



Department of Energy

Washington, DC 20585

SEP 26 1997

QA: L

L. D. Foust, Technical Project Officer  
for Yucca Mountain Site  
Characterization Project  
TRW Environmental Safety Systems, Inc.  
1180 Town Center Drive, M/S 423  
Las Vegas, NV 89134

ISSUANCE OF SURVEILLANCE RECORD LBNL-SR-97-053 RESULTING FROM THE  
OFFICE OF QUALITY ASSURANCE (OQA) SURVEILLANCE OF LAWRENCE  
BERKELEY NATIONAL LABORATORY (LBNL)

Enclosed is the record of Surveillance LBNL-SR-97-053 conducted by the OQA of LBNL  
facility in Berkeley, California, July 23 through August 18, 1997.

The purpose of the surveillance was to determine if data is being collected using appropriate  
controls.

The results of the surveillance indicate that LBNL personnel are effectively implementing their  
Quality Assurance Program for the collection of quality affecting hydrology hole data in support  
of the Single Heater Test in the Exploratory Studies Facility. No deficiencies were identified  
during the surveillance; however, three clarifications were made to the Scientific Notebooks (SN)  
or Training Records during the surveillance. These clarifications/corrections were made and  
were related to a missing reference to another SN, missing initials for an entry in an SN, and  
incorrect procedure revision in a training record. Additionally, recommendations related to the  
documentation of data and methods in the SN were provided to LBNL personnel.

This surveillance is considered completed and closed as of the date of this letter. A response to  
this surveillance record and any documented recommendations is not required.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or  
James M. Ziembra at (510) 495-2214.

Donald G. Horton, Director  
Office of Quality Assurance

OQA:JB-2368

Enclosure:  
Surveillance Record LBNL-SR-97-053

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L. D. Foust

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

Surveillance No. LBNL-SR-97-053

**QUALITY ASSURANCE SURVEILLANCE RECORD**

**SURVEILLANCE DATA**

1. ORGANIZATION/LOCATION: Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA	2. SUBJECT: Collection of measurement data for hydrology holes for the Single Heater Test (SHT)	3. DATE: 7/23/97 - 8/18/97
4. SURVEILLANCE OBJECTIVE: Determine if data is being collected using appropriate controls.		
5. SURVEILLANCE SCOPE:  Evaluate the collection of data related to the single heater test hydrology hole measurements to determine if appropriate controls were in place and data is traceable.		6. SURVEILLANCE TEAM: Team Leader: James M. Ziembra  Additional Team Members: N/A
7. PREPARED BY:  <i>Michael Malin</i> James M. Ziembra Surveillance Team Leader	7/17/97 Date	8. CONCURRENCE:  <i>Donald G. Heston</i> Donald G. Heston Director, OQA
		7/21/97 Date

**SURVEILLANCE RESULTS**

9. BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:  
A level 4 milestone for WBS 1.2.3.14.2 [First Exploratory Studies Facility (ESF) Thermal Test] was completed in July, 1997. This milestone was the completion of a Letter Report on the Third Quarter Results of Measurements in Hydrology Holes in the SHT Area. This report provides a preliminary analysis of data collected in Hydrology Boreholes 16 and 18. The data relate to constant mass flux air injection tests, in addition to the continuous monitoring of relative humidity, temperature, and pressure in the SHT block.

This performance based surveillance started with a review of the Letter Report and interview with the investigator, Barry Freifeld. The surveillance reviewed the key elements of the data collection activity that were determined from the Letter Report and interviews. The key elements evaluated were as follows:

1. The data collection activity was planned.
2. A technical procedure or scientific notebook was developed and used for the identification of the methods of data collection.
3. Appropriate equipment was selected and prepared.
4. Personnel were qualified and trained.
5. Records of the data were collected and protected, with data traceability.
6. The report was appropriately reviewed.

See Page 2-4...

10. SURVEILLANCE CONCLUSIONS:  
The results of this surveillance indicate that LBNL personnel are effectively implementing their QA program for the collection of quality affecting hydrology hole data in support of the SHT in the ESF. No deficiencies were identified during the surveillance. However, three clarifications were made to the SN or training records during the surveillance. These clarifications/corrections were made and were related to a missing reference to another SN, missing initials for an entry in an SN, and incorrect procedure revision in a training record. Additionally, recommendations related to the documentation of data and methods in the SN were provided to LBNL personnel.

