



**Department of Energy**  
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Yucca Mountain Site Characterization Office  
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**OCT 24 1996**

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**ISSUANCE OF SURVEILLANCE RECORD YMP-SR-96-029 RESULTING FROM YMQA  
SURVEILLANCE OF THE CRWMS M&O AND KIEWIT/PB**

Enclosed is the record of Surveillance YMP-SR-96-029 conducted by Yucca Mountain Quality Assurance at the Civilian Radioactive Waste Management System Management and Operating Contractor and Kiewit/Parsons Brinckerhoff (Kiewit/PB) facilities at the Yucca Mountain Site, Nevada, September 12-30, 1996.

The purpose of the surveillance was to verify compliance to a Kiewit/PB survey procedure and records management procedure.

One Deficiency Report (DR) was issued as a result of this surveillance. Response to the DR, which was transmitted via separate letter, is due by the date indicated in Block 12.

This surveillance is considered completed and closed as of the date of this letter. A response to this surveillance record is not required; however, the open DR will continue to be tracked until it is closed to the satisfaction of the quality assurance representative and the Director, Office of Quality Assurance.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or Richard L. Weeks at (702) 794-1431.

Richard E. Spence  
Yucca Mountain Quality Assurance

YMQA:JB-0148

300095

Enclosure:  
Surveillance Record YMP-SR-96-029

9610310089 961024  
PDR WASTE  
WM-11 PDR

YMP-5

(ec'd) NMSS/PAHL

144331/  
102.7  
wm-11

OCT 24 1996

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

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

<sup>1</sup>ORGANIZATION/LOCATION:  
Civilian Radioactive Waste  
Management System  
Management and Operating  
Contractor (CRWMS M&O)  
Kiewit/Parsons Brinckerhoff  
(Kiewit/PB)

<sup>2</sup>SUBJECT: Surveying Activities

<sup>3</sup>DATE: September 12-30, 1996

<sup>4</sup>SURVEILLANCE OBJECTIVE: Verify compliance to Kiewit/PB survey procedure and records management procedure.

<sup>5</sup>SURVEILLANCE SCOPE: Evaluate compliance of specific requirements identified in Technical Control Procedure (TCP)-2.33, Revision 1, "Control of the Electronic Management of Survey Data," and Management Control Procedure (MCP)-17.0, Revision 10, "Records Management."

<sup>6</sup>SURVEILLANCE TEAM:  
Team Leader:

Richard L. Weeks

Additional Team Members:

Kristi A. Hodges

<sup>7</sup>PREPARED BY:

Richard L. Weeks  
Richard L. Weeks

10/16/96

Surveillance Team Leader

Date

<sup>8</sup>CONCURRENCE:

QA Division Director

Date

SURVEILLANCE RESULTS

<sup>9</sup>BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:

See Page(s) 2, 3, and 4

<sup>10</sup>SURVEILLANCE CONCLUSIONS:

See Page 4

<sup>11</sup>COMPLETED BY:

Richard L. Weeks  
Richard L. Weeks

10/16/96

Surveillance Team Leader

Date

<sup>12</sup>APPROVED BY:

[Signature]

QA Division Director

10/23/96

Date

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

The surveillance YMP-SR-96-029 was conducted to evaluate compliance of selected requirements identified in TCP-2.33, Revision 1, and MCP-17.0, Revision 10. TCP-2.33, Revision 1, describes the process for determining the accuracy of software utilized for field survey activities. It also includes a determination of accuracy of subsequent versions of the validated software, and the maintenance and control of data used for validation of software and field survey activities. MCP-17.0, Revision 1, addresses activities related to control of records.

The surveillance began on September 12, 1996 and concluded on September 30, 1996. Documentation verifying compliance to selected requirements was examined and personnel were interviewed. With exception of one Deficiency Report (DR) and one corrected deficiency described in Block 10, the process used by Kiewit/PB to validate and control electronic survey data was determined to be adequate.

