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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

05-AMRC-0428

SEP 8 2005

Mr. Nicholas Ceto, Program Manager
Office of Environmental Cleanup
Hanford Project Office
U.S. Environmental Protection Agency
309 Bradley Blvd, Suite 115
Richland, Washington 99352

RECEIVED
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EDMC

Dear Mr. Ceto:

**TRANSMITTAL OF THE APPROVED HORSESHOE LANDFILL (WASTE SITE 600-270)
WASTE MANAGEMENT PLAN**

Attached is the U.S. Environmental Protection Agency (EPA) approved Horseshoe Landfill Waste Management Plan (WMP). This WMP governs the management of waste generated as a result of the remediation activities at the 600-270 waste site (commonly known as the Horseshoe Landfill) located on the Fitzner-Eberhardt Arid Lands Ecology (ALE) Reserve. This waste site is part of the 1100-IU-1 Operable Unit.

Horseshoe Landfill was remediated in 1994 under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The 1100 Area Record of Decision (ROD) was issued in 1993, and governed the cleanup of the 1100-EM-1, 1100-EM-2, 1100-EM-3, and 1100-IU-1 Operable Units. In 1996, a final closeout report was issued, and the 1100 Area waste sites were deleted from the National Priorities List (NPL).

Following deletion from the NPL, various sampling events occurred at the Horseshoe Landfill between 1998 and 2003. The bulk of these sampling efforts are described in the "Evaluation of Risk to Ecological Receptors from DDT at the Horseshoe Landfill," DOE-RL-2002-35, Rev. 0. Based on sample results, the levels of residual dichlorodiphenyl trichloroethane (DDT) in the soil in portions of the landfill exceed the cleanup level. Evaluation of the new data gathered from these sampling events indicates that further remediation is necessary under CERCLA. The U.S. Department of Energy, Richland Operations Office (RL) directed Bechtel Hanford, Inc. (BHI) to perform cleanup actions in the waste site as described in the approved Richland Environmental Restoration Project Fiscal Year 2005/2006 Detailed Work Plan.

As previously discussed with you, issuance of EPA's letter to file to document non-significant changes to the 1100 Area ROD, and this WMP serve as the applicable CERCLA documents to allow disposal to the Environmental Restoration Disposal Facility to comply with the "Environmental Restoration Disposal Facility Waste Acceptance Criteria," BHI-00139, Rev. 4.

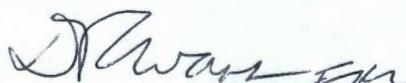
Mr. Nicholas Ceto
05-AMRC-0428

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If you have any questions, please contact me, or your staff may contact Jamie Zeisloft, of my staff, on (509) 372-0188.

Sincerely,


Leif Erickson, Assistant Manager
for the River Corridor

AMRC:JHZ

Attachment:
Horseshoe Landfill Waste Management Plan

cc w/attach:

J. W. Donnelly, WCH

D. R. Einan, EPA

R. J. Landon, WCH

J. B. Price, Ecology

Administrative Record (Post Decisional File,
1100-IU-1 Operable Unit, 1100 Area)

Horseshoe Landfill Waste Management Plan

INTRODUCTION

This waste management plan governs the management of waste generated as a result of the remediation activities at the 600-270 waste site (commonly known as the Horseshoe Landfill) located on the Fitzner-Eberhardt Arid Lands Ecology (ALE) Reserve (Figure 1). This waste site is approximately 2.8 ha (6.9 acres), and is part of the 1100-IU-1 Operable Unit.

Horseshoe Landfill was remediated in 1994 under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA). The 1100 Area Record of Decision (ROD) was issued in 1993, and governed the cleanup of the 1100-EM-1, 1100-EM-2, 1100-EM-3, and 1100-IU-1 Operable Units. In 1996, a final closeout report was issued, and the 1100 Area waste sites were deleted from the National Priorities List (NPL) (61 Federal Register 510019).

Following deletion from the NPL, various sampling events occurred at the Horseshoe Landfill between 1998 and 2003. The bulk of these sampling efforts are described in the *Evaluation of Risk to Ecological Receptors from DDT at the Horseshoe Landfill*, DOE-RL-2002-35, Rev. 0 (DOE/RL 2002). Based on sample results, the levels of residual dichlorodiphenyl trichloroethane (DDT) in the soil in portions of the landfill exceed the cleanup level of 1 parts per million (ppm) (Figure 2). This was the cleanup level established for DDT in 1994 in accordance with the ROD by the U. S. Department of Energy, Richland Operations Office (RL), U. S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology) based on *Washington Administrative Code* (WAC) 173-340-740 Method A.

