

ACTION MEMORANDUM**SITE NAME AND LOCATION**

U.S. Department of Energy
200 Area, Burial Ground 218-W-4C Waste Retrieval
Hanford Site
Benton County, Washington

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I. PURPOSE

The purpose of this Action Memorandum is to document approval of a time-critical removal action described herein for disposal at the Environmental Restoration Disposal Facility (ERDF) of low level and mixed low level waste retrieved from Burial Ground 218-W-4C, located in the U.S. Department of Energy's (DOE's) 200 Area, Hanford Site, Benton County, Washington.

This action meets the criteria for initiating a removal action under the National Contingency Plan (NCP), 40 CFR 300.415.

II. SITE CONDITIONS AND BACKGROUND

The Hanford Site is a Federal facility operated by DOE. The Hanford 200 Area was added to the National Priorities List in November 1989; the CERCLIS ID for the Hanford 200 Area is WA1890090078.

In 1970, the U.S. Atomic Energy Commission (AEC) defined transuranic (TRU) waste as a separate waste category and declared that TRU waste must be retrievable. Suspect-TRU waste (identified as waste known or suspected to contain TRU elements) was separated from low-level waste (LLW) and retrievably stored in the 200 Area burial grounds. In 1973, the AEC changed the definition of TRU waste to waste containing greater than 10 nCi/g of TRU radionuclides. The definition of TRU was changed again in 1984 to specify only waste containing greater than 100 nCi/g of TRU radionuclides; therefore, some of the suspect TRU waste initially placed in storage is now defined as LLW. The Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act specified that only waste containing greater than 100 nCi/g of TRU radionuclides can be disposed of at WIPP, a geologic repository in New Mexico designed for disposal of TRU waste.

Since 1970, approximately 37,400 suspect-TRU waste containers have been placed in retrievable storage at the Hanford Site. At the time the material was placed in storage, storage was not expected to exceed 20 years. The majority of the waste containers in Low Level Burial Ground 218-W-4C are stacked vertically on asphalt pads in earth-covered trenches.

The waste container contents include failed process equipment such as pumps, resin columns, and tanks; laboratory and room trash including paper, plastics, glassware, cloth, and solidified liquids; decontamination and demolition (D&D) rubble including concrete, piping, and soils.

DOE is required to retrieve, designate pursuant to WAC 173-303, and (where applicable) treat, the retrievably stored waste from the 200 Area burial grounds pursuant to a schedule contained in a settlement agreement with the Washington Department of Ecology (Ecology). The settlement agreement provides for adding the referenced work to the M-91 milestone series of the Hanford Federal Facility Agreement and Consent Order (HFFACO). This Time-Critical Removal Action is for the disposal of waste determined to be LLW and MLLW during retrieval of approximately 18,000 drums (55 gallon) of suspect TRU waste stored in Burial Ground 218-W-4C. This action does not alter or otherwise affect DOE's obligations pursuant to the settlement agreement or the M-91 milestones that become effective pursuant to the settlement agreement. The remaining volumes of suspect TRU waste stored in burial grounds 218-W-3A, 218-E-12B and 218-W-4B and the 400 other containers of suspect TRU waste in 218-W-4C may be analyzed in a follow-on Engineering Evaluation/Cost Analysis.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The low level and mixed low level waste being retrieved from Burial Ground 218-W-4C is contaminated with hazardous substances, including radionuclides. The National Contingency Plan (NCP), 40 CFR, Section 300.415(b)(2), establishes factors to be considered in determining the appropriateness of a removal action. Those factors include:

Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.

Hazards of 218-W-4C supporting action:

Burial Ground 218-W-4C contains approximately 18,000 drums (55 gallon) and 400 other containers of a mixture of suspect TRU waste. The plutonium inventory within the containers stored in 218-W-4C may total approximately 380,000 grams, which represents nearly three quarters of the plutonium inventory within all the Post-1970 Suspect TRU Burial Grounds. The rapid recovery of these waste containers will be enhanced by both the disposition of TRU Waste to the Central Waste Complex (CWC) and the protective, cost-efficient disposition of the low level and mixed low level waste fractions to ERDF. This time-critical action provides for the disposition of all low level and low level mixed wastes to ERDF and facilitates the immediate use of lined trenches for disposal of low level waste rather than the potentially more costly and less protective approach of disposal in unlined trenches.

