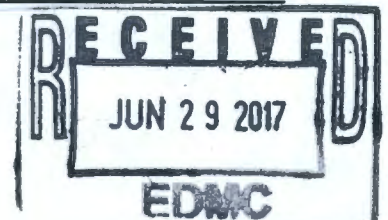


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Prepared by: Dave Roha 3/26/02  
Date  
Dave Roha  
Analysis and Evaluation Division, Lead Assessor

Steve Chalk 3/27/02  
Date  
Steve Chalk  
Analysis and Evaluation Division, Assessor



## EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE), Richland Operations Office (RL), Analysis and Evaluation Division (A&E) performed an environmental regulations compliance assessment at the Low Level Burial Grounds Facilities (LLBG) November 28, 2001, through December 7, 2001. The scope of the assessment was the contractor's compliance with the Hanford Site Resource Conservation and Recovery Act (RCRA) Permit Number WA7890008967, requirements covering the treatment and storage and disposal of mixed waste.

An entrance meeting was conducted on November 28, 2001, in the Fluor Hanford, Inc. (FHI) offices at MO-720 in the 200 West Area. The A&E assessment team, the FHI points of contact, and subject matter experts attended the meeting. The assessment schedule and the areas to be assessed were discussed. An exit meeting was held on December 19, 2001, at MO-720. The assessment concluded no findings and no observations.

This assessment is rated as "green" - generally meets requirements. The facility is considered adequate for continued safe waste storage. The facility's management and operations demonstrate a commitment to working safely and meeting DOE expectations of providing quality service to the Hanford Site.

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## 1.0 INTRODUCTION AND SCOPE

### 1.1. BACKGROUND

The LLBG consists of eight burial grounds that are classified as landfills. In addition, 218-W-5, trench 31 landfill is also classified as a landfill for greater-than-90-day container storage.

The principle hazards at LLBG relate to: hazardous materials, radioactive materials, and radioactive and/or mixed wastes.

The facility footprint includes the following:

#### 200 East Area Burial Grounds:

218-E-10  
218-E-12B

#### 200 West Area Burial Grounds:

218-W-3A  
218-W-3AE  
218-W-4B  
218-W-4C  
218-W-5  
213-W-6

M0-223 Trailer

### 1.2. ASSESSMENT

This assessment covers the permittee's program for compliance with the RCRA permit requirements pertaining to the receipt, handling, storage, and treatment of mixed waste at the facility. The purpose of this assessment was to:

- Evaluate the facility for compliance with the Hanford Facility RCRA Permit Number WA7890008967.
- Meet a commitment of the Department of Ecology "Final Determination Pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) regarding DOE's compliance with the Land Disposal Restriction (LDR) Requirements of Washington State's Hazardous Waste Management Act (HWMA).
- Evaluate the facility for compliance with RCRA.
- Provide information for DOE's Annual LDR Report (HFFACO Milestone M-26-01)."

Third party assessments are conducted by DOE to evaluate the total picture of how well the Hanford contractor's (in this case, FHI) management system complies with the applicable regulatory requirements and standards. This assessment was applied using a graded approach, tailored to the specific activities being performed at LLBG.

## 2.0 METHODS

An assessment entry meeting was held at MO-720 in the 200 West Area on November 28, 2001. The assessment team members were identified. The purpose of the assessment was declared and the scope of the assessment was described. The conduct of the assessment was reviewed along with the assessment schedule. The assessment was conducted using the process of A&E procedure A&E-01, "Evaluation of Contractor Performance in Meeting Waste Management Storage Requirements."

The method used for this assessment was a combination of document review and interviews. The inside and outside of the facility was inspected and regulatory documents were reviewed to develop the areas of primary focus for the assessment. The documents used to develop the checklist for the assessment included the Hanford Facility RCRA Permit Number WA7890008967, DOE/RL-90-24, Revision 7, "Hanford Facility Dangerous Waste Permit Application," as applicable to LLBG, WAC 173-303, 40 CFR, RL Facility Representative (FR) surveillances, contractor self-assessments, and independent assessments. This assessment focused on the following specific areas:

- Facility records;
- procedures;
- facility contingency plan;
- personnel training and qualification;
- waste analysis plan;
- operating log and log-keeping practices;
- facility security; and
- self (management and independent) assessments.