The new data gathered from these sampling events indicates that further remediation of soil contaminated with DDT is necessary at the Horseshoe Landfill to meet ROD requirements. RL has directed the cleanup of the Horseshoe Landfill, and has authorized Bechtel Hanford, Inc. (BHI) to perform cleanup actions in the waste site as described in the approved Richland Environmental Restoration Project Fiscal Year 2005/2006 Detailed Work Plan (DOE/RL 2004).

EPA will issue a memo-to-file to document non-significant changes to the 1100 Area Record of Decision (EPA 2005). The memo-to-file shall be placed in the administrative record.

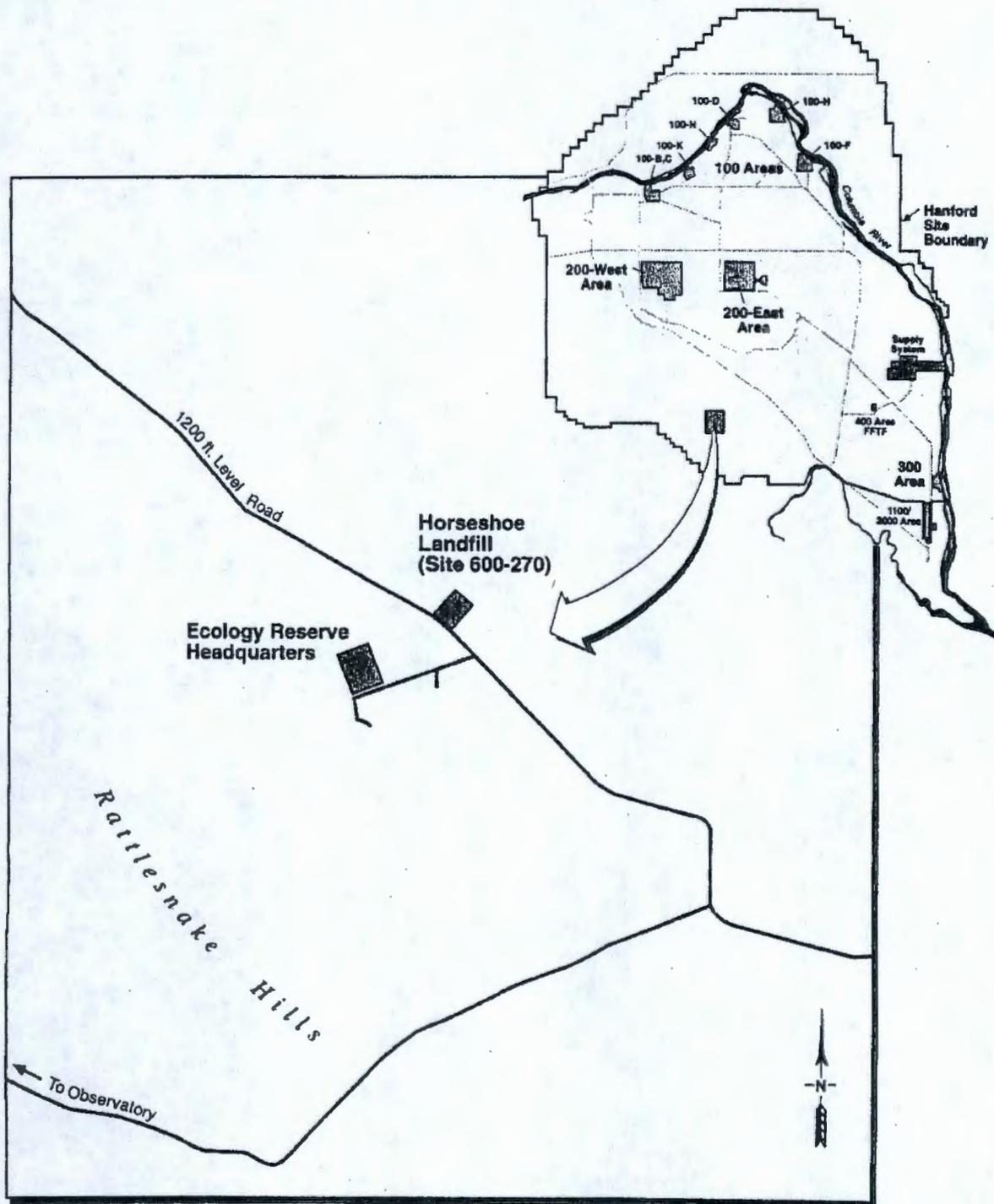
WASTE STREAMS AND CLEANUP LEVEL