In addition, many drums within Burial Ground 218-W-4C contain soils exhumed from the 216-Z-9 Crib. These drummed soils contain approximately 40,000 grams of plutonium and are a known source of volatile organic compounds including carbon tetrachloride and its degradation products. Removal of these drums that contain predominantly TRU waste, but that are commingled with low level waste drums, mitigates the potential for releases from these vapor laden drums to the soil column and potentially the groundwater.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from the low level and mixed low level waste retrieved from Burial Ground 218-W-4C Waste may present an imminent and substantial endangerment to public health, welfare, or the environment. The response action selected herein is necessary to protect the public health, welfare, or the environment from actual or threatened releases of hazardous substance into the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Technical Approach

The contents of Burial Ground 218-W-4C are being retrieved in accordance with a settlement agreement between the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology. The wastes will fall into three categories: TRU, LLW, and mixed LLW (MLLW). Mixed LLW is low level radioactive waste that also contains hazardous waste. The TRU waste retrieved and transferred to CWC (and eventually to WIPP) from Burial Ground 218-W-4C is outside the scope of this removal action.

In general, the process steps of the retrieval project are to expose a drum on the asphalt pad and identify the container from the disposal history and review the existing process knowledge. If previous nondestructive assay (NDA) data on the drum report plutonium content of greater than 2 grams, the drum is staged for shipment to CWC as TRU waste. Drums with plutonium content less than 2 grams are removed from the asphalt pad and placed in the mobile assay facility at the burial ground to obtain the weight of the container and NDA analysis. If the drum is confirmed as low level waste, it will be prepared and transported to ERDF for disposal, provided it meets the ERDF waste acceptance criteria. If the waste designates as mixed low level waste, it will be evaluated as to whether it meets land disposal restrictions (LDRs) and if not, whether appropriate treatment is available at ERDF.

It is anticipated that approximately 90% of the suspect MLLW is debris waste and will be treated to meet LDRs via macroencapsulation prior to disposal at ERDF. The remaining 10% of the retrieved suspect MLLW will be transported to CWC pending additional characterization. Treatment of this MLLW will be accomplished through the use of existing commercial contracts. Disposal at ERDF will be the preferred path, provided that the waste meets ERDF waste acceptance criteria. If the waste doesn't meet the ERDF WAC, it will be evaluated for disposal in the mixed low level waste trenches in the LLBG.

Secondary waste generated by this removal action, such as protective clothing, contaminated soils, and other waste that meets or can be treated to meet the WAC for ERDF may be disposed at ERDF. If ERDF cannot be used, DOE may, upon EPA approval, use the Central Waste Complex (CWC) and lined trenches in the LLBG as environmentally protective management

facilities, provided this waste and these facilities are managed in accordance with applicable requirements, including requirements for off site facilities.

This removal action is expected to provide valuable information for any future investigation and cleanup of radioactive waste burial grounds within the 200 West Area. Data gathered during this action is expected to provide valuable information on the integrity of waste containers, retrieval operations, treatment requirements for treated waste, and development of appropriate alternatives for any future cleanup.

B. Applicable or Relevant and Appropriate Requirements

As required by CERCLA, removal actions shall, to the extent practicable considering the exigencies of the situation, satisfy ARARs. The selected alternative (treatment as necessary to meet LDRs and ERDF WAC/ERDF disposal) will comply with all of the identified Federal and state ARARs. No CERCLA ARAR waivers are being requested. The ARARs identified for this removal action are as follows:

- *Hazardous Waste Management Act of 1976 (Revised Code of Washington [RCW] 70.105) and "Dangerous Waste Regulations" (WAC 173-303)* – This RCRA-authorized state program is applicable to the identification and generation of dangerous waste (which includes all federally regulated hazardous waste under RCRA) and the storage, transportation, treatment, and disposal of the wastes generated during the removal action that designate as dangerous waste.
- "Land Disposal Restrictions," *Washington Administrative Code (WAC) 173-303-140* – Establishes the treatment requirements and disposal prohibitions for dangerous waste, including the invocation of Federal LDRs identified in *40 Code of Federal Regulations (CFR) 268*.
- "Land Disposal Restrictions," *40 CFR 268* – Establishes treatment standards for LDR hazardous waste (*40 CFR 268.40*) and hazardous debris (*40 CFR 268.45*), including treatment of UHCs (*40 CFR 268.48*), where applicable.

