



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

September 29, 2010

Mr. Matthew McCormick, Manager  
Richland Operations Office  
United States Department of Energy  
P.O. Box 550, MSIN: A7-50  
Richland, Washington 99352

Re: "Explanation of Significant Differences for the Record of Decision for the USDOE Hanford 1100 Area in Benton County, Washington"

Dear Mr. McCormick:

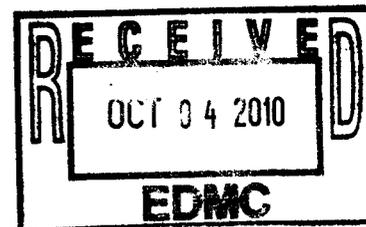
Enclosed is a signed copy of the Explanation of Significant Differences (ESD) for the Hanford 1100 Area Record of Decision. This ESD modifies institutional controls requirements consistent with current United States Environmental Protection Agency (EPA) guidance.

This copy includes signatures from the United States Department of Energy, EPA, and the Department of Ecology. Dave Einan from EPA picked up the Department of Ecology signature sheet with my original signature at our office on September 28, 2010.

If you have any questions, you may call John Price at 509-372-7921 or Brenda Jentzen at 509-372-7912.

Sincerely,

Jane A. Hedges  
Program Manager  
Nuclear Waste Program



Enclosure

cc w/enc: Rich Holten, USDOE-RL  
Steve Weil, USDOE-RL  
Rob Piipo, MSA

Environmental Portal  
Administrative Record: 1100 Area

cc w/signature page:

Dennis Faulk, EPA  
Dave Einen, EPA  
Terry Noland, MSA  
Stuart Harris, CTUIR

Gabriel Bohnee, NPT  
Russell Jim, YN  
Susan Leckband, HAB  
Ken Niles, ODOE

**Explanation of Significant Differences  
USDOE Hanford 1100 Area  
Benton County, Washington**

**I. Introduction**

This document presents an Explanation of Significant Differences (ESD) for the Record of Decision (ROD) for the USDOE Hanford 1100 Area in Benton County, Washington. The U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology) signed the ROD in September 1993.

This ESD, prepared in accordance with Section 117(c) of CERCLA and 40 CFR 300.435(c)(2)(I), documents significant differences to the selected remedies in the ROD. In summary, this ESD clarifies the institutional control requirements for the Horn Rapids Landfill, one of the sites addressed by this ROD.

This ESD will become part of the Administrative Record for the USDOE Hanford 1100 Area NPL site. The Administrative Record is located at:

**U.S. Department of Energy**  
Richland Operations Office  
Administrative Record Center  
2440 Stevens Center  
Richland, Washington 99354

This ESD will also be available at the Information Repositories at:

**INFORMATION REPOSITORIES**

**University of Washington**  
Suzzallo Library  
Government Publications Room  
Seattle, Washington 98195

**Gonzaga University**  
Foley Center  
E. 502 Boone  
Spokane, Washington 99258

**Portland State University**  
Branford Price Millar Library  
Science and Engineering Floor  
934 SW Harrison  
Portland, Oregon 97207

**DOE Richland Public Reading Room**  
Washington State University, Tri-Cities  
Consolidated Information Center, Room 101L  
2770 University Drive  
Richland, WA 99354

## **II. Summary of Site History, Contamination Problems and Selected Remedy**

The Hanford Site was established in 1943 to produce nuclear material for national defense. The Hanford 1100 Area NPL Site (1100 Area) consists of two, non-adjacent areas located in the southern portion of the Hanford Reservation and covers less than 5 square miles. The majority of the 1100 Area is located adjacent to the City of Richland. The other portion is located on the Fitzner-Eberhardt Arid Lands Ecology (ALE) Reserve, approximately 15 miles northwest of Richland.

