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FACT SHEET
PART III, OPERATING UNIT GROUP 17, LOW-LEVEL BURIAL GROUND
TRENCHES 31 & 34

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1 **FACT SHEET**

2 **PART III, OPERATING UNIT GROUP 17, LOW-LEVEL BURIAL GROUND**

3 **TRENCHES 31 & 34**

4 **UNIT DESCRIPTION**

5 Low-Level Burial Ground (LLBG) Trenches 31 and 34 and the associated container storage units are
6 located in the 200 Southwest corner of the 218-W-5 Burial Ground. They are constructed with
7 polyethylene liners and leachate collection systems.

8 The LLBG Trenches 31 & 34 were constructed in 1994 under interim status. On August 27, 1999, the
9 Permittees informed Ecology of their intent to begin waste disposal operations at Trenches 31 & 34 as of
10 September 15, 1999.

11 Trenches 31 and 34 operate as Storage and Disposal units for mixed low-level waste. The following
12 wastes may be managed at the LLBG Trenches 31 & 34 Operating Unit Group:

- 13 • Dangerous or mixed waste that is generated from processes at the Hanford site.
14 • Waste that is specifically identified in Section II, paragraph 8, of the Settlement Agreement re:
15 Washington versus Bodman, Civil No. 2:30-cv-05018-AAM, January 6, 2006.

16 No other wastes may be managed at LLBG Trenches 31 & 34 unless authorized by a permit modification
17 decision under Permit Condition 1.C.3.

18 All mixed waste destined for disposal in LLBG Trenches 31 & 34 must meet Land Disposal Restrictions
19 (LDR) requirements [[WAC 173-303-140](#), 40CFR 268, and RCW-70.105]. Mixed waste awaiting disposal
20 and stored on the asphalt pads adjacent to Trenches 31 & 34 must also be LDR compliant.

21 In September 2007, the Permittees submitted a Dangerous Waste Permit Application Part A Form (Part A)
22 and a State Environmental Policy Act (SEPA) Checklist to Ecology. This constituted a request to conduct
23 waste treatment at Low Level Burial Grounds 218-W-5 in Trenches 31 & 34.

24 The Permittees proposed to treat the large, difficult-to-handle packages of mixed wastes to meet the
25 Alternative Treatment Standards for Hazardous Waste Debris that appear in Title 40 Code of Federal
26 Regulation (CFR) 420, subsection 268.42, Table 1, *Alternative Treatment Standard for Hazardous Debris*.
27 They also proposed treatment of radioactive lead solids using the macro-encapsulation treatment
28 technology (MACRO).

29 In-trench treatment at Trenches 31 & 34 is not included in the permit at this time.

30 **TYPE AND QUANTITY OF WASTE**

31 The LLBG Trenches 31 & 34 operable unit group manages the following waste types:

- 32 • Containerized liquids/free liquids.
33 • Pressurized gas cylinders and aerosol cans.
34 • Bulk sodium metal.
35 • Labpack liquids.
36 • Solids/debris.
37 • Sludges/soils.

38 Table 1 below provides a summary of Treatment, Storage, and Disposal design capacities for LLBG
39 Trenches 31 & 34 and the associated storage units.

**Table 1 Summary of Storage and Disposal Capacity for LLBG Trenches 31 & 34
 and Associated Container Storage Units**

Unit	Storage	Disposal
Trench 31	N/A	21,408 m ³ (28,000 yd ³) per trench*
Trench 34	N/A	21,408 m ³ (28,000 yd ³) per trench*
Trench 31 Waste Storage Pad	690 m ³ (902 yd ³)**	N/A
Trench 34 Waste Storage Pad	690 m ³ (902 yd ³)**	N/A

*Based on trench floor dimensions of 76 meters (250 feet) long by 31 meters (100 feet) wide and a depth of 9 meters (30 feet). Also assumes a 4.9-meter (16-foot) final cover thickness over the final volume of disposed waste.