The primary waste stream for the horseshoe landfill is DDT-contaminated soil. Other projected waste streams include nonhazardous, nondangerous miscellaneous solid waste; used oil and hydraulic fluids; decontamination fluids; used batteries, and sample waste. The estimated quantity of DDT contaminated soil is approximately 12,250 metric tons (13,500 U.S. tons).

Based on updated DDT cleanup levels for protection of ecological receptors, the parties have agreed to a cleanup level of 0.75 ppm. This level is identified in WAC 173-340, Table 749-1. While this value does not necessarily trigger a cleanup action, it is the cleanup level agreed to for this action to ensure protectiveness in the absence of a site-specific model.

Horseshoe Landfill Waste Management Plan

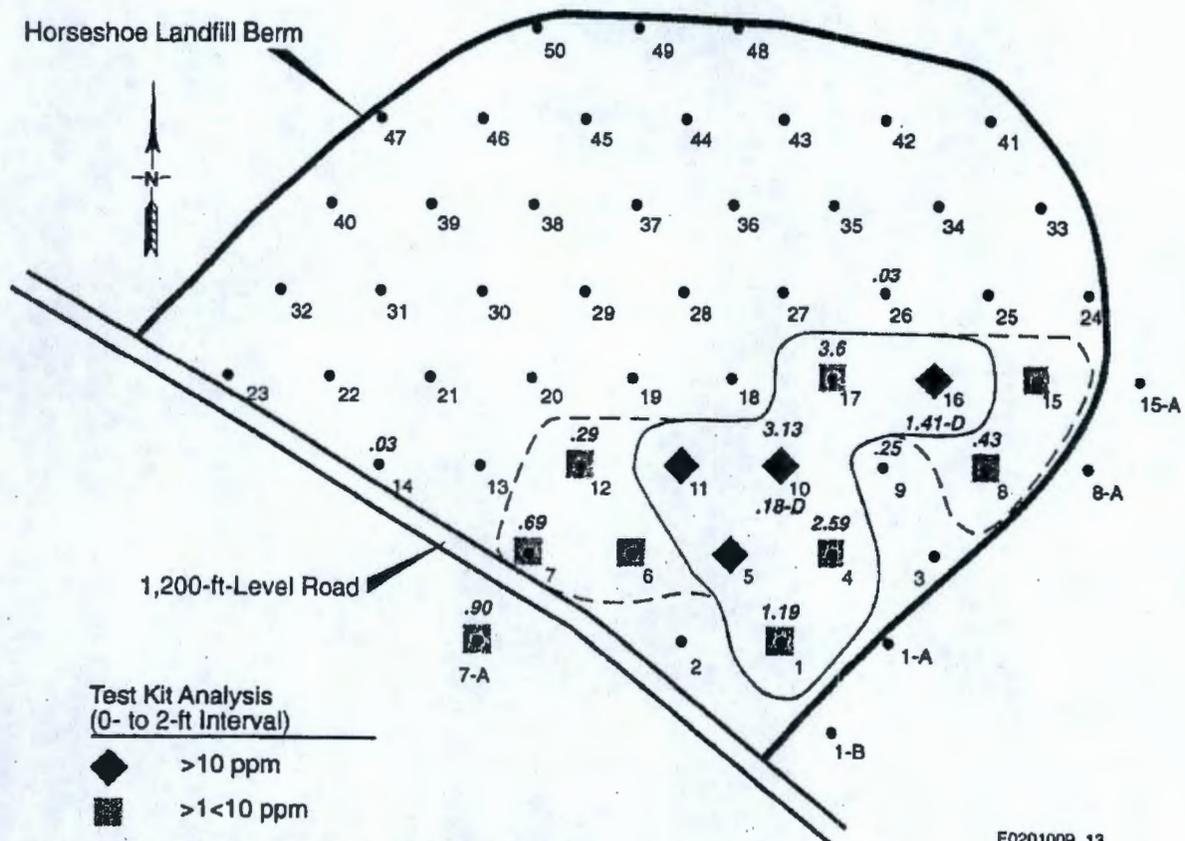
Figure 1. 600-270 Waste Site (Horseshoe Landfill).



