentation when visual observation could be achieved (i.e., some instrumentation subsurface except for wiring).

All M&TE observed was found to be in compliance with procedural requirements.

Personnel interviews consisted of questioning individuals responsible for control of M&TE and calibrations performed by USGS. These interviews were conducted to ascertain an individual's overall cognizance of procedural prerequisites and requirements. The results of these interviews provided positive evidence of an overall working knowledge and understanding of not only QMP-12.01, but also of the technical procedures used to perform calibrations.

Documentation reviews consisted of a detailed examination of calibration documentation supplied from vendors and documentation used for recording calibrations performed by USGS (reviewed latest calibration documentation for instrumentation listed in Enclosure 1). Documentation was reviewed for but not limited to the following:

- o National Institute of Standards and Technology traceable or other recognized standard (if a standard does not exist, the reference standards used shall be supported by certificates, reports, or data sheets attesting to the date, accuracy and the conditions under which the information was obtained).

- o Calibrating standard having equal or greater accuracy (with appropriate justification for standards with equal accuracy).
- o Other required information: i.e., organization, individual item identification, standards range and accuracy, date of calibration and due date, identification of person performing calibration, technical procedure used, data showing indicated values versus standards measured values and calculations to determine if equipment is within required tolerance or accuracy.

All documentation reviewed was found to meet procedural requirements.

Procedure review was also accomplished. Technical procedures were reviewed to ensure that calibration methodology was contained or referenced along with tolerance, range, and accuracy. All procedures reviewed were found to be acceptable (see Enclosure 1 for procedures reviewed).

#### 5.0 PERSONNEL CONTACTED DURING THE COURSE OF THE SURVEILLANCE

Darrell Baldwin, USGS, Technician  
James Brooks, USGS, Technician  
Michelle Boucher, USGS, Quality Assurance Specialist  
Kenneth Causseaux, USGS, Quality Assurance Specialist  
William Davies, USGS, Technician  
Tracy Mendez-Vigo, SAIC/USGS, Quality Assurance Specialist  
Dee Overturf, USGS, Technical Manager  
Wayne Rodman, USGS, Quality Assurance Specialist

#### 6.0 MEASURING AND TEST EQUIPMENT UTILIZED DURING THE COURSE OF THE SURVEILLANCE

No measuring and/or test equipment was used by the surveillance team during the course of this surveillance.

#### 7.0 SURVEILLANCE TEAM EVALUATION

As noted this surveillance was conducted as a follow-up to Audit No. YMP-91-05. The subject audit report did not provide an effectivity statement as it was felt that this statement could only be made subsequent to an on-site surveillance of USGS's control of measuring and test equipment; however, based on the results of this surveillance and the results of the audit it is the opinion of the Surveillance Team that USGS is satisfactorily implementing an effective Quality Assurance Program for Criterion 12, "Control of Measuring and Test Equipment."

<u>ID NUMBER</u>	<u>INSTRUMENT NAME</u>	<u>CALIBRATED BY</u>	<u>TECH PROCEDURE</u>
21X-1370	DATALOGGER	CAMPBELL SCI.	HP-97, REV. 1
21X-4568	DATALOGGER	CAMPBELL SCI.	HP-97, REV. 1
220403	BAROMETERIC TRANS.	SVERDRUP	HP-177, REV. 1
4103	TIPPING RAINGAUGE BUCKET	USGS	HP-179, REV. 0
4151	TIPPING RAINGAUGE BUCKET	USGS	HP-179, REV. 0
4295	207 PROBE	SVERDRUP	HP 97, REV. 1
4297	207 PROBE	SVERDRUP	HP-97, REV. 1
B1372	WIND DIRECTION SENSOR	USGS	HP-95, REV. 0
B1415	WIND SPEED SENSOR	MET ONE	HP-96, REV. 0
B1620	WIND SPEED SENSOR	MET ONE	HP-96, REV. 0
B1679	WIND DIRECTION SENSOR	USGS	HP-95, REV. 0
PY10702	PYRONOMETER	LI-COR	HP-168, REV. 0
PY8545	PYRONOMETER	LI-COR	HP-168, REV. 0
21983	BAROMETER	YSI, INC	HP-60, REV. 1
21X-7375/ PXDR-356508	TRANS-DATALOGGER	USGS	HP-60, REV. 1
21X-7375/ PXDR-371477	TRANS-DATALOGGER	USGS	HP-60, REV. 1
DCP-685/ PXDR-356011	TRANS-DCP	USGS	HP-60, REV. 1
DCP-685/ PXDR-356013	TRANS-DCP	USGS	HP-60, REV. 1
3550189	DIGITAL MULTIMETER	STORAGE TECH.	SP-11, REV. 2
5485	COMMUNICATIONS/ MONITOR	IFR INC.	SP-11, REV. 2
YMT-3	SEISMIC TELEMETRY/ STATION	USGS	SP-11, REV. 2
YMT-4	SEISMIC TELEMETRY/ STATION	USGS	SP-11, REV. 2
YMT-6	SEISMIC TELEMETRY/ STATION	USGS	SP-11, REV. 2