The portion near Richland contains the central warehousing and transportation distribution center for the entire Hanford Site. Waste sites included the Horn Rapids Landfill (Landfill), french drains, underground tanks, and a sand pit where up to 15,000 gallons of waste battery acid from vehicle maintenance may have been disposed. The portion on ALE is a former NIKE missile base and control center. The missile base contained all facilities necessary for missile launching and maintenance, as well as living quarters for personnel. The U.S. Army closed and decommissioned the base in the 1960's.

The 1100 Area was placed on the NPL in November 1989 based on its proximity to groundwater wells used to supply drinking water to Richland. In 1989, DOE, with oversight provided by EPA and Ecology, began a remedial investigation (RI) to characterize the nature and extent of contamination and to assess potential risks to human health and the environment.

The major findings of the investigation included:

- Approximately 130 cubic yards of soil in a depression were contaminated in an unrecorded spill with bis(2-ethylhexyl)phthalate at up to 25,000 mg/kg.
- Approximately 165 cubic yards of soil in an area adjacent to a parking lot where stormwater runoff collected was contaminated with polychlorinated biphenyls (PCBs) up to 42 mg/kg.
- The Landfill was used for disposal of office and construction waste, asbestos, sewage sludge, and fly ash. Asbestos-containing debris was found throughout the Landfill, as well as a localized area of soil contaminated with PCBs up to 100 mg/kg.
- Groundwater in the vicinity of the Landfill was found to be contaminated with trichloroethene and nitrate above MCLs, although these contaminants were not found in the Landfill itself. The same contaminants were found beneath an adjacent, upgradient facility.

Based on the results of the RI and risk assessment, a ROD was signed on September 30, 1993. The following major components of the selected remedy were implemented pursuant to the ROD:

- Soil and debris contaminated above cleanup standards were excavated and disposed of off-site at a permitted facility.
- Contaminated soil from the bis(2-ethylhexyl)phthalate spill were incinerated at an off-site facility.
- The Landfill was closed as an Asbestos Landfill in accordance with the Asbestos NESHAP (40 CFR 61.151) to prevent exposure to asbestos-containing dusts.
- A groundwater monitoring program would be implemented until contaminant levels allowed for unlimited use and unrestricted exposure.
- Institutional controls (ICs) were implemented for the Landfill and the groundwater. DOE controlled access and use of the site for the duration of the cleanup, including enforcement of restrictions on the drilling of new groundwater wells in the plume or its path until the Remedial Action Objectives were attained. In addition, DOE recorded a deed notation for the Horn Rapids Landfill property as specified in the asbestos NESHAP (40 CFR 61).

All remedial actions were completed by December 1995. The final closeout report signed in July 1996 documents that the objectives of the remedial actions were met. The contaminant levels in the groundwater have since decreased to where it is no longer necessary to maintain institutional and land use controls associated with groundwater exposure or use.

### **III. Description of the Significant Difference and the Basis for those Differences**

Institutional controls are being relied upon to protect human health and the environment from contaminants remaining in the Landfill. Land Use Controls will be maintained until the concentrations of hazardous substances (asbestos) in the soil are at such levels to allow for unrestricted use and exposure. The ROD required that the Landfill be closed as an Asbestos Landfill in accordance with the Asbestos NESHAP (40 CFR 61.151). The Asbestos NESHAP, in turn, required that DOE install and maintain a fence and signs around the Landfill and a notation on the deed for the Landfill property. However, the ROD lacks some detail on site-specific ICs including the geographic locations where ICs are required and the objective of some controls or restrictions. The ROD is also lacking detail on how these ICs will be maintained, and monitored while DOE has control of the property as well as requirements to ensure that the ICs will remain in place and effective should the property be transferred out of DOE's control. This ESD clarifies the site-specific ICs and establishes the requirements for how DOE will maintain and monitor the site-specific requirements.

This ESD is also being prepared for the purpose of implementing EPA Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities dated May 3, 1999.

### **IV. Institutional Control Requirements**

DOE is responsible for implementing, maintaining, reporting on, and enforcing the institutional and land use controls. Although DOE may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other

means, DOE shall retain ultimate responsibility for remedy integrity and institutional controls in perpetuity.