C. Project Schedule

This removal action is expected to begin in April 2004 and to be completed by October 1, 2007. This Action Memorandum requires DOE to submit the following reports/documents to the U.S. Environmental Protection Agency (EPA) for review and approval:

- Removal action work plan that shall describe how DOE will comply with this Action Memorandum, including ARARs. The work plan must be approved prior to shipping wastes to ERDF.
- Treatment plan prior to treatment of waste for disposal at the ERDF. This plan must be approved prior to initiating treatment.

Notice of availability of the administrative record file for this time critical removal action will be published in a local newspaper within 60 days. Additionally, a 30 day public comment period will be provided, as appropriate, following availability of the administrative record.

The disposal of the remaining volumes of LLW and MLLW retrieved from burial ground 218-W-4C, and from burial grounds 218-W-3A, 218-E-12B, and 218-W-4B may be analyzed in a follow-on Engineering Evaluation/Cost Analysis.

D. Cost

The expected cost of this removal action is \$12.8M. Department of Energy is responsible for all costs of the alternatives. No exemption from statutory time and spending limits is required. The statutory limits apply to CERCLA fund-financed removal actions and not to removals funded by federal facilities.

VI. EXPECTED CHANGE SHOULD ACTION BE DELAYED OR NOT TAKEN

The expected change to the waste retrieved from Burial Ground 218-W-4C, should action be delayed or no action taken, would be that the waste would be put into storage, or, for LLW to be disposed in unlined trenches. Because the waste containers would continue to deteriorate, there would continue to be a potential that a release could expose site workers to hazardous substances over time. Additionally, workers will continue to accumulate dose from monitoring and inspecting the containers in storage.

Delay or disapproval of this proposed action will allow the potential for release of hazardous substances into the environment and increases the risk of release to the environment. Failure to act will increase/prolong the threats of environmental exposure.

VII. OUTSTANDING POLICY ISSUES

None.

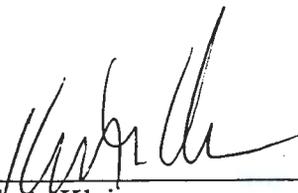
VIII. CERCLA SECTION 104(d)(4) DETERMINATION

The preamble to the NCP states that when noncontiguous facilities are reasonably close to one another and the wastes at these sites are compatible for a selected treatment or disposal approach, CERCLA Section 104(d)(4) allows the lead agency to treat these related facilities as one site for response purposes and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without obtaining a permit. Burial Ground 218-W-4C and ERDF are reasonably close to one another and the wastes at these sites are compatible with the selected management and disposal of the waste and are therefore considered to be a single site for response purposes.

IX. RECOMMENDATION

Treatment (as required) and disposal of the LLW and MLLW at ERDF is the selected removal action. Movement of the TRU waste to the CWC and eventually to WIPP is not within the scope of this action. The alternative is protective of human health and the environment and is cost effective. This removal action addresses the mandate for permanence and treatment to the maximum extent practicable. This document presents the selected removal action for the 200 Area Burial Ground 218-W-4C Waste Retrieval, developed in accordance with CERCLA as amended, and not inconsistent with the NCP.

Signature sheet for the DOE Hanford Site Action Memorandum covering the 200 Area Burial Ground 218-W-4C Waste Retrieval. This action is between the U.S. Department of Energy and the U.S. Environmental Protection Agency, with concurrence by the Washington State Department of Ecology.



Keith A. Klein
Manager, Richland Operations Office
U.S. Department of Energy

MAY 7 2004

Date

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Michael Gearheard
Director, Office of Environmental Cleanup
U.S. Environmental Protection Agency, Region 10

Date

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Michael Wilson
Program Manager, Nuclear Waste Program
Washington State Department of Ecology

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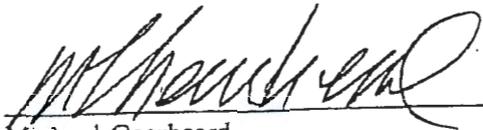


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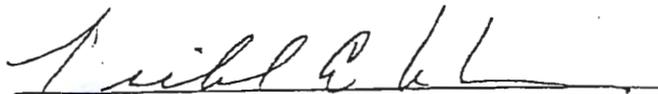


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Michael Wilson
Program Manager, Nuclear Waste Program
State of Washington Department of Ecology

04-19-2004

Date