The RL Contractor Oversight and Evaluation Planning process provides the mechanism whereby RL personnel (mission element, mission support, and support service) evaluate contractor performance to ensure work is performed in accordance with the applicable requirements. This process also provides the mechanism to evaluate the adequacy of the contractors' management and independent assessment program and fulfills an important part of the feedback and improvement function of the RL Integrated Management System. This process supports implementation of DOE M 411.1A, "Safety Functions, Responsibilities and Authorities Manual," DOE P 450.5, "Line Environment, Safety, and Health Oversight," and DOE O 224.1, "Contractor Performance Based Business Management Process."

## 2.1 Assessment Team Members

Dave Roha, of RL A&E, led the assessment and Steve Chalk, of RL A&E, was a team member.

## 3.0 RESULTS

### 3.1 GENERAL

- 1) General operations (Permit Section II.O): The facility's general housekeeping was maintained. There was no evidence of discarded waste containers, remains of labels or residual waste equipment, or unpermitted waste discharges. Documents reviewed:

- Weekly Surveillance Data Sheets.

No issues were found.

Facility areas inspected:

#### 200 East Area Burial Grounds:

218-E-10 Burial Ground: This is an inactive burial ground that is approximately 89 acres in size. It began receiving waste in 1960. Examples of waste placed in this burial ground include: failed equipment, rags, paper, rubber gloves, disposable supplies, broken tools, and post August 19, 1987, RCRA and state-only designated mixed waste. Maintenance and housekeeping of the area were satisfactory.

218-E-12B Burial Ground: This is an active burial ground that is approximately 168 acres in size. It began receiving waste in 1967. Examples of waste placed in this burial ground include: defueled reactor compartments (trench 94), low-level waste, and retrievable transuranic waste. Maintenance and housekeeping of the area were satisfactory.

#### 200 West Area Burial Grounds:

218-W-3A Burial Ground: This is an inactive burial ground that is approximately 50 acres in size. It began receiving waste in 1970. Examples of waste placed in this burial ground include: ion exchange resins, failed equipment, tanks, pumps, ovens, agitators, heaters, hoods, jumpers, vehicles, accessories, retrievable transuranic waste, and post August 19, 1987, RCRA and state-only designated mixed waste. Maintenance and housekeeping of the area were satisfactory.

218-W-3AE Burial Ground: This is an active burial ground that is approximately 49 acres in size. It began receiving waste in 1981. Examples of waste placed in this burial ground include: rags, paper, rubber gloves, disposable supplies, broken tools, and post- August 19, 1987, RCRA and state-only designated mixed waste. Maintenance and housekeeping of the area were satisfactory.

218-W-4B Burial Ground: This is an inactive burial ground that is approximately 8.6 acres in size. It began receiving waste in 1968. Examples of waste placed in this burial ground include: rags, paper, rubber gloves, disposable supplies, broken tools, alpha caissons, and retrievable transuranic waste. Maintenance and housekeeping of the area were satisfactory.

218-W-4C Burial Ground: This is an active burial ground that is approximately 49 acres in size. It began receiving waste in 1978. Examples of waste places in this burial ground include: contaminated soil, decommissioned pumps, pressure vessels, post-August 19, 1978, RCRA and state-only designated mixed waste, and retrievable transuranic waste. The contractor is planning operations for retrieving transuranic waste from the trenches and performing assay analysis of the drums. Based on the results, Low level waste will be returned to the trenches. Transuranic waste will be shipped to the Central Waste Complex (CWC) for storage to await further processing. Maintenance and housekeeping of the area were satisfactory.

