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95-PCA-393

Mr. Joseph J. Witczak
Unit Supervisor
Regulatory and Technical
Support Unit
Nuclear Waste Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Mr. Moses N. Jaraysi
Section Supervisor
200 Area Section
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

Dear Messrs. Witczak and Jaraysi:

QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT PERMIT, DANGEROUS WASTE PORTION (QUARTER ENDING JUNE 30, 1995)

Condition I.C.3. of the Hanford Facility Resource Conservation and Recovery Act Permit (RCRA Permit), Dangerous Waste Portion (DW Portion), addresses Class 1 modifications as defined in Washington Administrative Code (WAC) 173-303-830(4)(a)(i)(A). This condition allows for notification of Class 1 modifications to be made to the State of Washington Department of Ecology (Ecology) on a quarterly basis. These modifications are under implementation. A listing of these modifications is maintained in the Hanford Facility Operating Record. The Class 1 modifications are discussed below.

The Hanford Facility RCRA Permit, DW Portion is being modified to update information included during this quarter in Parts II, III, and V. Part II Class 1 modifications include a revised Hanford Facility Contingency Plan. Part III Class 1 modifications pertain to the 616 Nonradioactive Dangerous Waste Storage Facility and the 305-B Storage Facility. Part V Class 1 modifications pertain to the Simulated High Level Waste Slurry Treatment and Storage Unit. The Class 1 modifications are being made to ensure that all activities conducted are in compliance with the RCRA Permit. The enclosure to this letter includes the Parts II, III, and V Class 1 modifications to the RCRA Permit.

Should Ecology determine that the enclosed modifications do not qualify as Class 1 modifications as defined in WAC 173-303-830, written authorization to

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continue operations is requested until the appropriate level of modification can be accomplished.

In accordance with a teleconference held with Mr. Moses Jaraysi of Ecology on March 3, 1995, a transmittal letter signed by the permittees is sufficient to authorize the submittal of the Quarterly Notification of Class 1 Modifications to the Hanford Facility RCRA Permit, DW Portion, and meet the intent of Permit Condition I.F., Signatory Requirement.

Should you have any questions regarding this information, please contact Mr. C. E. Clark, U.S. Department of Energy, Richland Operations Office, at (509) 376-9333; Mr. R. C. Brunke, Westinghouse Hanford Company, at (509) 376-2663; or Mr. H. T. Tilden II, Pacific Northwest Laboratory, at (509) 376-0499.

Sincerely,

James E. Rasmussen

James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division
DOE Richland Operations Office

EAP:EMM

W. T. Dixon

William T. Dixon, Director
Environmental Services
Westinghouse Hanford Company

Kenneth C. Brog

Kenneth C. Brog, Director
Environment, Safety, and Health
Pacific Northwest Laboratory

Enclosure:
Class 1 Modifications to
the Hanford Facility
RCRA Permit, DW Portion
(Quarter Ending June 30, 1995)

cc w/encl:
EDMC, H6-08
J. Badden, BHI
D. Duncan, EPA
R. Jim, YIN
D. Powaukee, NPT
H. Tilden, PNL

cc w/o encl:
D. Broussard, PNL
W. Dixon, WHC
S. Price, WHC
D. Lundstrom, Ecology
J. Stohr, Ecology

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QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RCRA PERMIT, DANGEROUS WASTE PORTION (Quarter Ending June 30, 1995)

Page 1 of 9

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A redline and strikeout version of the DOE/RL-93-75, *Hanford Facility Contingency Plan* is provided as Appendix A.

- Replace Attachment 4 of the Hanford Facility Resource Conservation and Recovery Act Permit (RCRA Permit), Revision (Rev.) 1, Dangerous Waste (DW) Portion, Hanford Facility Contingency Plan, Rev. 1, June 1993, with DOE/RL-93-75, *Hanford Facility Contingency Plan*.

Reason:

Document DOE/RL-93-75 is being issued for use by personnel who are responsible for facilities that are required to meet the contingency planning requirements contained in *Washington Administrative Code* (WAC) 173-303.

Document DOE/RL-93-75 is essentially identical to RCRA Permit, Rev. 1, DW Portion Attachment 4. There are 10 minor differences between the documents. Document DOE/RL-93-75:

(1) Corrects reference to the 911 emergency telephone.
(2) Incorporates the consolidation of Kaiser Engineers Hanford Company with Westinghouse Hanford Company.
(3) Has the figures and tables in the applicable sections rather than consolidated at the end of the document as is the case in Attachment 4, Hanford Facility Contingency Plan, Revision 1, June 1993.
(4) Deletes reference to the 600 Area. There are currently no alarm signals in the 600 area.
(5) Replaces, on page 5-5, the statement "regulate ventilation to meet building specific conditions" with "turn off all intake ventilation."
(6) Adds, on page 5-11, the phrase "especially mixed waste".
(7) Changes names of the emergency control centers (ECCs) to emergency centers (ECs).
(8) Includes, on page 7-3, the following changes to Table 1 Emergency Control Centers:
    a) Deleted: Emergency Management Center (Location: 1170 Building)
    b) Added: North Richland Emergency Control Center (Location: Pacific Northwest Laboratory Materials Reliability Center Building).
(9) Includes, on page 7-4, the following changes to the crash alarm telephones:
    a) Deleted: steady ringing phone
    b) Added: red telephone.
(10) Replaces, on page 10-1, "ECC" with "Emergency Operations Center."

Document DOE/RL-93-75 is intended to be used in conjunction with existing facility contingency planning documentation (e.g., Building Emergency Plans) to present a complete picture of contingency planning to regulatory personnel. This document contains descriptions of the Hanford Site emergency capabilities including equipment, organizations, and standard response actions; descriptions of agreements made with the local agencies; and a description of the occurrence reporting and notification process.

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- A redline and strikeout version of Attachment 8 is provided as Appendix B. Amendments III.1.B.a. through III.1.B.bbb. of RCRA Permit, Rev. 1, DW Portion were incorporated into this appendix, with the exception of Amendment III.1.B.jj. This amendment will be incorporated when the Part A permit application is modified. In addition, the following Class 1 modifications to Attachment 8.

GENERAL

- Minor editorial changes (shown in redline/strikeout format) have been incorporated into the text.

  Reason: Editorial changes reflect current operations.

- 616 NRDWSF Solid Waste Facility Operations Supervisor or 616 NRDWSF Supervisor was changed to 616 NRDWSF supervisor.

  Reason: Future name changes of a specific group will not invoke a Class 1 modification to the RCRA Permit.

- Solid Waste Engineering has been changed to solid waste management.

  Reason: Future name changes of a specific group will not invoke a Class 1 modification to the RCRA Permit.

- Revised discussion regarding onsite waste tracking forms to include Uniform Hazardous Waste Manifests.

  Reason: In case waste is received from noncontiguous DOE-RL waste generators.

- Changed Transportation Logistics to transportation.

  Reason: Future name changes of a specific group will not invoke a Class 1 modification to the RCRA Permit.

SPECIFIC

Attachment 8, Chapter 2.0

Replace Chapter 2.0 of Attachment 8 to include RCRA Permit, Rev. 1, DW Portion amendments, the general changes noted previously, and the following Class 1 modifications:

- Section 2.2, Page 2-8: Deleted reference to the legal description of the 616 NRDWSF.

  Reason: The legal description has not been included as an enforceable section in other portions of the RCRA Permit (e.g., 305-B Storage Facility).