**Based on an area 45.7 meters (150 feet) wide by 45.7 meters (150 feet) long.

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BASIS FOR PERMIT CONDITIONS

This permit is intended to protect human health and the environment while ensuring proper management of waste at LLBG Trenches 31& 34. The permit addenda are incorporated into this permit and are enforceable by reference. The conditions and addenda are based on the permit application. Ecology has reviewed the permit application for LLBG Trenches 31 & 34 to ensure the unit meets dangerous waste facility standards.

The permit includes requirements for complying with environmental standards and maintaining and modifying the permit. The permit conditions address specifics such as personnel training, adequate staffing, process controls, and inspection requirements.

GENERAL WASTE MANAGEMENT REQUIREMENTS

The Permit authorizes the facility to accept only wastes that satisfy the facility waste acceptance criteria and permit conditions. The Permittees are allowed to store and dispose wastes in the permitted areas.

Ecology evaluated and included in the Permit stringent requirements and precautions to ensure the safety of workers and the public. The permit also has requirements to prevent hazards from ignitable, reactive, or incompatible wastes, and to prevent exceeding the facility's capacity.

The Permittees must maintain the integrity of the unit and its secondary containment systems that prevent waste from escaping the units. They must conduct waste loading and unloading operations following unit-specific Permit requirements.

WASTE ANALYSIS REQUIREMENTS

Condition III.17.C.1 requires the Permittees to comply with the requirements in Addendum B (Waste Analysis Plan) for sampling and analysis of all dangerous and/or mixed waste. The basis of this condition is [WAC 173-303-300](#).

1 **MODELING- RISK BUDGET TOOL**

2 Condition III.17.C.2 requires the Permittees to create and maintain a modeling - risk budget tool. This tool
3 must model the future impacts of the planned waste forms to be disposed of in LLBG Trenches 31 & 34. It
4 will include input from analyses performed and the impact to the underlying vadose zone and groundwater.

5 **RECORDKEEPING AND REPORTING**

6 The basis of Permit Condition III.14.D.1 is [WAC 173-303-380](#) and [WAC 173-303-810](#)(16). The
7 condition is to ensure the Permittees follow proper procedures for recordkeeping and reporting.

8 **SECURITY**

9 LLBG Trenches 31 and 34 are within the secured area of Hanford. Access to the unit is subject to the
10 general security provision of Condition II.L. Security provisions, access controls, and signage specific to
11 this unit will comply with the requirements of [WAC 173-303-310](#).

12 **PREPAREDNESS AND PREVENTION**

13 The basis for preparedness and prevention requirements in the permit conditions and Addendum F is [WAC](#)
14 [173-303-340](#). Addendum F has specific requirements to control ignition sources and to manage ignitable
15 and reactive wastes. The Permittees will prevent ignitable and reactive wastes from exposure to excessive
16 heat and sources of ignition. The Permittees must store incompatible wastes in approved separate
17 secondary containment to prevent mixing.

18 **CONTINGENCY PLAN**

19 Condition III.17.G requires the Permittees to comply with the Contingency Plan in Addendum J and
20 Condition II.A when applicable.

21 **INSPECTIONS**

22 Condition II.X requires the Permittees to establish a written inspection schedule and to conduct periodic
23 inspections following the schedule. The Permittees must correct problems found during these inspections.
24 Condition II.X also has overall inspection recordkeeping requirements.

25 The basis for these inspections requirements is [WAC 173-303-320](#).

26 **PERSONNEL TRAINING**

27 Condition III.17.1 requires the Permittees to put the training requirements described in Addendum G into a
28 written training plan required by Condition II.C. The plan will be specific to the positions and job
29 descriptions associated with LLBG Trenches 31 & 34. The training program, the written training plan, and
30 records must meet the requirements of [WAC 173-303-330](#).