218-W-5 Burial Ground: This is an active burial ground that is approximately 92 acres in size. It began receiving waste in 1986. Examples of waste placed in this burial ground include: rags, paper, rubber gloves, disposable supplies, broken tools, and post-August 19, 1987, RCRA and state-only designated mixed waste. The 3A and 33 trenches are currently active. In addition, this burial ground currently contains double-lined mixed waste trenches (trenches 31 and 34). Trench 31 is available for use as a greater-than 90-day container storage area and trench 34 is designated as a mixed waste disposal facility. Waste to be placed in Trench 31 for storage purposes predominately will be macro-encapsulated long-length contaminated equipment and other containerized waste that has been treated to meet LDR requirements. Examples of waste to be disposed of in the double-lined mixed waste trenches are mixed waste that has been treated to LDR requirements (including bulk waste), macro-encapsulated long-length contaminated equipment, etc. Adjacent to the double-lined mixed waste trenches are leachate collection tanks. The leachate collection tanks are aboveground, carbon steel tanks, internally coated with an amine-cured epoxy. The leachate collection tanks are located adjacent to the disposal trenches and are provided with secondary containment. Secondary containment exists for all feed piping. The leachate collection tanks have a current design capacity of 37,850 liters. Maintenance and housekeeping of the area were satisfactory.

213-W-6 Burial Ground: This is an unused burial ground that is approximately 40 acres in size. It has not received any waste. It has been reserved for future mixed waste disposal. Maintenance and housekeeping of the area were satisfactory.

M0-223 Trailer: This is a portable office unit that is currently used for LLBG operations personnel.

- 2) Inspections (WAC-173-303-320): There was a written facility inspection plan with specified frequencies. Evidence was present that indicated the quarterly operator rounds were performed and documented as required. Document reviewed:

- SW-040-041, Revision C-6, "Inspect the Low-Level Burial Grounds."

No issues were found.

### 3.2 SPECIFIC

- 1) Facility Records (WAC-173-303-380): The facility records of the data related to the inspections were reviewed at the Unit Specific Operating Records area in trailer 720, 200W. Other documents reviewed:

- SW-040-041, Revision D-7, "Inspect the Low-Level Burial Grounds."
- SW-040-054, Revision C-5, "Trench 34/31 Daily Inspections."
- facility operations logbook.

No issues were found.

- 2) Procedures (WAC-173-303-320 (1)(2)): Procedures for the LLBG covering waste handling and facility maintenance were reviewed. Documents reviewed:

- SW-040-051, Revision C-2, "Cold Weather Protection Plan."
- SW-020-015, Revision F-4, "Trench 31/34 Disposal Operation."
- SW-020-023, Revision C-3, "Mixed Waste Trench 31 Interim Operation."
- SW-080-010, Revision F-0, "Sampling Radioactive Mixed Waste Land Disposal Trench."
- SW-100-139, Revision A-1, "Filling Void Spaces in LLBG Waste Containers."
- SW-100-141, Revision A-2, "Management of Solid Waste at LLBG."

No issues were found.

- 3) Facility Contingency Plan (WAC 173-303-340 & 350): The facility's emergency preparedness plan was established. Document reviewed:

- HNF-IP-0263-BG, Rev 9, "Building Emergency Plan for Low-Level Burial Grounds."

No issues were found.



- 4) **Personnel Training and Qualifications (WAC-173-303-330):** Training records indicated that the training coordinator was assigned, that applicable courses were listed, and personnel requiring training in their particular areas were current as required in the permit. The written training plan had the necessary content, training frequencies, and training techniques. Job descriptions were matched to the training requirements covering requisite skills, education, qualifications, and duties for each position. It was clear that the training was relevant to the positions. Documents reviewed:
- HNF-1273, Revision 3, "LLBG Dangerous Waste Training Plan."
  - Training records for three Nuclear Chemical Operators who are assigned to the Solid Waste Storage and Disposal Project.

No issues were found.

- 5) **Waste Analysis Plan (WAC-173-303-300):** The A&E assessment team evaluated the program for waste shipments to the Treatment, Storage, and Disposal (TSD) facilities managed by Waste Management Project (WMP) and reviewed the records for shipments from Pacific Northwest National Laboratory (PNNL) during the years of 1996 through 1997. The PNNL shipments included low-level waste, low-level mixed waste, and transuranic mixed waste.