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- Section 2.5, Pages 2-12 and 2-13: Added detail of when liquid is analyzed for contaminants.

  Reason: Reflects current operations.

- Section 2.8, page 2-17 and 2-18: Added satellite accumulation areas, CERCLA cleanup sites, or expedited response action sites as areas that generating units use to secure waste. Also added the 616 NRDWSF operating personnel as a group that receives a hazardous waste disposal analysis record from solid waste management, clarified who transports waste to the 616 NRDWSF, and deleted reference to Appendix 3A (Radiation Exempt Facility List).

  Reason: Reflects current operations; clarifies who transports waste to the 616 NRDWSF; and deletes reference to Appendix 3A, because 3A is not an enforceable section.

Attachment 8, Chapter 3.0.

Replace Chapter 3.0 of Attachment 8 to include RCRA Permit, Rev. 1, DW Portion amendments, the general changes noted previously, and the following Class 1 modifications:

- Section 3.1, page 3-1: Added a reference to 40 CFR 761.

  Reason: Covers TSCA regulations.

- Section 3.2, page 3-4: Added satellite accumulation areas, CERCLA cleanup sites, or expedited response action sites as areas that generating units use to secure waste.

  Reason: Reflects current operations.

- Page 3-5: Deleted the paragraph discussing the Radiation Exempt Facility List, and added a discussion stating that waste received at the 616 NRDWSF must be free from radionuclide contamination.

  Reason: Reflects current operations.

- Section 3.2.2, page 3-7: Deleted the "B" after HAZCAT flammability procedure.

  Reason: No HAZCAT flammability procedure 'B' exists.

- Section 3.2.6, page 3-11: Deleted discussion regarding a bomb disposal squad being used to detonate certain chemicals.

  Reason: Reflects current operations.

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- Table 3-1, page T3-1: Updated what type of containers may be accepted at the 616 NRDWSF.

  Reason: Reflects current DOT regulations.

- Table 3-5, page T3-5: Added the words "suction pump" as a type of sampling equipment.

  Reason: Reflects current sampling operations.

Attachment 8, Chapter 4.0.

Replace Chapter 4.0 of Attachment 8 to include RCRA Permit, Rev. 1, DW Portion amendments, the general changes noted previously, and the following Class 1 modification:

- Table 4-1, page T4-1: Clarified what type of containers may be accepted at the 616 NRDWSF.

  Reason: Reflects current DOT regulations.

Attachment 8, Chapter 6.0.

Replace Chapter 6.0 of Attachment 8 to include RCRA Permit, Rev. 1, DW Portion amendments, the general changes noted previously, and the following Class 1 modifications:

- Section 6.1.1.1., page 6-1: Updated discussion on Hanford Facility security.

  Reason: Reflects current operations.

- Section 6.2.1.1, pages 6-2 and 6-3: Clarified the weekly audit process.

  Reason: Reflects current operations.

- Section 6.4.1 and 6.4.4., pages 6-7 and 6-8: Added discussion concerning mechanical fork truck lift.

  Reason: Reflects the use of the mechanical fork truck lift for loading/unloading of containers.

Attachment 8, Chapter 7.0

Replace Chapter 7.0 of Attachment 8 of the RCRA Permit, Rev. 1, DW Portion to include the general changes noted previously.

Reason: Reflects current information.

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Attachment 8, Chapter 8.0

Replace pages 8-27 and 8-28.

Reason: Includes RCRA Permit, Rev. 1, DW Portion Amendment III.1.B.y.

Attachment 8, Chapter 11.0.

Replace Chapter 11.0 of Attachment 8 to include RCRA Permit, Rev. 1, DW Portion amendments, the general changes noted previously, and the following Class 1 modification:

- Section 11.9, page 11-25: Updated official onsite contact.

  Reason: Reflects current contact information.

Attachment 8, Chapter 12.0

Replace Chapter 12.0 of Attachment 8 to include RCRA Permit, Rev. 1, DW Portion amendments, the general changes noted previously, and the following Class 1 modifications:

- Section 12.0, page 12-1: Deleted portion of Section 12.0.

  Reason: Reflects current operations.

- Section 12.4.1.1.1 and 12.4.1.1.2, pages 12-3 and 12-4: Revised discussion of manifest discrepancies.

  Reason: Reflects current operations.

- Section 12.4.2, pages 12-7 and 12-8: Removed reference to Environmental Data Management Center.

  Reason: Reflects current operations.

Attachment 8, Appendix 2A

Replace pages APP 2A-i and APP 2A-II of Attachment 8 of the RCRA Permit, Rev. 1, DW Portion to remove discussion of the legal description of the 616 NRDWSF

Reason: The legal description has not been included as an enforceable section in other portions of the RCRA Permit (e.g., 305-B Storage Facility).

Attachment 8, Appendix 4B

Replace pages APP 4B-i and APP 4B-ii of Attachment 8 of the RCRA Permit, Rev. 1, DW Portion.

Reason: Includes RCRA Permit, Rev. 1, DW Portion Amendment III.1.B.bbb.

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Attachment 8, Appendix 11B

Replace pages APP 11B-i and APP 11B-ii of Attachment 8 of the RCRA Permit, Rev. 1, DW Portion.

Reason: Includes RCRA Permit, Rev. 1, DW Portion Amendment III.1.B.hh.

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Attachment 18, Part III.2.A., of the RCRA Permit, Rev.1, DW Portion

- Page 7-9, lines 36-37: Beginning with "Personnel shall leave 305-B by the..." delete "proceed to the designated staging area (south parking lot) for accounting," and replace it with "move upwind, keeping the driveway clear."

  Reason: This statement reflects instructions in the 305-B building emergency plan.

- Page 4-5, lines 23-24: Delete "55 gallons of liquid (inorganic or noncombustible organic) acids" and "50 gallons of oxidizing liquids".

  Reason: Original reference was incorrect. Storage of these 2 types of liquids will be in compliance with UBC Table (Table 4-1) on page 4-18, and with WAC 173-303-630(7)(a)(iii).

- Page 4-5, lines 50-51: Delete ", no more than 55 gallons of which may be caustics due to UBC restrictions".

  Reason: Original reference was incorrect. Storage of caustic liquids will be in compliance with UBC Table (Table 4-1) on page 4-18, and WAC 173-303-630(7)(a)(iii).

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Attachment 19, Part III.4.A. of the RCRA Permit, Rev. 1, DW Portion

- Page B-11, Lines 5-6: Delete "Toxicity Characteristic Leaching Procedure (TCLP) Toxicity -Preserve by cooling to 4°C; holding time 6 months."

  Reason: TCLP analysis is not required in the Sampling and Analysis Plan (SAP). The analytical methods agreed to by the Permittees and Ecology for determining contaminant concentrations in soil samples collected at the unit are listed in Table A.3 on page A-11.

- Page B-15, Lines 11-12: Delete "Temperature measurements will be made with a mercury or electronic thermometer, which will be calibrated before sampling begins."

  Reason: There is no technical basis for taking temperature measurements during the type of sampling performed at the unit. The sentence also conflicts with the first sentence of the same paragraph.

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HANFORD FACILITY CONTINGENCY PLAN, DOE/RL-93-75

(Appendix A)

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616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY

(Appendix B)

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ATTACHMENT 8

CHAPTER 2.0

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CONTENTS

CONTENTS (cont)

APPENDIX

FIGURES

2.0 FACILITY DESCRIPTION AND GENERAL PROVISIONS [B]

This chapter briefly describes the Hanford Site and provides a general overview of the 616 NRDWSF, including the following:

- General description
- Topography
- Location information
- Traffic information
- Performance standards
- Buffer monitoring zones
- Spills and discharges
- Manifest system.