31 **CLOSURE**

32 The Permittees must close LLBG Trenches 31 & 34 and the associated container storage units according to:

- 33 • Addendum H, Closure Plan.
- 34 • Condition II.J.
- 35 • [WAC 173-303](#) requirements
- 36 • U. S. Department of Energy requirements.
- 37 • Best management practices.

38 The closure will be integrated with the overall cleanup activities under the Tri-Party Agreement (Permit
39 Attachment 1).

40 The disposal landfill cover will be designed and located to comply with [WAC 173-303-665](#)(6) and
41 [WAC 173-303-610](#). The specification and variation for other cover designs will be provided at the time of
42 closure once the hazards have been defined.

1 **POST CLOSURE**

2 Condition III.17.L.1 requires the Permittees to initiate post-closure care following certification of closure
3 according to the requirements in Addendum H. The basis for this requirement is [WAC 173-303-665\(6\)](#).

4 **OTHER GENERAL PERMIT REQUIREMENTS**

5 The basis of Condition II.J for compliance with other environmental protection laws and regulations is
6 [WAC 173-303-395\(2\)](#).

7 **CONTAINER STORAGE UNIT STANDARDS**

8 Addendum C, Section C.1 documents the areas within LLBG Trenches 31 & 34 operating unit group used
9 for management of dangerous/mixed waste. Sections C.1.1 and C.1.2 contain the waste management
10 requirements. Addendum B, Section B.1.1.1.2.2 and Table B.1, includes requirements for waste
11 compatibility. Condition III.17.N requires the Permittees to manage the containers in accordance with
12 Addendum C.

13 Addendum C, Section C.1 establishes requirements for secondary containment, and indirectly, the capacity
14 of the unit and the various storage devices in it. Addendum A specifies the physical capacity limits of
15 Trenches 31 & 34, and storage pads. Capacity depends on the type and quantity of wastes in the trenches.

16 The Permittees must manage certain waste types according to the unit's conditions and Addendum C.
17 Addendum C, Section C.2.4, has allowable storage requirements. The basis for requirements for use and
18 management of containers is [WAC 173-303-630](#).

19 The requirements in Addenda C, Addenda F, and Condition III.17.C for management of dangerous and
20 mixed waste comply with [WAC 173-303](#). These requirements protect human health and the environment.

21 **LANDFILLS TRENCHES 31 and 34**

22 Permittees will conduct all LLBG Trenches 31 & 34 operations in a manner that protects the landfill and the
23 liner from damage, as required by Conditions III.17.P. The Permittees will operate all leachate collection
24 systems following established performance standards. Permittees will manage the rainwater in the
25 leachate collection and removal system so that the fluid head is not allowed to exceed the operating limit.

26 **GROUNDWATER AND GROUNDWATER MONITORING**

27 Condition III.17.Q contains the groundwater conditions. The Permittees will submit to Ecology, for
28 review and approval, a work plan for characterizing groundwater flow in the uppermost aquifer underlying
29 the Trenches 31 & 34. Condition III.17.Q.5 requires the Permittees meet the following schedule:

- 30 1. No later than 120 days after the effective date of this permit, submit for Ecology approval a work
31 plan with a schedule for characterizing the groundwater flow. The schedule for the
32 characterization work shall not take longer than 2 years to complete.
- 33 2. No later than 60 days after completing the characterization work, submit a draft groundwater
34 monitoring plan to Ecology for approval.
- 35 3. No later than 60 days following Ecology approval of the draft groundwater monitoring plan, submit
36 a Class 2 permit modification to include the draft groundwater monitoring plan in the permit
37 (Condition III.17.Q.4) as Addendum D.

38 **REQUESTED VARIANCES OR ALTERNATIVES**

39 There are no requested variances or alternatives for LLBG Trenches 31 & 34.

40 **STATE ENVIRONMENTAL POLICY ACT (SEPA)**

41 The SEPA determination for LLBG Trenches 31 & 34 is in the Hanford-Wide Permit Fact Sheet.

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