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CHAPTER 5.0
POSTCLOSURE PLAN

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1 **5.0 POSTCLOSURE PLAN**

2 Modified postclosure requirements will be applicable to 1324-N and 1324-NA. Permit condition II.K.3.
3 allows a modified closure option for a unit if it can meet MTCA Method C cleanup levels. The soil
4 column has been demonstrated to be able to meet clean closure standards under MTCA Method B.
5 However, sulfate concentrations exceed MTCA Method C groundwater protection standards because
6 MTCA Method B and Method C standards are identical when the basis is a federal drinking water
7 standard, as is the case with sulfate.

8 Units where contamination exceeds MTCA Method C may be required to close as a landfill (Permit
9 Condition II.K.4). However, as part of this postclosure plan, DOE/RL-96-39, Rev. 1, Attachment B-6
10 presents a demonstration that a landfill cover is not required over the 1324-N and 1324-NA units and
11 therefore modified closure is the appropriate closure option for these units. The amount of clean soil
12 meeting MTCA Method B cleanup standards that will remain at the closed 1324-N and 1324-NA units
13 would prevent a downward driving force of precipitation that could contribute to further degradation of
14 the groundwater. DOE/RL-96-39, Rev. 1, Attachment B-6 shows that precipitation would not reach
15 groundwater for over 200 years. Because the soil column has been determined to be clean, and no
16 downward driving force for further groundwater contamination exists, there would be no need for a
17 landfill cover system at 1324-N and 1324-NA.

18 **5.1 Institutional Controls**

19 No soil contamination that would present a hazard from direct exposure remains at 1324-N and 1324-NA.
20 Therefore, no measures are required to prohibit or limit access at the surface. For example, fences or
21 barriers will not be required.

22 Institutional controls are required to be maintained in order to ensure that groundwater is not used as a
23 drinking water source. Because DOE-RL will maintain control over this site for the near future, it is not
24 anticipated that additional actions will be required to limit controls over groundwater usage. Should
25 groundwater use restrictions be required after DOE-RL relinquishment of the area, appropriate
26 institutional controls will be established.

27 **5.2 Periodic Assessments**

28 Periodic assessments are required by Permit Condition II.K.3.b. The first periodic assessment will take
29 place after a period of five years from the completion of closure. As allowed by [WAC 173-340-410](#), a
30 compliance-monitoring plan for protection and confirmation monitoring during the five-year period may
31 be combined with other plans. Protection and confirmation sampling of groundwater will be achieved
32 through implementation of the dangerous waste groundwater-monitoring plan.

33 **5.3 Groundwater Monitoring Postclosure Requirements**

34 **5.3.1 Postclosure Groundwater Monitoring**

35 During the postclosure period, monitoring of groundwater will continue under a corrective action program
36 in accordance with [WAC 173-303-645](#)(11). A groundwater-monitoring plan will be developed for
37 1324-N and 1324-NA and implemented prior to incorporation of this postclosure plan into the Permit.

38 **5.3.2 Inspection, Maintenance, and Replacement of Wells**

39 Each time a well is sampled, the wellhead and associated structures are inspected. Problems with the
40 pump or with the sample (e.g., excessive turbidity) are also noted. Repairs are made according to
41 approved contractor procedures. Subsurface inspection and maintenance is performed on a 3- to 5-year
42 schedule, or as needed to repair problems identified during sampling.

43 If a monitoring well becomes unsuitable for use, the monitoring program will be reevaluated to determine
44 if a new or existing well should be substituted.

1 **5.4 Corrective Action Plan**

2 Because the groundwater monitoring data continues to show exceedences of sulfate concentrations above
3 the secondary drinking water standard (250 mg/L), corrective action to remove or treat the sulfate will be
4 required. Corrective actions will be determined in a ROD for the 100-NR-2 OU. The sulfate plume is
5 described in the DOE/RL-95-111, *Corrective Measures Study for the 100-NR-1 and 100-NR-2 Operable*
6 *Units*, Section 3.3.3.2, Nature and Extent of Contamination. Alternatives for its remediation are presented
7 and analyzed in DOE/RL-95-111, Sections 5 through 7. A Proposed Plan and ROD for the 100-NR-2 OU
8 will determine any corrective actions required to remediate the sulfate plume.

9 **5.5 Personnel Training During Postclosure**

10 This section describes the training of personnel required to complete postclosure care requirements
11 contained in this closure plan and the Permit. It is intended to supplement the training plan currently in
12 place and identified in DOE/RL-96-39, Rev. 1, Attachment B-4. A brief description of how training will
13 be designed to meet job tasks is presented below.

14 **5.5.1 Surveillance Personnel**

15 The following outline provides potential information on classroom or on-the-job training that surveillance
16 personnel will complete before conducting independent site surveillance at 1324-N and 1324-NA during a
17 postclosure period.

- 18 • Security inspections
- 19 • Location, integrity, and inspection of benchmarks, if appropriate
- 20 • Location, integrity, and inspection of groundwater wells
- 21 • Erosion damage
- 22 • Vegetative cover condition.

23 **5.5.2 Groundwater Sampling and Analysis Task Leader and Sampling Personnel**

24 This section describes the training of the groundwater sampling and analysis task leader and sampling
25 personnel required to complete postclosure care requirements as contained in this postclosure plan. A
26 brief description of how training will be designed to meet job tasks is presented below.

27 The sampling and analysis task leader or delegate and samplers will be responsible for:

- 28 • Monitoring and reporting on groundwater well security and maintenance
- 29 • Collecting groundwater level data
- 30 • Collecting, packaging, and shipping groundwater samples to field and offsite laboratories
- 31 • Sampling and monitoring equipment operation and maintenance
- 32 • Providing sample chain of custody to the laboratory.

33 The training of the sampling and analysis task leader and sampling personnel will receive either
34 classroom instruction or on-the-job training. Sampling and analysis personnel will be trained to perform
35 these functions in accordance with the *Hanford Analytical Services Quality Assurance Requirements*
36 *Documents* (DOE-RL 1996b). A person successfully completing the required training courses will be
37 qualified as a groundwater sampler and/or task leader. All personnel will undergo training and at least an
38 annual review for required courses.

39 **5.6 Security**

40 **5.6.1 24-Hour Surveillance System**

41 The 100 Area will remain an area controlled by the DOE-RL for the near future. These areas will be
42 under 24-hour surveillance by Hanford Patrol protective force personnel.

1 **5.6.2 Barrier, Means to Control Entry, and Warning Signs**

2 No direct exposure hazards remain at 1324-N and 1324-NA. However, roadways to the unit and site
3 access will remain administratively restricted to use by authorized personnel only. Access to the
4 100-N Area from the Columbia River is restricted by posted federal warning signs.

5 **5.7 Postclosure Contact**

6 The DOE-RL will be the official contact during the postclosure period at the following address:

7 Director, Office of Environmental Services *

8 U.S. Department of Energy

9 Richland Operations Office

10 P.O. Box 550

11 Richland, Washington 99352

12 *or its equivalent should there be a future reorganization at DOE-RL

13 **5.8 Certification of Postclosure**

14 No later than 60 days after completion of the postclosure care period, the DOE-RL will submit to Ecology
15 a certification of completion of postclosure care. This certification, stating that postclosure care for the
16 unit was performed in accordance with the approved closure plan, will be signed by DOE-RL and an
17 independent registered professional engineer. The certification will be submitted by registered mail or an
18 equivalent delivery service. Documentation supporting the independent registered professional engineer's
19 certification will be supplied upon request of the regulatory authority.

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