2.1 GENERAL DESCRIPTION [B-1]

This section discusses the general Hanford Facility operating areas and provides an introduction to the 616 NRDWSF. A brief description of the Hanford Facility waste management practices and a description of the 616 NRDWSF are contained in this section. A more detailed discussion of the waste types and known characteristics of the waste that the 616 NRDWSF stores, and the identification of the methods of storage are provided in Chapters 3.0 and 4.0, respectively.

2.1.1 Hanford Site

The Hanford Site covers approximately 560 square miles (1,450.4 square kilometers) of semiarid land that is owned by the U.S. Government and managed by the DOE-RL. The Hanford Site is located northwest of the city of Richland, Washington (Figure 2-1). The city of Richland adjoins the southeasternmost portion of the Hanford Site boundary and is the nearest population center. In early 1943, the U.S. Army Corps of Engineers selected the Hanford Site as the location for reactor, chemical separation, and related activities for the production and purification of plutonium.

Activities on the Hanford Site are centralized in numerically designated areas (Drawing H-6-958 in Appendix 2A). The reactors are located along the Columbia River in the 100 Areas. The reactor fuel reprocessing units are in the 200 Areas, which are on a plateau approximately 7 miles (11 kilometers) from the Columbia River. The 300 Area, located adjacent to and north of Richland, contains the reactor fuel manufacturing plants and the research and development laboratories. The 400 Area, 5 miles (8 kilometers) northwest of the 300 Area, contains the Fast Flux Test Facility used for testing liquid metal reactor systems. The 600 Area covers all locations not specifically given an area designation. Adjacent to and north of Richland, the 1100 Area contains offices associated with administration, maintenance, transportation, and materials procurement and distribution. The 3000 Area, between the 1100 Area and 300 Area, contains engineering offices and administrative offices. Administrative offices also are located in the 700 Area, which is in downtown Richland.

Drawing H-6-958 in Appendix 2A provides a general overview of the Hanford Site and contiguous area. The drawing illustrates the following:

- Legal boundary
- Contours [at 20-foot (6.1-meter) intervals] sufficient to show surface water flow
- Fire control services
- Access roads, internal roads, railroads, perimeter gates, and barricades
- Longitudes and latitudes.

2.1.2 The Hanford Facility

The Hanford Facility for the purposes of RCRA is defined as the contiguous portion of the Hanford Site that includes the TSD units identified in the *Hanford Facility Dangerous Waste Part A Permit Application* (DOE-RL 1988b) (Chapter 1.0, Section 1.4). The Hanford Facility is assigned the single EPA/State Identification Number WA7890008967. All waste management activities carried out under the assigned identification number are considered to be onsite. The 616 NRDWSF is a single storage unit and is considered part of the Hanford Facility.

2.1.3 The 616 Nonradioactive Dangerous Waste Storage Facility Description

The 616 NRDWSF is a permanent structure constructed of precast concrete double-tee wall and roof panels. The construction specifications and design drawings for this storage unit are included in Appendices 4A and 4B. The 616 NRDWSF is located approximately 200 feet (61 meters) north of Route 3, across from the 609-A Fire Station, between the 200 East and 200 West Areas (Figure 2-2). The storage unit boundary is considered to be 300 feet (91.4 meters) from the exterior walls, except to the south, where Route 3 serves as the boundary (Drawing H-13-000014 in Appendix 2A). The storage building consists of the following areas (Figure 2-3):

- Office and change rooms

- Storage cells:
  - Caustic
  - Oxidizer
  - Combustible
  - Acid
  - Flammable 1-A
  - Flammable 1-B.

- Packaging and sampling room

- Packaging material and handling equipment area

- Receiving area

- Loading and unloading areas.

Each area is addressed in the following sections.

2.1.3.1 Office and Change Rooms. The office and change rooms (Figure 2-3) serve as the operations center for the 616 NRDWSF. The 616 NRDWSF ~~Solid Waste Facility~~ Operations ~~Supervisor~~ supervisor (616 NRDWSF ~~Supervisor~~ supervisor) occupies the office. The office and change rooms are serviced by an independent heat pump designed to provide positive air pressure over the chemical storage cells (Figure 2-4). This system reduces the potential of exposing personnel in the office and change rooms to airborne chemical contaminants from the stored waste. Design drawings of the 616 NRDWSF heating, ventilation, and air conditioning systems are provided in Appendix 4B.

2.1.3.2 Storage Cells. Six storage cells (Figure 2-3) are provided for the interim storage of dangerous waste at the 616 NRDWSF. Waste is stored in cells which, in the event of a release or offnormal event, are designed and constructed to minimize damage to personnel, the environment, and the storage unit.

The storage cells have sealed concrete slabs sloped to a collection trench for the accumulation of released liquids (Chapter 4.0, Section 4.1.1.4). Each collection trench is covered by a removable carbon steel grate (shown in Chapter 4.0, Figure 4-1). Containment systems for free liquid or waste designated as F020-F027 are required to have sufficient capacity to contain 10 percent of the volume of the stored waste volume or the volume of the largest container, whichever is greater (WAC 173-303-630).

Containment systems at the 616 NRDWSF include cell trenches and floor areas up to the top of containment curbs. The collection trenches in the 616 NRDWSF are capable of holding between 92 and 252 gallons (348 and 954 liters) of liquid for each cell as the width of each cell varies. The individual cell containment systems are capable of holding between 637 and 915 gallons (2,411 and 3,464 liters) (Chapter 4.0, Section 4.1.1.6).

A curb surrounds each cell with a sloped ramp on one end for access. The curb height varies between 2 and 4 inches as the slope of the floor varies. The curb provides additional containment in the event of a major spill that would exceed the capacity of the trench. Collected or contained liquids can be removed by using hand pumps, absorbents, or vacuum trucks. Actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A.

The floors of the storage cells are sealed as detailed in Chapter 4.0, Section 4.1.1.4. The walls of the storage cells are painted to a height of 8 feet (2.4 meters). The storage areas are separated from the rest of the facility by a 2-hour fire-rated concrete masonry unit firewall. Access is provided by a 1 1/2-hour fire-rated personnel door and a 1 1/2-hour fire-rated rollup door. All of the rollup doors in the firewalls are equipped for automatic closure in the event of a fire. The fire protection system for the storage cells is a wet-pipe sprinkler system designed to meet Extra Hazard, Group II requirements, as specified in the National Fire Protection Association's *National Fire Codes* (NFPA 1989). All of the storage cells have emergency exit doors with fire alarm pull boxes and surface-mounted industrial fluorescent light fixtures with a lighting level of 20 foot candles.

The heating, ventilation, and air conditioning system in the storage cells exhausts air at a minimum rate of 4 air changes an hour. To minimize the accumulation of vapors, exhaust duct openings are located near the floor and 8 feet (2.4 meters) above the floor. This system meets the requirements of the *Uniform Building Code* (ICBO 1982) for hazardous occupancies. The heating, ventilation, and air conditioning unit for the storage areas is located approximately 40 feet (12.2 meters) from the heat pump used for the office and change rooms. The exhaust opening faces away from the heat pump to preclude the intake of exhaust vapors into the office and change rooms (Figure 2-4). Design drawings of the 616 NRDWSF heating, ventilation, and air conditioning systems are provided in Appendix 4B.