The current implementation, maintenance, and periodic inspection requirements for the institutional controls at the Hanford Site are described in approved work plans and in the *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions* (DOE/RL-2001-41) that was prepared by DOE and approved by EPA and Ecology. The *Sitewide Institutional Controls Plan* requires that DOE notify EPA and Ecology immediately upon discovery of any activity that is inconsistent with the site-specific IC requirements or of any change in the land use or land use designation of a site. These requirements are applicable to the ICs at the Landfill. The *Sitewide Institutional Controls Plan* also specifies the implementation and maintenance actions that will be taken, including periodic inspections. DOE shall comply with the *Sitewide Institutional Controls Plan* as approved by EPA and Ecology.

DOE will control access to the Landfill property, including maintaining the fencing and signs, to prevent disturbance of the Landfill contents. The ICs are required to be maintained on the fenced area, which is shown in Figure 1.

DOE will prevent the development and use of the Landfill property for residential housing, elementary and secondary schools, or childcare facilities.

DOE will provide notice to EPA and Ecology at least six months prior to any transfer, sale, or lease of the Landfill property so that EPA and Ecology can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective institutional controls. For example, if the Landfill is transferred to a private entity, one such mechanism may be a restrictive covenant under the Washington Uniform Environmental Covenant Act. If it is not possible for DOE to notify EPA and Ecology at least six months prior to any transfer or sale, then the DOE will notify EPA and Ecology as soon as possible but no later than 60 days prior to the transfer or sale of any property subject to institutional controls. In addition to the land transfer notice and discussion provisions above, the DOE further agrees to provide EPA and Ecology with similar notice, within the same time frames, as to federal-to-federal transfer of property. DOE shall provide a copy of executed deed or transfer assembly to EPA and Ecology.

The ARARs established in the ROD are not modified by this ESD. The IC requirements established by this ESD are consistent with the EPA Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities.

## **V. State Agency Comments**

The Washington State Department of Ecology has reviewed this ESD and supports this clarification to the selected remedy.

## **VI. Public Participation Activities**

DOE will publish a notice of availability and a brief description of this ESD in the local newspaper, Tri-City Herald. DOE will send the ESD and a fact sheet summarizing the ESD to the Hanford Site electronic mailing list.

Please contact Mike Thompson of DOE at 509-373-0750, if you would like more information about this ESD.

## **VII. Affirmation of the Statutory Determinations**

DOE, EPA, and Ecology believe that the remedies, as modified by this ESD, remain protective of human health and the environment, comply with federal and state requirements that were identified in the ROD as applicable or relevant and appropriate to these remedial actions at the time of the original ROD, and are cost-effective. In addition, the remedies continue to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable for these sites.

