



Cleanup Plan for Central Plateau Groundwater (200 ZP-1 Groundwater Operable Unit)

U.S. Department of Energy • Washington State Department of Ecology • U.S. Environmental Protection Agency

The U.S. Department of Energy (USDOE), the Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA), the Tri-Party Agreement (TPA) agencies, would like feedback on a plan that evaluates three approaches to the cleanup of contaminated groundwater on Hanford's Central Plateau. The area known as the 200-ZP-1 Operable Unit (OU) is contaminated primarily with carbon tetrachloride. Cleanup of the groundwater is needed, because it poses a potential future risk to human health.

Background

The 200-ZP-1 Operable Unit, located in the northern part of the 200 West Area, is one of four defined groundwater areas on the Hanford Central Plateau. From the 1940s through the 1980s, liquid wastes from materials used and produced at Hanford were disposed of in cribs and trenches that contributed to groundwater contamination in this area.

Carbon tetrachloride is the major contaminant present in 200-ZP-1 groundwater. This contaminant covers an area of approximately four square miles and ranges in depth from 180 to 400 feet below ground surface. Other contaminants include trichloroethylene, hexavalent chromium, nitrate, technetium-99, iodine-129 and tritium.

Cleanup activities to remove carbon tetrachloride from the soil began in 1992. In 1996 an interim cleanup action, a pump-and-treat system, was put in place to remove carbon tetrachloride from the groundwater. To date an estimated 10,500 kgs (24,000 lbs) of carbon tetrachloride have been removed from the groundwater and approximately 3.6 billion liters (975,000,000 gals) of groundwater have



been treated. This interim action will be kept in place until a final remedy is selected and implemented. The proposed final remedy is presented in this proposed plan.

Groundwater Cleanup

At Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) sites, such as Hanford, EPA's expectation is to return useable groundwater to beneficial use when practicable within a reasonable timeframe. The 200-ZP-1 OU groundwater meets the state's potable groundwater definition, which is as a potential source of domestic drinking water. Based on this decision, the preferred cleanup alternative for the 200-ZP-1 OU will attempt to restore the contaminated groundwater to support future use as a potential source of drinking water. Today USDOE uses institutional controls to prevent humans from using the groundwater. For example, USDOE does not allow groundwater wells to be installed for irrigation or drinking water use and restricts access to the site.

Public Comment

The Tri-Party Agencies want your feedback on the 200-ZP-1 Operable Unit Proposed Plan. The Public comment period will run from **July 21 through August 19, 2008.**



Cleanup Alternatives

The TPA agencies evaluated three alternatives to cleanup the 200-ZP-1 OU groundwater. The following cleanup objectives were used to develop a range of cleanup alternatives:

- Return the groundwater to beneficial use.
- Use institutional controls to prevent the use of groundwater until the desired cleanup levels are achieved. Institutional controls are administrative or legal restrictions, such as deed restrictions, that limit the potential for humans to be exposed to contamination.
- Ensure the Columbia River and its ecological resources are not negatively impacted.

The three cleanup alternatives are:

No Action Alternative

CERCLA requires a “no-action” alternative. Other alternatives are compared with this alternative. Since no action would be taken, this alternative would increase the potential for humans to come into contact with contaminated groundwater. This alternative requires no use of institutional controls and no cleanup or monitoring of contamination to be done.

Cost — \$0

Alternative 1: Institutional Controls and Monitored Natural Attenuation

This alternative is made up of two cleanup actions used to restore groundwater to the desired cleanup level and protect the public from contamination. Institutional controls would be in place to limit the potential for humans to be exposed to contaminated groundwater. Natural attenuation refers to the decrease in contamination that occurs over time from natural processes, e.g., radioactive decay, biodegradation, etc. These natural processes are monitored to ensure that contamination is decreasing as expected and if not, other cleanup actions may be needed. Institutional controls would be in place approximately 250 years, the estimated timeframe for the contamination to naturally decrease to a level safe for humans.

Cost — \$2.3M (present-value costs)

Time — 250 years

Alternative 2: Pump-and-Treat, Monitored Natural Attenuation, Flow-Path Control and Institutional Controls.

Four cleanup components make up Alternative 2. Groundwater pump-and treat technology would be used to capture, treat and reduce the groundwater contaminants. The primary contaminant, carbon tetrachloride, is expected to be reduced by approximately 95% and take about 25 years for this reduction to occur. For the remaining 5% of the carbon tetrachloride, natural attenuation processes would be used to reduce contamination to safe levels. The monitored natural attenuation process is expected to take an estimated 100 years to achieve acceptable contamination levels. To ensure the most effective use of pump-and-treat technology, flow-path control would be used. This control would help contain contamination on the Central Plateau and provide the time needed to remove contamination from the groundwater and maximize the natural attenuation processes. Institutional controls would be used as long as contamination was at unsafe levels for humans.

Cost — \$174M (present value costs)

Time — 125 years

Preferred Alternative

The Preferred Alternative is Alternative 2. The Agencies selected it based on its reliability over time, proven groundwater cleanup technologies and ability to best meet the CERCLA evaluation criteria. While it is the most costly alternative, it achieves the desired groundwater cleanup level in the shortest amount of time.

Next Steps

The TPA agencies will consider the public comments received on the Proposed Plan during the public comment period before deciding on a final cleanup alternative. **A 30-day public comment period will run from July 21 through August 19, 2008.** TPA agencies encourage you to obtain a copy of the Proposed Plan and provide comments on the cleanup alternatives.

The TPA agencies will respond in writing to public comments in a “responsiveness summary” that will be attached to the document detailing the final cleanup

Fact Sheet

alternative, the Record of Decision. The Record of Decision will be available at the Administrative Record (AR) and Public Information Repository

located at 2440 Stevens Center Place, Room 1101, Richland, WA. It can be viewed electronically from the AR website: <http://www2.hanford.gov/arpir/>

**Please submit
comments to:**

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To obtain a copy of the document call the Hanford Cleanup Line 1-800-321-2008.

**The Proposed Plan can be viewed on line at
<http://www5.hanford.gov/hanford/eventcalendar/> under Calendar Events – Public Comment Periods.**

The document is also available at the Hanford Public Information Repositories

Portland

Portland State University
Bradford Price and Millar Library
934 SW Harrison
Attn: Judy Andrews (503) 725-4126

Seattle

University of Washington
Suzallo Library
Government Publications Division
Attn: Eleanor Chase (206) 543-4664

Richland

U.S. Department of Energy Public Reading Room
Washington State University, Tri-Cities
Consolidated Information Center, Room 101-L
2770 University Drive
Attn: Janice Parthree (509) 372-7443

Spokane

Gonzaga University Foley Center
East 502 Boone
Attn: Linda Pierce (509) 323-6110

Administrative Record and Public Information Repository:

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