Activities that take place in the dangerous waste storage cells during normal operation are defined as follows.

- The containerized waste designated for storage in a particular cell is received and shipped in packagings of various sizes that are moved by hand, handtruck, or forklift.

- Waste containers are inspected as specified in Chapter 6.0.

Waste placement and segregation within the storage cells are performed according to a waste storage compatibility chart (Figure 2-5). As part of the designation process (Chapter 3.0, Section 3.2), the ~~contractor's Solid Waste Engineering~~ solid waste organization reviews the compatibility chart, ~~and~~ assigns a primary storage location, ~~. Solid Waste Engineering also~~ and documents any unusual chemical characteristics and/or incompatibilities on the hazardous waste disposal analysis record (Chapter 3.0, Section 3.2). If the 'primary' storage location is full, the ~~Solid Waste Unit Operations Supervisor~~ supervisor can choose a secondary storage location from the compatibility chart.

Deviations from the compatibility chart can be performed only after ~~Solid Waste Engineering~~ solid waste management has completed a review of the inventory to determine waste compatibility. The ~~Solid Waste Engineering~~ compatibility assessment must be documented, signed for ~~Solid Waste Engineering peer~~ review, and signed to indicate the ~~Solid Waste Unit Operations Supervisor~~ supervisor's concurrence. The assessment either can be documented in the logbook or filed at the 616 NRDWSF and referenced in the logbook. Waste that cannot be managed safely at the 616 NRDWSF because of chemical compatibility characteristics is not accepted.

2.1.3.2.1 Caustic and Oxidizer Storage Cells. The caustic and oxidizer cells (Figure 2-3) are separated from the other cells by a 2-hour fire-rated concrete masonry unit firewall with 1 1/2-hour fire-rated personnel doors and rollup doors.

2.1.3.2.2 Combustible and Acid Storage Cells. The combustible and acid cells are located in the middle of the storage area (Figure 2-3). The combustible and acid cells provide the same features as those provided in the caustic and oxidizer storage cells. In addition, a safety shower and an eye wash station are located in the combustible cell.

2.1.3.2.3 Flammable Liquid Storage Cells. Because of its hazardous and sometimes explosive characteristic, Class 1-A and Class 1-B flammable liquid waste must be stored in specific cells (Figure 2-3). The 1-A cell can store 1-B liquid waste, but the 1-B cell cannot store the 1-A liquid waste. The 1-A and 1-B cells are separated from the other storage cells by a 4-hour fire-rated concrete masonry unit firewall, two back-to-back 1 1/2-hour fire-rated rollup doors, and a 3-hour fire-rated personnel door.

Water reactive waste packaged in U.S. Department of Transportation-specified containers is stored inside portable weatherproof flammable liquid storage cabinets located in the 1-A and 1-B cells.

Unlike the other storage cells, the 1-A flammable storage cell is enclosed totally and provides a number of additional features because of the unique nature of the stored waste. These features include the following:

- Double blast-resistant entry doors
- A controlled-relief exterior wall system on one side for explosion venting
- Explosion-relief vents on the roof
- Lighting and electrical fixtures as specified in National Fire Protection Association codes (NEPA 1989) for Class I-Division I hazardous atmospheres
- An area for transferring flammable liquid waste equipped with explosion-proof electrical pumps with receptacles and grounding cables.

If contents from leaking containers of 1-A and 1-B flammable liquid waste must be transferred, the 1-A flammable storage cell meets the explosion venting requirements of the National Fire Protection Association, Table 5-7.3 (NFPA 1989).

2.1.3.3 Packaging and Sampling Room. The packaging and sampling room (Figure 2-3) is constructed of 2-hour fire-rated concrete masonry unit interior walls and a precast double-tee exterior wall. Entry is provided by two 1 1/2-hour fire-rated doors. The floor is sealed concrete and the ceiling of precast-concrete double-tee construction is full building height. The floor is sloped to a 202-gallon (764.7-liters) sump for the collection of released liquid. Collected liquid can be removed with absorbents or hand pumps. A 2- to 4-inch (5.1- to 10.1-centimeter) curb surrounds the room at the base of each wall for additional containment. Actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A.

A countertop is provided in the packaging and sampling room with the following items:

- Two drainless stainless-steel basins
- Hot and cold running water (both basins)
- Independent hot water heater.

The basins, provided for dangerous waste use, allow waste to be retrieved for appropriate packaging and disposal. A safety shower and an eyewash station also are provided.

Although the primary purpose of the packaging and sampling room is for waste repackaging and sampling, the room can be used as an overflow storage area for compatible waste (excluding flammable 1-A and 1-B liquid waste), empty waste containers, and nonradioactive waste samples. The packaging and sampling room also is used to store waste sampling equipment, laboratory equipment, monitoring equipment, and various other equipment required for Hanford Facility waste management activities.

2.1.3.4 Packaging Material and Handling Equipment Area. The packaging material and handling equipment area, in the northeast end of the storage building (Figure 2-3), is used to store waste packaging materials and waste handling equipment. Its proximity to areas where dangerous waste is handled requires the following additional features:

- Sealed concrete floor that slopes to a 202-gallon (764.4-liters) sump for the collection of liquid from spills or leaks that might inadvertently enter the area (actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A)

- Same fire protection system as previously described for the storage cells

- Emergency exit door.

Equipment and material stored in the packaging material and handling equipment area are as follows:

- Tools, drum dollies, forklift, and other waste handling equipment
- Absorbents and other miscellaneous spill control equipment.

Additional containers and absorbents are stored in the portable storage unit located approximately 50 feet (15.2 meters) north of the 616 NRDWSF (Figure 2-3). A detailed list of equipment is included in the Building Emergency Plan - 616 Building provided in Appendix 7A.

2.1.3.5 Receiving Area. The receiving area, in the east end of the 616 NRDWSF (Figure 2-3), is a corridor used when transferring waste from the east loading area to the storage cells. Waste containers that are leaking or of questionable integrity sometimes are overpacked in this area. **[Amendment III.1.B.a.]** Compatible waste with incomplete paperwork also shall be staged in this area while discrepancies are resolved. Because of the types of activities that are performed in the receiving area, the area has the following additional features:

- Sealed concrete floor that slopes to a 252-gallon (953.9-liter) trench for the collection of liquid from spills or leaks that might inadvertently enter the area (actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A)

- Same fire protection system as previously described for the storage cells

- One and a half-hour fire-rated rollup doors at each end of the corridor.

2.1.3.6 Loading and Unloading Areas. The 616 NRDWSF has two loading and unloading areas (Figure 2-3). The primary loading and unloading area is a 20- by 30-foot (6.1- by 9.1-meter) sealed concrete slab with a 13- by 20-foot (4.0- by 6.1-meter) approach ramp. The primary loading and unloading area, located at the east end of the 616 NRDWSF, is provided for incoming and outgoing dangerous waste transfers. The slab is sloped to a trench for liquid collection. The trench has a drain (with a locking removable plug) that connects to a french drain (Figure 2-6) for the release of accumulated water (e.g., rainwater, snowmelt) (Section 2.5.1). Design drawings of the french drain are provided in Appendix 4B. The slab and ramp are surrounded by a curb with the exception of the ramp entry, which is at the high point of the slope. The curb provides containment and channels liquid to the collection trench in this area. **[Amendment III.1.B.kk.]** A mechanical fork truck lift and associated safety equipment (guards, handrails, etc.) are mounted on the containment pad. Design drawings of the mechanical fork truck lift are provided in Appendix 4B.

