

# Inspection, Monitoring, and Maintenance Plan for the 300 Area Process Trenches



Prepared for the U.S. Department of Energy  
Office of Environmental Restoration

**Bechtel Hanford, Inc.**  
Richland, Washington

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## 1.0 INTRODUCTION

This plan describes inspection, monitoring, and maintenance activities for the 300 Area Process Trenches (APT). The 300 APT is located within the 300-FF-1 Operable Unit of the U.S. Department of Energy's Hanford Site. The Hanford Site is a 1,456-km<sup>2</sup> (560-mi<sup>2</sup>) federal facility located near the city of Richland in Washington State. The 300 APT was constructed and began operations in 1975 as the 316-5 Process Trenches. The 300 APT received effluent discharges from the 300 Area process sewer system. The site was closed to liquid discharges of dangerous waste in 1994.

A Record of Decision for the 300-FF-1 Operable Unit was issued in July 1996 (EPA 1996), and the 300 APT Modified Closure/Postclosure Plan was incorporated into the *Hanford Facility Wide Resource Conservation and Recovery Act Permit, Rev. 4* (Permit) in December 1996. The preferred remedial alternative for the 300 APT was removal and disposal of contaminated soils to the Environmental Restoration Disposal Facility, a waste disposal facility on the Hanford Site. Remedial action was initiated in July 1997. Completion of closure for the 300 APT is anticipated in 1998.

## 2.0 MODIFIED POSTCLOSURE INSTITUTIONAL CONTROLS AND PERIODIC ASSESSMENTS

The *300 Area Process Trenches Modified Closure/Postclosure Plan* (DOE-RL 1997a) describes the required postclosure activities for the 300 APT. Section 8.1.2 of the plan allows the permittees to request postclosure modifications if the contamination levels are shown to be the same or less than those at the time of closure. Data collected after remediation activities were completed indicate soil contamination is below clean-closure cleanup levels. These levels include *Washington Administrative Code* (WAC) 173-340, "Model Toxics Control Act-Cleanup," residential health-based levels, background or the limits of quantitation, and as prescribed by Permit Condition II.K.1, *Soil/Groundwater Closure Performance Standards*" (DOE-RL 1997b).

### 2.1 INSTITUTIONAL CONTROLS

The remaining soils in the 300 APT meet residential cleanup standards. Therefore, no measures are required to prohibit or limit surface access to the site. For example, fences or barriers are not required to maintain access restrictions.

The Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units (EPA 1996) requires maintenance of institutional controls to ensure that groundwater is not used as drinking water or an irrigation source as long as contamination at actionable levels exists. These controls include the following, (among other requirements):

- 1) Placing written notification of the remedial action in the Hanford facility land-use master plan.
- 2) Prohibit any activities that would interfere with the remedial activity without regulator concurrence.
- 3) Establishing mechanisms prior to transfer or lease, such as notifications in real property records of the county or the creation of restrictive covenants running with the land.

This will ensure these controls continue even after transfer of a lease or simple interest in any portion of the land, in compliance with the requirements of *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* Section 120 (h) for notifications to transferees and warranties in conveyance deeds.

## **2.2 PERIODIC ASSESSMENTS**

Permit Condition II.K.3.b (DOE-RL 1997b) requires periodic assessments. The first periodic assessment will take place after a period of 5 years from the completion of closure. As allowed by WAC 173-340-410, a compliance monitoring plan for protection and confirmation monitoring during the 5-year period may be combined with other plans. For the 300 APT, periodic assessments are only required for groundwater. Protection and confirmation sampling of groundwater will be achieved through implementation of the final status groundwater monitoring plan (WHC 1995). Wells that have not exceeded limits will be sampled once per semiannual sampling period (i.e., June and December). Wells with exceedances will be sampled quarterly (March, June, September, and December).