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Horseshoe Landfill Waste Management Plan

Figure 2. Levels of Residual Dichlorodiphenyl Trichloroethane in Soil.



**Test Kit Analysis
(0- to 2-ft Interval)**

- ◆ >10 ppm
- >1<10 ppm

NOTE: At sites 10 and 16, concentrations at 2- to 4-ft interval were >1<10 ppm.

Laboratory Analysis

- 0.00 0- to 2-ft Interval
- 0.00-D 2- to 4-ft Interval
- - - Outer Contour Line Based on Test Kit Analysis >1 ppm (4,300 sq. m, 1.06 ac.)
- Inner Contour Line Based on Laboratory Analysis ≥1 ppm (2,555 sq. m, 0.63 ac.)

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Horseshoe Landfill Waste Management Plan

WASTE GENERATION AND MANAGEMENT

All waste generated will be managed in accordance this Waste Management Plan and the contractor Site Specific Waste Management Instruction (SSWMI) as required by BHI-EE-10, *Waste Management Plan*. For the purposes of this CERCLA cleanup action, the Horseshoe Landfill and the adjacent surrounding area to support the operations are considered the CERCLA onsite area. A map of the onsite area will be posted at the site. The Area of Contamination (AOC) will be the boundary of the Horseshoe Landfill and a map will be posted showing the AOC.

Additionally, CERCLA 104(d)(4) allows two or more non-contiguous facilities, reasonably-related on the basis of geography, or on the basis of the threat or potential threat to public health, welfare, or the environment to be treated as one for response purposes and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without having to obtain a permit. Based on EPA's memo-to-file to document non-significant changes to the 1100 Area ROD, the Environmental Restoration Disposal Facility (ERDF), located in Hanford's 200 Area, is the selected disposal facility for the waste generated, and ERDF and the 1100-IU-1 Operable Unit are considered to be a single site for response purposes (EPA 2005).

Issuance of the EPA's letter to file to document non-significant changes to the 1100 Area ROD and EPA's approval of this waste management plan serve as the applicable CERCLA documents to allow disposal to ERDF to comply with the *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, BHI-00139, Rev. 4 (BHI 2002).

1.1 ANALYTICAL WASTE

Samples may be sent to an offsite laboratory for analysis. Field sampling instructions, handling, and chain of custody will be performed in accordance with BHI-EE-01, *Environmental Investigations Procedures*.

Pursuant to 40 *Code of Federal Regulation* (CFR) 300.440(a)(5), remedial project manager approval will be obtained before returning unused samples from offsite laboratories. Approval of this waste management plan constitutes remedial project manager approval for shipment of unused samples from offsite laboratories to the waste site of origin or ERDF.

1.2 WASTE MINIMIZATION

Waste materials will be recycled, reused, or reclaimed when feasible. Introduction of clean materials into the AOC and contamination of clean materials will be minimized to the extent practical. Waste minimization will comply with the BHI-00099, "Environmental Restoration Contractor Waste Minimization and Pollution Prevention Plan", Revision 3 (BHI 1999).

Horseshoe Landfill Waste Management Plan

WASTE HANDLING, PACKAGING, AND LABELING

Materials requiring collection will be placed in containers appropriate for the material and the receiving facility. Containers will be properly marked and labeled as outlined in the contractor SSWMI or BHI-EE-10. Containerized hazardous/dangerous waste moved outside the AOC shall meet the substantive requirements in WAC 173-303, *Dangerous Waste Regulations*, as applicable.

WASTE STORAGE

Waste generated from the remediation activities associated with the Horseshoe Landfill will be managed in the AOC. Containerized waste can be managed in the AOC or appropriate storage locations within the onsite area. Materials available for recycling will be stored in accordance with the appropriate recycling facility requirements. Should any waste stream require treatment or not meet the ERDF waste acceptance criteria, EPA will be consulted on alternate storage and disposal locations.