The secondary loading and unloading area [a 25-foot 6-inch by 20-foot (7.8- by 6.1-meter) slab with a 13- by 20-foot (4.0- by 6.1-meter) approach ramp] is located outside the combustible cell on the north side of the

616 NRDWSF. The secondary loading and unloading area is of identical construction to the primary loading and unloading area. This secondary loading and unloading area is a redundant system and is not used under normal operating conditions.

The containment trenches are kept free of excess water when the 616 NRDWSF is in operation. In the event that a dangerous waste spill occurs on either of the loading areas, the released material will be recaptured to the greatest extent possible using pumps, absorbents, or alternate methods. Any additional liquids used to decontaminate the spill area will be containerized and managed as specified in Chapter 3.0. Wipe samples will be performed to determine cleanup adequacy (Chapter 4.0, Section 4.1.1.8). Water (e.g., rainwater, snowmelt) accumulated in the trench before completion of the laboratory analysis or wipe samples also will be containerized. Accumulated water will be sampled and characterized if the initial wipe samples determine that the cleanup was inadequate. Actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A. Water accumulated in the 'clean' or 'spill free' loading and unloading area trenches will be drained to the french drain system (Section 2.5.1).

2.2 TOPOGRAPHIC MAPS [B-2]

A topographic map, showing a distance of at least 1,000 feet (305 meters) around the 616 NRDWSF, is located in Appendix 2A (Drawing H-13-000014). This map is at a scale of 1 unit equals 2,000 units. The contour interval clearly shows the pattern of surface water flow in the vicinity of the 616 NRDWSF. The map contains the following information:

- Map scale
- Date
- Prevailing wind speed and direction
- A north arrow
- Surrounding land use
- Legal boundaries of the 616 NRDWSF
- Access road location
- Access control
- Location of the 616 NRDWSF.

~~A legal description of the 616 NRDWSF site is provided in Appendix 2A.~~

2.3 LOCATION INFORMATION [B-3]

This section describes the location of the 616 NRDWSF in relation to seismic, floodplain, and shoreline considerations.

2.3.1 Seismic Consideration [B-3a]

The 616 NRDWSF was designed for seismic consideration in accordance with the *Hanford Plant Standards*, Standard Design Criteria - 4.1 (DOE-RL 1988a). This Plant Standard provides seismic load criteria specific for the Hanford Site. Therefore, no further demonstration of compliance with the seismic standard is required.

2.3.2 Floodplain Standard [B-3b]

Three sources of potential flooding of the storage unit were considered: (1) the Columbia River, (2) the Yakima River, and (3) storm-induced run-off in ephemeral streams draining the Hanford Site. No perennial streams occur in the central part of the Hanford Site.

The Federal Emergency Management Agency has not prepared floodplain maps for the Columbia River through the Hanford Site. The flow of the Columbia River is largely controlled by several upstream dams that are designed to reduce major flood flows. Based on a U.S. Army Corps of Engineers study of the flooding potential of the Columbia River that considered historic data and water storage capacity of the dams on the Columbia River (COE 1969), the U.S. Department of Energy (ERDA 1976) has estimated the probable maximum flood (Figure 2-7). The estimated probable maximum flood would have a larger floodplain than either the 100- or 500-year floods. The 616 NRDWSF is well above the elevation of the Columbia River probable maximum flood and therefore is not within the 100- or 500-year floodplain.

The 100-year floodplain for the Yakima River, as determined by the Federal Emergency Management Agency (FEMA 1980), is shown in Figure 2-8. The 616 NRDWSF is not within the floodplain.

The only other potential source of flooding of the 616 NRDWSF is run-off from a large precipitation event in the Cold Creek watershed. This event could result in flooding of the ephemeral Cold Creek. Skaggs and Walters (1981) have given an estimate of the probable maximum flood using conservative values of precipitation, infiltration, surface roughness, and topographic features. The resulting flood area (Figure 2-9) would not affect the 616 NRDWSF. The 100-year flood would be less than the probable maximum flood.

2.3.2.1 Demonstration of Compliance [B-3b(1)]. The 616 NRDWSF is not located within a 100-year floodplain. Therefore, no demonstration of compliance is required.

2.3.2.1.1 Flood Proofing and Flood Protection Measures [B-3b(1)(a)]. The 616 NRDWSF is not located within a 100-year floodplain. Therefore, no demonstration of compliance is required.

2.3.2.1.2 Flood Plan [B-3b(1)(b)]. The 616 NRDWSF is not located within a 100-year floodplain. Therefore, no demonstration of compliance is required.

2.3.2.2 Plan for Future Compliance with Floodplain Standard [B-3b(2)]. The 616 NRDWSF is not located within a 100-year floodplain. Therefore, no demonstration of compliance is required.

2.3.3 Shoreline Standard [B-3c]

The 616 NRDWSF is not located within regulated 'shorelines of the state' or 'wetlands' as defined in the *Shoreline Management Act of 1971*. The 616 NRDWSF is located on the Hanford Site, which is owned by the U.S. Government and operated by the DOE-RL. The Hanford Site is not classified as natural, conservancy, rural, or residential.

2.3.4 Sole Source Aquifer Criteria [B-3d]

The 616 NRDWSF is not located over a 'sole source aquifer' as defined in Section 1424(e) of the *Safe Drinking Water Act of 1974*.

2.4 TRAFFIC INFORMATION [B-4]

The regional highway network traversing the Hanford Site (Washington State Highways 24 and 240 and Route 10, and that portion of Route 4S south of the Wye Barricade) and the restricted access roadways are shown in Figure 2-1.

Roadways on the Hanford Site north of the Wye Barricade and within the 300 and 400 Areas are restricted to authorized personnel. The 616 NRDWSF is located approximately 4 miles (6.4 kilometers) from the nearest roadway (Washington State Highway 240) that has unrestricted public access. Estimated traffic volumes, in vehicles per day, are shown on Figure 2-10. The majority of traffic is passenger vehicles used for commuting and conducting company business. Approximately 10 percent of the traffic volume is trucks, and these trucks are mainly delivery, construction, and maintenance vehicles.

2.4.1 Hanford Site Roadways

Figure 2-10 shows the major roads throughout the Hanford Site. These roads are classified as either primary or secondary routes. The primary routes include Routes 4N, 4S, 10, 2N, 3, 6, and 11A, as well as various avenues within each area. The primary routes are constructed of bituminous asphalt [usually 2 inches (5.1 centimeters) thick, but the thickness of the asphalt layer will vary with each road] with an underlying aggregate base in accordance with U.S. Department of Transportation requirements. The secondary routes are constructed of layers of an oil and rock mixture with an underlying aggregate base. The aggregate base consists of various types and sizes of rock found onsite. Currently, no load-bearing capacities of these roads are available; however, loads as large as 140 pounds (63.5 kilograms) per square inch have been transported without observable damage to road surfaces. All roads meet the requirements for the American Association of State Highway and Transportation Officials HS-20-44 load rating (AASHTO 1983). An HS-20-44 loading represents a two-axle tractor [front axle loading of 8,000 pounds (3,628.7 kilograms) and rear axle loading of 32,000 pounds 14,515 kilograms)] plus a single-axle trailer with a 32,000-pound (14,515-kilograms) axle loading.