## **3.0 GROUNDWATER MONITORING POSTCLOSURE REQUIREMENTS**

### **3.1 GROUNDWATER MONITORING**

During the postclosure period, monitoring of groundwater will continue under the final status groundwater monitoring program. Groundwater monitoring of contamination trends will be reported per the plan. The program is consistent with the remedial action selected for the groundwater operable unit beneath the 300 APT (EPA 1996). The implementation plan for this activity is the *Groundwater Monitoring Plan for the 300 Area Process Trenches* (WHC 1995).

### **3.2 INSPECTION, MAINTENANCE, AND REPLACEMENT WELLS**

The well head and associated structures of each groundwater monitoring well are inspected during sampling events. Field personnel record problems in the field logbook (i.e., high turbidity, locking cap, guard post damage) and report them as needing maintenance. Repairs are made according to approved contractor procedures. Subsurface inspection and maintenance is performed on a 5-year schedule, or as needed to repair problems identified during sampling per Permit Condition II.F.2.a (DOE-RL 1997b). The routine subsurface inspection may consist of

pulling and inspecting pumps, brushing the inner walls of the casing and screen, and conducting a down-hole camera survey.

If monitoring wells become unsuitable for use, the monitoring program will be reevaluated to determine if a replacement well (new or existing) would be required. Changes in the monitoring plan will be amended in accordance with WAC 173-303-610(8)(d).

#### **4.0 POSTCLOSURE PERSONNEL TRAINING**

Training is required for personnel performing groundwater sampling and well maintenance. The following briefly describes the job requirements for the sampling and well maintenance personnel.

Sampling personnel will be responsible for the following:

- Monitoring and reporting on groundwater well security and maintenance
- Collecting groundwater level data
- Collection, packaging, and shipping groundwater samples to field and offsite laboratories
- Sampling and monitoring equipment operation and maintenance
- Providing sample chain-of-custody to the laboratory
- Completing specific on-the-job training.

Well maintenance personnel will be responsible for the following:

- Drilling maintenance equipment operation and maintenance
- Pump removal and well cleaning
- Specific on-the-job training.

The training of both well maintenance and sampling personnel is completed by either classroom instruction, work experience, or on-the-job training. Sampling personnel are also trained in accordance with *Hanford Analytical Services Quality Assurance Requirements Documents* (DOE-RL 1996). Well maintenance and sampling personnel will undergo an annual review of training requirements.

#### **5.0 SECURITY**

##### **5.1 24-HOUR SURVEILLANCE SYSTEM**

The 300 APT is located within the 300 Area of the Hanford Site. The 300 Area will remain an industrial, operational area of the Hanford Site for the foreseeable future. Operational areas will be under 24-hour surveillance by Hanford Patrol protective force personnel.



## 5.2 BARRIER, MEANS TO CONTROL ENTRY, AND WARNING SIGNS

The 300 APT soils have been remediated to residential cleanup standards such that barriers, means to control entry, and warning signs are not required. However, because groundwater contamination remains, security for groundwater monitoring wells is required. Each groundwater monitoring well has a locked cap to prevent unauthorized access and is surrounded by four steel-guard posts for visibility to prevent damage from vehicles.

## 6.0 REFERENCES

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 U.S.C. 9601, et seq.
- DOE-RL, 1996, *Hanford Analytical Services Quality Assurance Requirements Documents*, DOE/RL-96-68, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- DOE-RL, 1997b, *Hanford Facility RCRA Permit Handbook*, DOE/RL-96-10, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 1996, *Declaration of the Record of Decision for the 300-FF-1 and the 300-FF-5 Operable Units*, U.S. Environmental Protection Agency, Washington, D.C.
- WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.
- WAC 173-340, "Model Toxics Control Act – Cleanup," *Washington Administrative Code*, as amended.
- WHC, 1995, *Groundwater Monitoring Plan for the 300 Area Process Trenches*, WHC-SD-EN-AP-185, Rev. 0A, Westinghouse Hanford Company, Richland, Washington.

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