



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 98608
Las Vegas, NV 89193-8608

JUN 29 1995

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

ISSUANCE OF SURVEILLANCE RECORD YMP-SR-95-033 RESULTING FROM
YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD) SURVEILLANCE
OF U.S. GEOLOGICAL SURVEY (USGS) (SCPB: N/A)

Enclosed is the record of Surveillance YMP-SR-95-033 conducted
by the YMQAD at the USGS facilities at the Yucca Mountain Site,
Nevada, June 22, 1995.

The purpose of the surveillance was to verify procedural
compliance relative to the requirements of Test Planning Package
92-09 and a subsequent Determination of Importance Evaluation
pertaining to Phase 1 of this project; i.e., the hydraulic
testing/pumping of the C-Well Complex.

Corrective Action Request (CAR) YM-95-047 was issued as a result
of this surveillance. Response to the CAR, which was transmitted
via separate letter, is due by the date indicated in Block 13 of
the CAR.

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; however,
the open CAR will continue to be tracked until it is closed to
the satisfaction of the quality assurance representative and
the Director, YMQAD.

If you have any questions, please contact either Robert B.
Constable at 794-7945 or Fred H. Lofftus at 794-7190.

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-3734

Enclosure:
Surveillance Record
YMP-5 YMP-SR-95-033

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PDR WASTE
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NHOB
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Larry R. Hayes

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JUN 29 1995

cc w/encl:

D. A. Dreyfus, HQ (RW-1) FORS
R. W. Clark, HQ (RW-3.1) FORS
C. J. Henkel, NEI, Washington, DC
~~J. G. Spraul~~, NRC, Washington, DC
W. L. Belke, NRC, Las Vegas, NV
R. R. Loux, NWPO, Carson City, NV
Cyril Schank, Churchill County Commission, Fallon, NV
D. A. Bechtel, Clark County Comprehensive, Las Vegas, NV
J. D. Hoffman, Esmeralda County, Goldfield, NV
Eureka County Board of Commissioners,
Yucca Mountain Information Office, Eureka, NV
Lander County Board of Commissioners, Battle Mountain, NV
Jason Pitts, Lincoln County, Pioche, NV
V. E. Poe, Mineral County, Hawthorne, NV
P. A. Niedzielski-Eichner, Nye County, Chantilly, VA
L. W. Bradshaw, Nye County, Tonopah, NV
William Offutt, Nye County, Tonopah, NV
Florindo Mariani, White Pine County, Ely, NV
B. R. Mettam, County of Inyo, Independence, CA
Mifflin and Associates, Las Vegas, NV
S. L. Bolivar, LANL, Los Alamos, NM
R. E. Monks, LLNL, Livermore, CA
W. J. Glasser, REECO, Las Vegas, NV
R. R. Richards, SNL, Albuquerque, NM, M/S 1330
R. P. Ruth, M&O, Las Vegas, NV
K. B. Johnson, M&O, Las Vegas, NV
T. H. Chaney, USGS, Denver, CO
C. K. Van House, YMQAD/QATSS, Las Vegas, NV
R. L. Maudlin, YMQAD/QATSS, Las Vegas, NV

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

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

¹ORGANIZATION/LOCATION:
U.S. Geological Survey (USGS,
Exploratory Studies Facility
(ESF), Yucca Mountain Site,
Nevada

²SUBJECT:
Test Planning Package (TPP) 92-09,
Revision 0 and the Determination of
Importance Evaluation (DIE) No.
BAAAD0000-01717-2200-00008, Revision 0

³DATE: 6/22/95

⁴SURVEILLANCE OBJECTIVE:

To verify procedural compliance relative to the requirements of TPP 92-09 and a subsequent DIE as they pertain to Phase 1 of this project, i.e., the hydraulic testing/pumping of the C-Well Complex.

⁵SURVEILLANCE SCOPE:

Activities associated with the Phase 1 portion of the DIE and TPP 92-09 as part of the effort to characterize the saturation-zone with regard to the ground water flow beneath the Yucca Mountain system.

⁶SURVEILLANCE TEAM:

Team Leader:

Richard L. Weeks

Additional Team Members:

Fred H. Lofftus

⁷PREPARED BY:

Fred H. Lofftus Fred H. Lofftus 6/21/95

Surveillance Team Leader Date

⁸CONCURRENCE:

N/A
QA Division Director Date

SURVEILLANCE RESULTS

⁹BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:

See Page(s) 2 & 3

¹⁰SURVEILLANCE CONCLUSIONS:

See Page(s) 3 & 4

¹¹COMPLETED BY:

R.L. Weeks R.L. Weeks 6/26/95
Surveillance Team Leader Date

¹²APPROVED BY:

[Signature] [Signature] 6.28.95
QA Division Director Date

Block 9 (continued) BASIS OF EVALUATION /DESCRIPTION OF OBSERVATIONS

The C-Well Complex is a three borehole test system located on the eastern flank of Yucca Mountain. The boreholes which are approximately 3,000 feet deep are identified as UE-25c#1 (c#1), (c#2), and (c#3). The objective of the Phase 1 portion was the placement of a 400 gpm pump in the c#3 hole at a depth of approximately 1,500 feet. The c#3 hole was then pumped for two weeks during which time hole c#1 and c#2 were monitored for a drop in the water level. The monitoring operation will then continue for another two weeks after the pumping has been terminated in order to measure the rate of hydraulic recovery. Due to the scheduled anticipated time involvement, this surveillance was necessarily limited to the examination of equipment, existing records and scientific notebooks. This surveillance resulted in one Corrective Action Request (CAR), two recommendations and several items that were corrected during the surveillance.

Items reviewed during this surveillance:

a. Scientific Notebook (SN).

During the examination of the original "prebound" SN, the Purpose, Objective and Tentative work plan were spelled out in detail. It was noted that the original prebound notebook (Volume-1) was only partly used with the final entry making reference to continuation in loose leaf notebooks. This is a procedural violation. See CAR YM-95-047.

b. SN-Identification.

In addition to the original prebound SN, there are two loose leaf SNs, one was unidentified (See items corrected during surveillance).

c. SN-Content.

Volume one contained an index and a detailed description of the purpose, objective and tentative work plan, volume two and three contained an excellent index of their content.

d. SN-Format, described in "a" above.

e. SN-Entries.

Entries and in some cases corrections in the SNs are not always initialed and dated CAR YM-95-047.

Block 9 (continued) BASIS OF EVALUATION /DESCRIPTION OF OBSERVATIONS

f. SN-Conclusion.

At the conclusion of each time period which may involve several pages, the PI or his designee have signed the last page with out dating the signature - the date appears in the beginning of that time period. See Block-10 for recommendation.

g. Equipment reviewed.

It was noted that some of the meters did not display calibration stickers. Calibration records were on file and the vendor (Paroscientific) who performed the calibration was verified to have been approved by the USGS Quality Assurance Department (see items corrected during surveillance).

Items corrected during the process of the surveillance:

- a. On 5/22/95, C-Well Complex, it was noted that a Digiquartz Pressure Transducer, SN-54588 and a McCrometer, model G-93820-12 flow meter did not display Calibration Stickers; however, back-up calibration records were on file. Calibration stickers were placed on both instruments and reverified during the duration of this surveillance. There were also a number of other meters in the system which indicated action only, i.e., they were for visual display and calibration was not required since no quantitative data was being supplied from them.
- b. The investigation into the C-Well Complex revealed that the data was being contained in three volumes of SNs. One of the notebooks was not identified, which is a violation of the Management Procedure Manual (YMP-USGS-QMP-5.05, Revision 4) Section-5 which states "Scientific Notebooks shall be uniquely identified...subsequent volumes shall be consecutively identified. Lack of identification on the third notebook was noted and corrected at the time.

Persons contacted:

M. J. Umari, Principal Investigator (PI), USGS
S. Soeder, USGS
K. J. Skipper, U.S. Department of Energy/Yucca Mountain
Site Characterization Office
W. B. Distel, Civilian Radioactive Waste Management System Management
and Operating contractor/WCFS
P. Rodriguez, USGS
J. M. Gemmell, USGS
T. H. Chaney, USGS
W. Rodman, USGS

Block 10 (continued) SURVEILLANCE CONCLUSIONS

Although this surveillance resulted in one CAR and two recommendations, the experimentation to determine the characterization of the saturated -zone ground-water flow appears to be well thought out. Entries made in the SNs are "legible," complete and carefully worded.

The complete cooperation and courtesy of all persons contacted during the process of this surveillance was sincerely appreciated.

RECOMMENDATION

- a. DIE BAAAD0000-01717-2200-00008, Revision 00. Requirement 2a states, "Application of water on the C-Well Complex shall not exceed 2 gal/yd²/day averaged over a five year period (excluding water discharged in the Forty Mile Wash and water used to mix concrete or shotcrete)." Whereas, the Surface-Based Testing Requirement Document (SBTFRD) YMP/CM-OO22, Revision 1, Section 3.2.2.12, F. states, "Within the Conceptual Perimeter Drift Boundary, the quantity of water used in site preparation and operations shall not exceed an average of two gallons per square yard of application per day averaged over a six-month period."

In view of this conflict between the DIE and the SBTFRD, it is recommended that the DIE time requirement of five years be revised to be consistent with the upper tier SBTFRD-time requirement of six months, since a lower-tier document must be in compliance with upper-tier documents.

- b. During the examination of the three Scientific Notebooks, it was noted that individual sections are dated in the beginning and signed upon completion sometime latter. It is recommended that the completion signature also be dated.