2.4.2 The 616 Nonradioactive Dangerous Waste Storage Facility Roadways

The 616 NRDWSF is located approximately 200 feet (61 meters) north of Route 3 (Figure 2-2). The access road from Route 3 to the 616 NRDWSF has a graded gravel surface with an underlying aggregate base. This surface may be paved to control dust. Drawing H-13-000014 in Appendix 2A shows the 616 NRDWSF access road configuration.

2.4.3 Traffic Control Signs, Signals, and Procedures

Standard traffic control signs are used throughout the Hanford Site (e.g., hexagonal stop signs, triangular yield signs). The only traffic light in the vicinity of the 616 NRDWSF is a flashing amber warning light in front of the 609-A Fire Station on Route 3 (Figure 2-2). The light is switched to red whenever an emergency requires a rapid response from the Hanford Fire Department.

Speed limits are posted throughout the Hanford Site, and the maximum posted speed is 55 miles (88.5 kilometers) per hour on major thoroughfares. Inside the 200 East and 200 West Areas, posted speeds are reduced to a maximum of 35 miles (56.3 kilometers) per hour, and held to speeds as low as 15 miles (24.1 kilometers) per hour.

2.5 PERFORMANCE STANDARDS [B-5]

The 616 NRDWSF is designed to minimize the exposure of personnel to dangerous waste and hazardous substances and to prevent dangerous waste and hazardous substances from reaching the environment.

In addition, measures are taken to ensure that the 616 NRDWSF is maintained and operated in a manner that prevents:

- Degradation of groundwater quality
- Degradation of air quality by open burning or other activities
- Degradation of surface water quality
- Destruction or impairment of flora or fauna outside of the 616 NRDWSF
- Excessive noise
- Negative aesthetic impacts

- Unstable hillsides or soils

- Use of processes that do not treat, detoxify, recycle, reclaim, and recover waste material to the extent economically feasible

- Endangerment to the health of employees or the public near the 616 NRDWSF.

The measures taken to prevent each of the above negative effects from occurring are described in the following sections.

2.5.1 Measures to Prevent Degradation of Groundwater Quality

Degradation of groundwater quality is prevented by storing waste containers inside an enclosed concrete building on self-contained, sealed concrete pads. In addition, the 616 NRDWSF accepts only those waste packages meeting appropriate U.S. Department of Transportation requirements. Containers are opened only in areas with spill containment. The 616 NRDWSF design and administrative controls significantly reduce the possibility of loss of waste to the ground and/or contamination of the groundwater. [In the vicinity of the 616 NRDWSF, the water table ranges from about 180 to 280 feet (54.9 to 85.3 meters) below the surface.]

Each loading pad trench drain plug is kept closed and secured when not in use. The 616 NRDWSF ~~Supervisor~~ supervisor controls the trench key. When water (e.g., rainwater, snowmelt) from a known source has accumulated in either of the loading pad trenches, it is released to the ground via the french drain (Figure 2-6). Before the liquid is released, the following is performed.

1. Liquid is visually inspected for signs of contamination and analyzed to determine the presence of contaminants.

2. Daily inspection reports and the 616 NRDWSF logbook are reviewed to identify any spills on the pad.

3. Cleanup reports are reviewed to verify that the pad is clean (Section 2.7.2.1).

4. The 616 NRDWSF ~~Solid Waste Operations Unit Supervisor~~ supervisor contacts ~~Solid Waste Engineering~~ solid waste management and reviews steps 1 through 3 above. Solid ~~Waste Engineering~~ waste management gives concurrence.

5. The 616 NRDWSF ~~Solid Waste Operations Unit Supervisor~~ supervisor signs the logbook indicating that the above steps have been completed and that the pad is clean (Section 2.7.2.1). The ~~Solid Waste Engineering~~ solid waste management contact is noted in the logbook.

6. The 616 NRDWSF ~~Solid Waste Operations Unit Supervisor~~ supervisor or designee unlocks the drain plug.

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7. After the trench has completely drained, the 616 NRDWSF ~~Supervisor~~ supervisor or designee locks the drain plug closed.

8. The 616 NRDWSF ~~Supervisor~~ supervisor or designee signs the logbook indicating that the trench was drained and the drain plug was closed and secured.

Water that has accumulated in the loading pad trenches that cannot be verified to be free of contamination is containerized and stored in an area of the 616 NRDWSF that is equipped with secondary containment (Chapter 4.0, Section 4.1.1.8). **Note:** Solid waste management is contacted to characterize liquid only if the liquid is containerized. The containerized water is handled in accordance with the provisions of the waste analysis plan described in Chapter 3.0, Section 3.2.

2.5.2 Measures to Prevent Degradation of Air Quality by Open Burning or Other Activities

No open burning occurs at the 616 NRDWSF to degrade air quality. Vegetation around the 616 NRDWSF has been removed within 25 feet (7.6 meters) of the storage building and the soil has been compacted, thereby reducing the risk of a fire or wind erosion near the 616 NRDWSF. Combustible waste and flammable waste are packaged in a manner that reduces the potential for fire.

2.5.3 Measures to Prevent Degradation of Surface Water Quality

The potential for degradation of surface water is extremely low because there is no natural surface water near the 616 NRDWSF. The Columbia River is approximately 10 miles (16.1 kilometers) from the 616 NRDWSF and Cold Creek (ephemeral) is approximately 4 miles (6.4 kilometers) from the 616 NRDWSF. Rainwater soaks into the sandy soil rather than flowing on the soil surface. Small pools can be observed after rapid snowmelt, but these usually dissipate within 72 hours. In addition, waste packages are handled on loading pads with sealed concrete containment systems.

2.5.4 Measures to Prevent Destruction or Impairment of Flora or Fauna Outside of the Storage Unit

The 616 NRDWSF activities associated with dangerous waste storage do not appear to have altered the flora and fauna outside the storage building for the ~~5 years~~ time the 616 NRDWSF has been in operation. Because the 616 NRDWSF only stores waste packages and these packages are not opened during normal operations (abnormal operations include a leaking waste package requiring transfer to a new package), there is no impact on the flora or fauna outside the 616 NRDWSF.

2.5.5 Measures to Prevent Excessive Noise

During normal operations, excessive noise is not generated. The 616 NRDWSF also is located away from residential and industrial areas. Any noise generated is heard only by the 616 NRDWSF personnel and the Hanford Fire Department personnel in the 609-A Fire Station (Figure 2-2).

2.5.6 Measures to Prevent Negative Aesthetic Impacts

The 616 NRDWSF does not injure or destroy the surrounding flora and fauna. The 616 NRDWSF stores waste in U.S. Department of Transportation-approved containers within the confines of the storage building. The storage building is fairly new (constructed in 1986) with an exterior that complements the surrounding terrain. For these reasons, the 616 NRDWSF presents no negative aesthetic impacts.

2.5.7 Measures to Prevent Unstable Hillsides or Soils

There are no naturally unstable hillsides or soils near the 616 NRDWSF. The soil beneath and around the storage unit was compacted with a mechanical tamper before construction activities commenced. After each pass, a sample was taken and analyzed for depth of lift, percent moisture, pounds per cubic foot - dry, maximum density, and percent compaction. When the percent compaction reached or exceeded 95 percent, the soil compaction was accepted. Details of the soil compaction process are included in the construction specification provided in Appendix 4A.

2.5.8 Measures to Prevent the Use of Processes That Do Not Treat, Detoxify, Recycle, Reclaim, and Recover Waste Material to the Extent Economically Feasible

The 616 NRDWSF is a storage building only. Under normal operating conditions, no waste is treated, detoxified, recycled, reclaimed, or recovered in any manner at the 616 NRDWSF. Therefore, this requirement is not applicable to the 616 NRDWSF.