11. COMPLETED BY:  <i>Michael Malin</i> James M. Ziembra Surveillance Team Leader	9/11/97 Date	12. APPROVED BY:  <i>Donald G. Heston</i> Director, OQA	9/24/97 Date
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**Block 9 (continued) BASIS FOR EVALUATION/DESCRIPTION OF OBSERVATIONS:**

The surveillance started on July 23, 1997 and was completed on August 18, 1997, after key personnel returned from an overseas trip. The following personnel were contacted during the surveillance:

LBNL Personnel - B. Freifeld, Y. Tsang, D. Mangold, C. O'Shea, and V. Fissekidou.  
OQA-QATSS Personnel - J. Therien and R. Habbe.

***Scientific Investigations shall be planned.*** (QARD Section 2.2.5 and III.2.1; and YMP-LBNL-SIII.0)

The scientific notebook (SN) #YWT-1.2 in use by the investigator provides a short description of the planned work. Another higher level SN #YWT-1.A kept by the Principal Investigator / Group Leader provides the required and necessary planning details. This SN also refers to a Yucca Mountain Site Characterization Office (YMSCO) planning document called the "In Situ Thermal Testing Program Strategy - (DOE/YMSCO-003, 1995)". The LBNL FY97 Statement of Work, Revision 3, also provides a description of the planned work for this study.

***Scientific Investigations shall be performed using scientific notebooks, implementing procedures, or a combination of both.*** (QARD Section III.2.2A)

Technical procedures were not used in this study, an SN, serial number YWT -1.2, was used instead. In addition, another higher level SN is used to describe the overall study approach. This SN #YWT-1.A refers to YWT-1.2 for data taking and description of techniques used to collect the field data.

***Scientific notebooks shall contain the following: Statement of objective and description of work, identification of samples, computer programs, methods, and description of work as it is performed.*** (QARD Section III.2.2A and B; and YMP-LBNL-SIII.0)

The SN #YWT-1.2 included an initial entry that included the scope of work objective, personnel responsible for the work, signatures and/or initial of each potential enterer of information. The notebook in-process entries included description of the work, data, personnel performing the work or making the entry, dates, equipment used, and results of calibrations performed or other data collected.

***Personnel shall be trained and qualified for the activities including the collection of quality affecting data.*** (QARD Section 2.2.12)

The following personnel performed Quality Assurance (QA) work (either collection of data or review of the data) and were appropriately trained:

J. Birkholzer (reviewer)  
K. Karasaki (reviewer)  
B. Freifeld  
Y. Tsang

ENCLOSURE

In addition, each person had appropriate qualification documents (position description and resume) on file that showed they had the appropriate qualification to perform the planned work.

***The scientific notebook shall be submitted to records at least annually.*** (QARD Section 2.2.5, 17.2, and YMP-LBNL-QIP SIII.0)

A review of the LBNL records system revealed that a copy of SN #YWT-1.2 was submitted annually as required.

***Data is traceable and a Technical Data Information Form (TDIF) was completed.*** (QARD Section III.2.3)

A TDIF with DTN # LB970700123142.001 was created for the acquired data collected as part of this activity for the period of May 22-23, 1997. The TDIF appeared to have been properly completed and accurately described the work. It was recommended that future TDIFs reference the technical procedure or SN used to collect/acquire the data.

***The data report was reviewed by independent, qualified personnel.*** (QARD Section 2.2.10, III.2.2, and III.2.4)

The data report was reviewed in accordance with YMP-LBNL-QIP 6.1, Revision 2. Neither reviewer had any significant, mandatory comments that required resolution.

***Calibrated measuring and test equipment was used to collect data.*** (QARD Sections 2.2.6, 12, and III.2.2)

The following measuring and test equipment was used to collect data. Calibration certificates for equipment required to be calibrated were reviewed, with results as follows:

<i>Serial #</i>	<i>Calibrated by</i>	<i>Notes/Results of Review</i>
Mass flow Controllers		(Air injection into packers)
C25254	Sierra	Sat.
C27248	Sierra	Sat.
C25250	Sierra	Sat.
C25253	Sierra	Sat.
C25252	Sierra	Sat.
C22518	Sierra	Sat.
Vaisala Humicaps		(Measure temperature and humidity)
R225001 through 008	Vaisala	Sat. Purchased by TRW- P.O. A056534S6C, (reference closed Deficiency Report LVMO-96-058 for non-Q procurement)

<i>Serial #</i>	<i>Calibrated by</i>	<i>Notes/Results of Review</i>
Multimeters		
0624073 (Model 2001)	Keithley	Sat.
0546019 (Model 2001)	Keithley	Sat.
Other Equipment		
709230 (0-100 psia press transducer)	Setra	Sat.
A77139 (Model 7014 Scancard)	Keithley	No calibration required
AKL 47, 49, 51, 52, 53, 54 (Endevco Pressure transducers)	Bechtel- Nevada	Sat.