This surveillance verified satisfactory compliance to the following procedural requirements:

**TCP-2.33**

- 3.2.2 Verify that a bound logbook is maintained that lists the baseline version of the software being used.
- 3.2.2 Verify that data packages produced using survey software include a reference on the title page as to the software and version used.
- 3.3.1 Verify that documentation exists to demonstrate that a test case of field measurements has been conducted.
- 3.3.2 Verify that measurement data is collected using the following two methods:
  - 1) Hand calculations displaying the formula to establish coordinate positions on a unknown location.
  - 2) Survey software used to establish coordinate positions on the same unknown location.
- 3.3.3 Verify that hand calculations displaying the formula used are documented in a bound logbook.
- 3.3.3 Verify that each page is signed and dated by the survey personnel performing the calculation.
- 3.3.3 Verify that a second survey individual performs a review of the calculations and indicates acceptance by signing and dating in the bound logbook.

- 3.4.1 Verify that survey data collected by electronic collectors are checked by recording field measurements manually at the same time data is being stored electronically.
- 3.4.1 Verify that comparison results of manual and electronically collected data are documented by the individual conducting the comparison, including the signing and dating of logbook pages and the associated downloaded electronic data copy.
- 3.4.2 Verify that the same validation process is conducted for revisions or upgrades to previously accepted software.
- 3.4.3 Verify that the aforementioned validation process is performed for all electronic data collectors and collection software.
- 3.5.1 Verify that access to computer files is controlled by the use of locks and/or passwords.
- 3.5.1 Verify that the Chief of Survey maintains a dated list of those individuals granted access.
- 3.5.2 Verify that measurements recorded electronically are referenced by file name in the field book.
- 3.5.2 Verify that a certified copy of the field notes and, if electronically collected, an unedited copy of the collection file is included in the data set that is maintained.
- 3.5.3 Verify that survey data is maintained in a locked one-hour fireproof safe.

#### **MCP-17.0**

- 3.3.2 Verify that all corrections to logbook entries are made in accordance with records requirements.

The following documents were reviewed to verify compliance to requirements and ensure completeness:

1. Kiewit/PB Software Validation Logbook #1
2. Computer files access list, dated August 16, 1996
3. Field book FB #90
4. List of Primary Control Monuments, dated June 25, 1995

Records Packages:

5. Geologic Mapping Main Drift Set Mapping/Survey Control, dated February 29, 1996
6. Geologic Mapping Main Drift Set Mapping/Survey Control, dated March 6, 1996
7. Geologic Mapping Main Drift Set Mapping/Survey Control, dated March 8, 1996
8. Geologic Mapping Main Drift Set Mapping/Survey Control, dated April 8, 1996
9. Set Mapping/Survey Control, dated April 29, 1996

The following Kiewit/PB personnel were contacted during the surveillance:

Gregory Bates Kiewit/PB, Surveyor  
Patricia Jakus - Kiewit/PB, Clerk  
Carol Rixford - Kiewit/PB, Records Manager

**Block 10 (continued) SURVEILLANCE CONCLUSIONS:**

As a result of this surveillance, it was concluded that Kiewit/PB survey group was implementing an effective Quality Assurance program for the attributes examined. DR YM-96-D-01 was issued to address completed lifetime records that had not been submitted to Kiewit/PB Records Management personnel within the required time frame.

One minor deficient condition was corrected during the surveillance. Software utilized in electronic collectors is checked for correctness when initially installed or when a new version is installed. This check requires that a comparison be made between the manual and electronically collected data. Logbook pages documenting manual readings, and the downloaded electronically collected data copies are compared to ensure accuracy. Both the logbook and downloaded electronically collected data copies must be signed and dated by the person performing the comparison. Although the comparison was documented in Logbook #1 for Starnet, Version 5.044 and Sokkia, Version 5.0, neither the logbook nor the downloaded electronically collected data copies were signed and dated as required by TCP-2.33, Revision 1, Section 3.4.1. This condition was corrected during the surveillance.