2.5.9 Measures to Prevent Endangerment to the Health of Employees or the Public Near the Storage Unit

The 616 NRDWSF is isolated from the general public [approximately 25 miles (40.2 kilometers) from the nearest population center, Richland, Washington]. Employee and public protection is enhanced further by administrative controls over the designation, packaging, loading, transporting, and storing of dangerous waste. Each generating unit must receive written approval for the type, quantity, and packaging of the waste before being handled at the 616 NRDWSF.

Employees are trained to handle and store waste packages. The training includes dangerous waste awareness, emergency response, and workplace safety (Chapter 8.0). Protective equipment, safety data, and hazardous materials information are readily available for employee use.

A contingency plan, consisting of a building emergency plan and emergency response procedures, is in place. This plan is implemented for spill prevention and containment, and provides countermeasures to reduce safety and health hazards to employees, the environment, and the public. The contingency plan is described in Chapter 7.0.

2.6 BUFFER MONITORING ZONES [B-6]

Requirements for buffer monitoring zones have been deleted from WAC-173-303-440. Therefore, no discussion of the checklist items under buffer monitoring zones [B6] will be included in this permit application.

2.7 SPILLS AND DISCHARGES INTO THE ENVIRONMENT [B-7]

The procedures that are followed to ensure immediate response to a nonpermitted spill or discharge of dangerous waste from the 616 NRDWSF to the environment are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A.

2.7.1 Notification [B-7a]

The following are details of notification of the DOE-RL, Ecology, and the National Response Center.

- The building emergency director or line management documents all emergencies on an occurrence report (Figure 2-11), which must be completed within 24 hours. The occurrence report is used to provide management with facts about an unplanned event and to disseminate information to those responsible for preventing recurrence of similar events. The DOE-RL is notified by either line management or the assigned overview organization, depending on the consequences of the event. Copies of the occurrence reports are retained at the 616 NRDWSF.

- All detectable spills to the environment and/or the atmosphere will be reported immediately to the Occurrence Notification Center. The Occurrence Notification Center notifies Ecology of the release of dangerous waste.

- Upon detection, immediate notification will be made to Ecology at (206) 438-7016 of all spills as required under applicable regulations.

- In addition, if a spill exceeds the reportable quantities established under *Comprehensive Environmental Response, Compensation, and*

Liability Act (CERCLA) *of 1980*, according to 40 CFR 302, the Occurrence Notification Center will notify the National Response Center 800-424-8802.

- The report to Ecology and the National Response Center will contain the following information:

  - Name and telephone number of reporter
  - Name and location of waste unit or zone
  - Time and type of incident
  - Name and quantity of material(s) involved to the extent known
  - Extent of injuries if any
  - Possible hazards to human health and the environment outside the Hanford Facility boundary.

- All detectable releases of dangerous waste, including those that do not exceed a CERCLA limit, are reported to the Hanford Fire Department and the contractor's environmental protection organization. The contractor's environmental protection organization compiles a report for submittal to the DOE-RL. The reports are kept on file at the 616 NRDWSF and are available for review by the appropriate regulatory agencies. The DOE-RL submits the report to the following address:

  Washington State Department of Ecology
  7601 West Clearwater, Suite 102
  Kennewick, WA 99336
  Phone: 509-546-2990.

- All detectable spills or releases that occur during transportation by an independent transporter (i.e., transporter with their own EPA/State identification number) will be reported by the transporter to the Occurrence Notification Center, the DOE-RL, and Ecology. In addition, a written report will be submitted to the following address:

  Director, Office of Hazardous Material Regulations
  Materials Transport Bureau
  Department of Transportation
  Washington, D.C. 20990.

[Amendment III.1.B.b.] In addition, all reporting requirements will be complied with as identified in the RCRA Permit Conditions I.E.15. through I.E.22.

2.7.2 Mitigation and Control [B-7b]

Actions taken to protect human health and the environment in the event of a nonpermitted spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A. A discussion of the most likely types of spills or discharges to occur at the 616 NRDWSF is included in the Building Emergency Plan - 616 Building.

2.7.2.1 Cleanup of Released Wastes or Substances [B-7b(1)]. Actions to be taken to clean up all released hazardous/dangerous waste or hazardous substances and the criteria used to determine the extent of removal are addressed in contingency plan documents noted in Chapter 7.0.

2.7.2.2 Management of Contaminated Soil, Waters, or Other Materials [B-7b(2)]. Actions to be taken to demonstrate that all soil, waters, or other materials contaminated by a spill or discharge will be treated, stored, or disposed of in accordance with WAC 173-303 are addressed in contingency plan documents noted in Chapter 7.0.

2.7.2.3 Restoration of Impacted Area [B-7b(3)]. Because of the remote location of the 616 NRDWSF [near the center of the DOE-RL managed Hanford Facility (Figure 2-1)], spills or discharges occurring on property that is not owned by the U.S. Government are unlikely. Therefore, a description of the actions to be taken to restore the impacted area and to replenish resources is not required.

2.8 MANIFEST SYSTEM [B-8]

The Hanford Facility uses an EPA Uniform Hazardous Waste Manifest for all offsite shipments of dangerous waste. **[Amendment III.1.B.c.]** Onsite waste tracking forms are used for transporting waste on the Hanford Facility.

[Amendment III.1.B.d.] The following sections provide requirements for receiving shipments, response to manifesting discrepancies, and provisions for nonacceptance of shipments.

2.8.1 Procedures for Receiving Shipments [B-8a]

Before ~~shipment~~ transfer of nonradioactive dangerous waste to the 616 NRDWSF, the following occurs (Chapter 3.0, Section 3.2).

- The generating unit secures the waste in a controlled, less-than-90-day-storage area, satellite accumulation area, CERCLA cleanup site, or expedited response action site.

- If the contents of the container cannot be verified, the waste coordinator for the generating unit (Chapter 3.0, Section 3.2) identifies the waste from associated manufacturer's data, waste records, or sample analysis.

- The waste coordinator for the generating unit submits a waste storage/disposal request (Chapter 3.0, Section 3.2) to ~~Solid Waste Engineering~~ solid waste management.

- A trained designator in ~~Solid Waste Engineering~~ solid waste management identifies the proper waste designation.

- The completed waste designation is reviewed and signed by a peer designator and a ~~Solid Waste Engineering~~ solid waste management manager.

- Solid ~~Waste Engineering~~ waste management sends a hazardous waste disposal analysis record (Chapter 3.0, Section 3.2) to the generating unit's waste coordinator and to 616 NRDWSF operating personnel.~~, the Transportation Logistics group, and the Solid Waste Disposal group.~~

- The generating unit's waste coordinator ensures that the dangerous waste is packaged, marked, and labeled in accordance with the hazardous waste disposal analysis record.

- The generating unit's waste coordinator prepares an onsite waste tracking form or Uniform Hazardous Waste Manifest. The onsite waste tracking form or Uniform Hazardous Waste Manifest identifies the applicable contractor as the transporter and the 616 NRDWSF as the receiving storage unit.

- Transportation ~~Logistics~~ personnel inspect the containers for compliance with U.S. Department of Transportation regulations and compliance with the hazardous waste disposal analysis record.

- ~~Solid Waste Disposal personnel transport~~ A transporter transports the dangerous waste from the generating unit to the 616 NRDWSF.