The WMP verification program for waste container receipt is intended to ensure that waste shipments meet the conditions identified in the receipt facility's waste acceptance plan (WAP). Waste transferred from an on-site or off-site TSD facility will be subject to verification in accordance with WAP guidelines. In addition, waste that is shipped to a generator or TSD facility outside of the WMP complex and then subsequently returned (whether treated or not) will be subject to the verification as described in the WMP Generator Services Procedures.

The verification process consists of a screening program that includes identifying the physical and chemical aspects of the waste. The results obtained provide confidence that the waste verified and/or surveilled is as expected, meets the necessary acceptance specification, and can be safely stored, treated, or disposed of at the designated receipt facility. The verification team lead selects containers either randomly or selectively if an issue or reason developed during portfolio review to warrant verification of specific containers. As required by the WAP, a percentage of waste containers sent from each generator is required to be verified.

A performance evaluation system (PES) is used to determine initial physical screening frequency of each generator and is the process utilized to discuss and document when a waste is deemed nonverifiable. The PES requires the TSD Acceptance Representative to review the generator's Waste Profile Sheet to determine the waste stream for that shipment and, with others on the PES team, establish the initial physical screening frequency. Nonverifiable containers, that cannot be physically verified, are put through

an extensive documentation review of the applicable waste stream. At a minimum, this will include the procedure used to segregate and package the waste, and the process knowledge documentation and sampling and analysis data used to characterize the waste. The PES team will determine if the characterization data and the segregation/packaging procedures provide reasonable assurance that the waste is properly designated and meets the TSD unit's acceptance criteria.

The results of the review concluded that 63 waste shipments were made from PNNL in the 1996-97 time frame, consisting of 443 containers. Of the 443 containers, 259 containers were verified, and 77 containers failed (and were returned to the generator). The failed containers consisted on noncompliant items such as:

- Light bulbs;
- H<sub>2</sub>O;
- incompatible materials;
- excessive void space;
- liquids;
- misc. lead; and
- misc. prohibited materials and debris.

In all cases, staff from the WMP "Waste Services" group were used to perform the verification activities. After reviewing several shipment portfolios and interviewing WMP staff who were involved in the process during that time period, the team concluded that the system in use in the 1996-97 time frame was adequate to achieve the desired results of controlling the unauthorized shipment and storage of certain materials deemed prohibited by the state and federal regulations.

Other documents reviewed:

- HNF-5841, "Low-Level Burial Grounds Waste Analysis Plan," dated March 2000.
- "Sampling and Analysis Plan for Trench 34 of the 218-W-5 Burial Ground," dated September 1999.

No issues were found.

- 6) Operating Logs and Log-keeping Practices (WAC-173-303-320 (2)): The operations log that is used for the CWC and the LLBG was reviewed. The logbook appeared to be in order and all of the entries were clear and concise. The proper initials and management reviews were present. All cross-outs were correctly dated and initialed.

No issues were found.

- 7) Facility Security (WAC-173-303-310): Facility surveillance sheets were reviewed. The correct warning signs were posted on the outside of the facilities and at all entry points.

No issues were found.

- 8) Self (management and independent) Assessments (DOE P 450.5): The assessment team identified that there were three contractor (management) self-assessments performed during the previous 12 months. The contractor deficiency evaluation group assessed the results from the assessments, determined the root causes and specified the corrective actions. All corrective actions have been completed.

The team noted that within the past year there has been seven independent DOE oversight activities by the FR. The FR surveillances resulted in three findings, two observations, and two good practice annotations. Although the surveillances were not directly related to LDR oversight activities, the number of FR surveillances demonstrates an appropriate level of RL oversight of contractor programs and daily activities.

No issues were found.

#### **4.0 FINDINGS AND OBSERVATIONS**

##### **4.1 NO FINDINGS OR OBSERVATIONS WERE IDENTIFIED**

#### **5.0 PERSONNEL CONTACTED**

D. G. Saueressig, ECO/FHI  
D. E. Faulk, ECO/FHI  
P. J. Crane, Environ. Mgr./FHI  
R. A. Monlux, NCO/FHI  
F. S. Hubbard, OPS/FHI