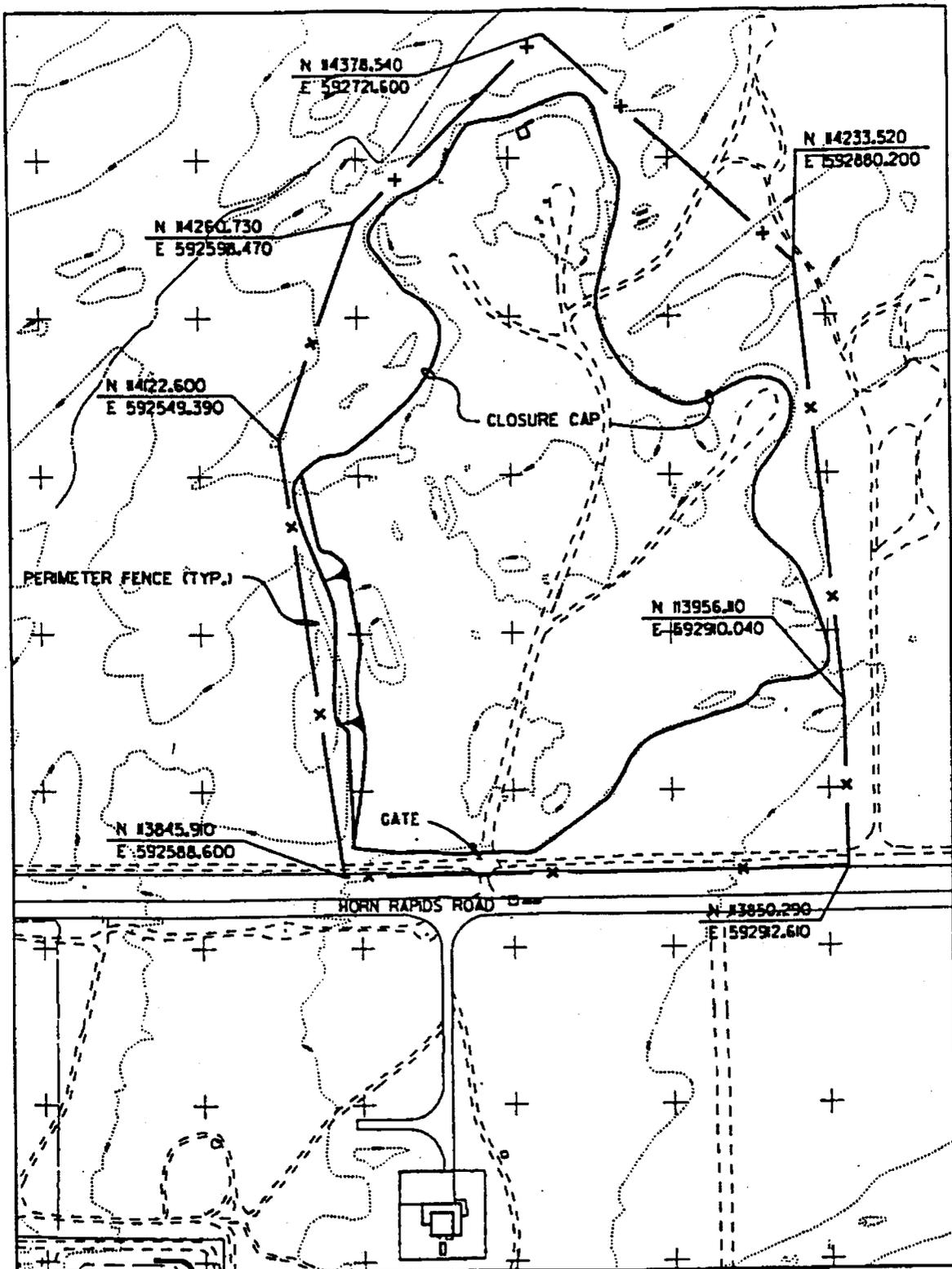


Figure 1. Fence and Cap at the Horn Rapids Landfill

Signature sheet for the Explanation of Significant Differences for the USDOE Hanford  
1100 Area between the U.S. Department of Energy and the U.S. Environmental Protection  
Agency, with concurrence by the Washington State Department of Ecology.



Matt McCormick  
Manager, Richland Operations  
U.S. Department of Energy

9/27/2010  
Date

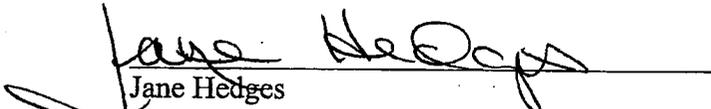
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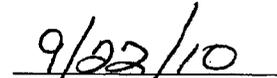


Daniel D. Opalski, Director  
Office of Environmental Cleanup  
U.S. Environmental Protection Agency

9/16/2010  
Date

Signature sheet for the Explanation of Significant Differences for the USDOE Hanford  
1100 Area between the U.S. Department of Energy and the U.S. Environmental Protection  
Agency, with concurrence by the Washington State Department of Ecology.

  
Jane Hedges  
Program Manager, Nuclear Waste Program  
Washington State Department of Ecology

  
Date