WASTE DISPOSAL/TRANSPORTATION

DDT contaminated soil shall be disposed to the ERDF and meet the waste acceptance criteria. Materials available for recycling will be sent to the Hanford Centralized Recycling Center. Other miscellaneous solid waste such as paper, plastic, etc., that is not contaminated shall be disposed a regulatory household trash in accordance with applicable procedures.

Shipments of waste shall comply with the appropriate packaging, marking, and labeling requirements for transportation in accordance with U.S. Department of Transportation (DOT) 49 CFR, BHI-EE-12, *ERC Transportation Manual*, and the contractor SSWMI.

DECONTAMINATION FLUIDS

Should decontamination of equipment be necessary, dry methods will be employed first and shall be performed within the AOC. Wet decontamination methods shall be considered if dry methods are ineffective, and also performed in the AOC. Raw water or potable water shall be used and the amount of water used shall be minimized. Soaps and detergents shall not be used.

DUST SUPPRESSION

Water will be applied during excavation, container loading, and backfilling operations to minimize fugitive dust. The use of fixatives will be considered based on site conditions.

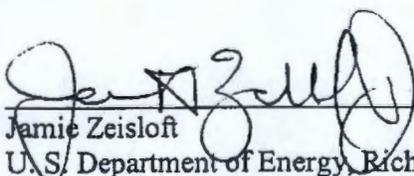
Horseshoe Landfill Waste Management Plan

Application of fixatives, if used, shall be directed by the contractor. If fixatives are not effective, other measures shall be considered (e.g., soil cement).

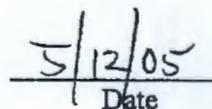
VERIFICATION SAMPLING

Verification sampling will be performed on the excavated portion of the Horseshoe Landfill to demonstrate the cleanup level of 0.75 ppm DDT is achieved. A sampling work instruction will be prepared outlining the sampling requirements, and will be provided to EPA for concurrence or approval. Following the sampling event and verification of data, a final report will be prepared.

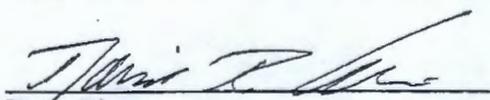
APPROVALS



 Jamie Zeisloft
 U. S. Department of Energy, Richland Operations Office



 Date



 Dave Einan
 U. S. Environmental Protection Agency
 EPA Hanford Project Office
 Region 10



 Date

REFERENCES

- 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," *Code of Federal Regulations*, as amended.
- 49 CFR, "Requirements for the Transportation of Hazardous Materials," *Code of Federal Regulations*, as amended.
- 61 FR 510019, "Superfund Site Final Closeout Report - U.S. Department of Energy Hanford 1100 Area, Richland, Washington," *Federal Register*, Vol. 61, No. 190, p. 035248.
- BHI, 1999, *Environmental Restoration Contractor Waste Minimization and Pollution Prevention Plan*, BHI-00099, Rev. 3, Bechtel Hanford, Inc., Richland, Washington.
- BHI, 2002, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, BHI-00139, Rev. 4, Bechtel Hanford, Inc., Richland, Washington.
- BHI-EE-01, *Environmental Investigations Procedures*, Bechtel Hanford, Inc., Richland, Washington.

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BHI-EE-10, *Waste Management Plan*, Bechtel Hanford, Inc., Richland, Washington.

BHI-EE-12, *ERC Transportation Manual*, Bechtel Hanford, Inc., Richland, Washington.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601, et seq.

DOE/RL, 2002, *Evaluation of Risk to Ecological Receptors from DDT at the Horseshoe Landfill*, DOE/RL-2002-35, Rev. 0, U.S. Department of Energy, Richland, Washington

DOE/RL, 2004, Richland Environmental Restoration Project Fiscal Year 2005/2006 Detailed Work Plan, DOE/RL-97-44, Rev. 6, Vol. II, U.S. Department of Energy, Richland, Washington.

EPA, Ecology, and DOE, 1993, *1100 Area Declaration of the Record of Decision, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

EPA, 2005, *Letter to File Documenting Non-Significant Changes to the 1100 Area Declaration of the Record of Decision, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle Washington

WAC 173-303, "Dangerous Waste Regulations", *Washington Administrative Code*, as amended, Washington State Department of Ecology, Olympia, Washington.

WAC 173-340, "Model Toxics Control Act Cleanup Regulation", *Washington Administrative Code*, as amended, Washington State Department of Ecology, Olympia, Washington.