Before a ~~shipment~~ transfer is accepted at the 616 NRDWSF, each container is reviewed against the onsite waste tracking form or the Uniform Hazardous Waste Manifest, and the hazardous waste disposal analysis record. During the review, the following items are checked:

- Proper shipping name

- Proper hazard class

- Proper marking and labeling

- Valid radiation release sticker in place ~~[~~(except for exempted facilities)~~ (Appendix 3A)]~~

- Proper packaging (e.g., correct ~~specification~~ container specification)

- Container condition.

[Amendment III.1.B.mm.]

- Evidence tape from field verified waste is untampered.

If the container passes these checks, the container is placed in the appropriate storage cell (Chapter 4.0, Section 4.1.1.2 and Chapter 6.0, Section 6.4.1). The acceptance procedure also ensures the following occurs.

- Significant discrepancies are noted on all copies of the waste tracking form or Uniform Hazardous Waste Manifest.

- The transporter is given one signed copy of the waste tracking form or Uniform Hazardous Waste Manifest.

- A copy of the waste tracking form or Uniform Hazardous Waste Manifest is sent to the generating unit within 30 days of receipt.

- A copy of the waste tracking form or Uniform Hazardous Waste Manifest is retained for at least 5 years by the 616 NRDWSF and ~~Solid Waste Engineering~~ solid waste management organization.

All dangerous waste stored at the 616 NRDWSF is shipped offsite for treatment, storage, and/or disposal. Before shipment offsite, all waste is manifested to comply with U.S. Department of Transportation, EPA, WAC, and other applicable regulations.

2.8.2 Response to Significant Discrepancies [B-8b]

The primary concern during acceptance of containers for storage is improper packaging or waste tracking form/Uniform Hazardous Waste Manifest discrepancies. Depending on the nature of the condition, such discrepancies can be resolved through the use of one or more of the following alternatives.

- Incorrect or incomplete entries on waste tracking forms can be corrected or completed with concurrence of the generating unit's waste coordinator and the ~~Solid Waste Engineering~~ solid waste management staff. Corrections are made by drawing a single line through the incorrect entry. Corrected entries are initialed and dated by the individual making the correction.

- The waste packages can be held and the generating unit's waste coordinator requested to provide written instructions for use in correcting conditions before the waste is accepted.

- The generating unit's waste coordinator can be requested to correct the condition before the waste is accepted.

Waste tracking form and/or Uniform Hazardous Waste Manifest discrepancies are considered resolved when all parties are satisfied with the designation and packaging. To prevent any problems that could occur during transportation back to generating units, all waste tracking form and/or Uniform Hazardous Waste Manifest discrepancies are resolved at the 616 NRDWSF.

2.8.3 Provisions for Nonacceptance of Shipment [B-8c]

Provisions for nonacceptance of shipments are discussed in the following sections. Waste from non-DOE-RL offsite sources is not accepted at the 616 NRDWSF.

2.8.3.1 Nonacceptance of Undamaged Shipment [B-8c(1)]. Shipments of materials that the 616 NRDWSF is not designed to store [explosives, class IV oxidizers greater than 10 pounds (4.5 kilograms), and waste without proper radiation releases] are rejected. All other types of discrepancies are resolved at the 616 NRDWSF before further transportation.

2.8.3.2 Activation of Contingency Plan for Damaged Shipment [B-8c(2)]. If a shipment arrives in a condition as to present a hazard to public health or the environment in the process of further transportation, the contingency plan is implemented. The contingency plan is described in the Building Emergency Plan - 616 Building provided in Appendix 7A.

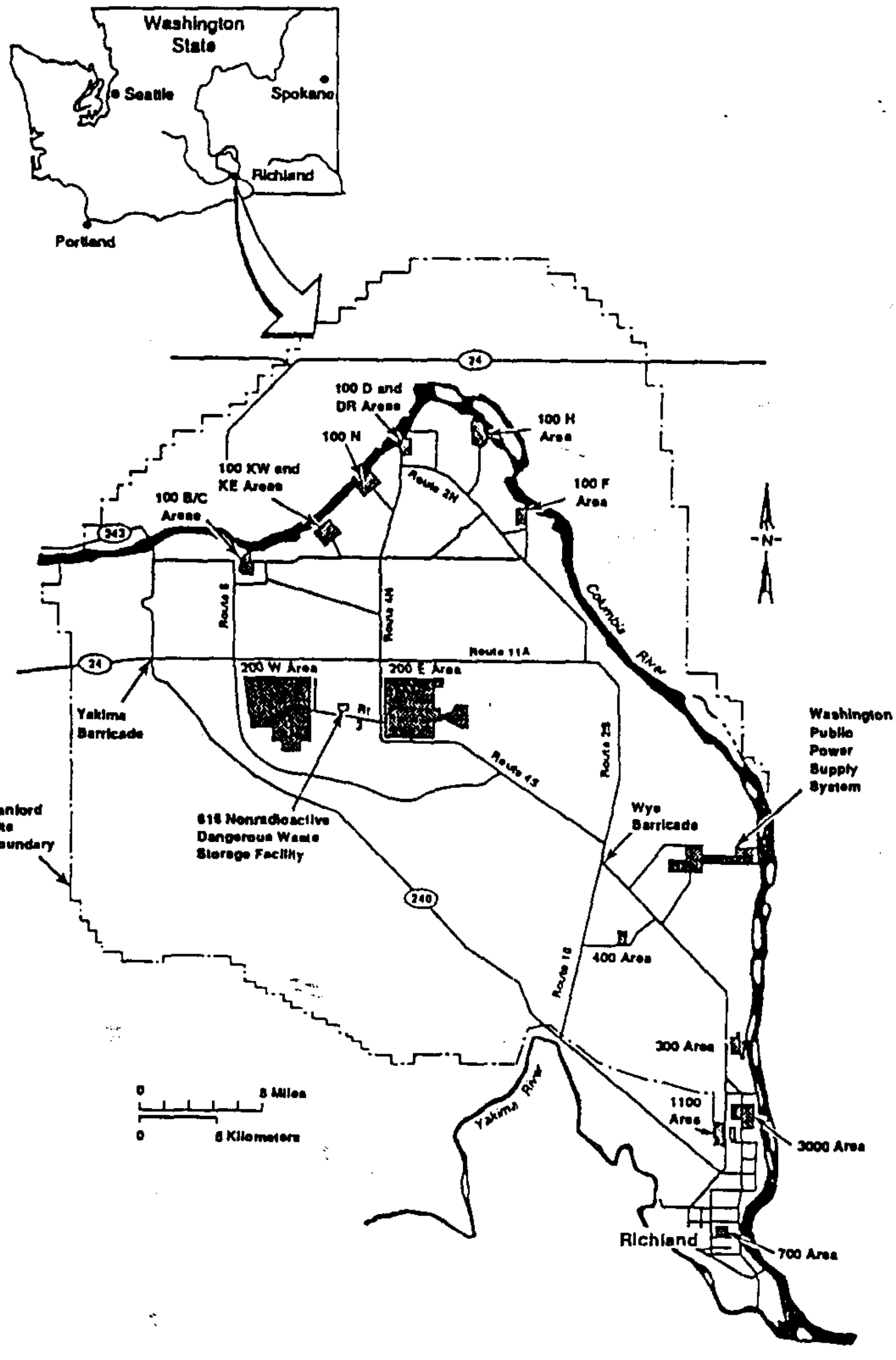

Figure 2-1. Hanford Site Map.

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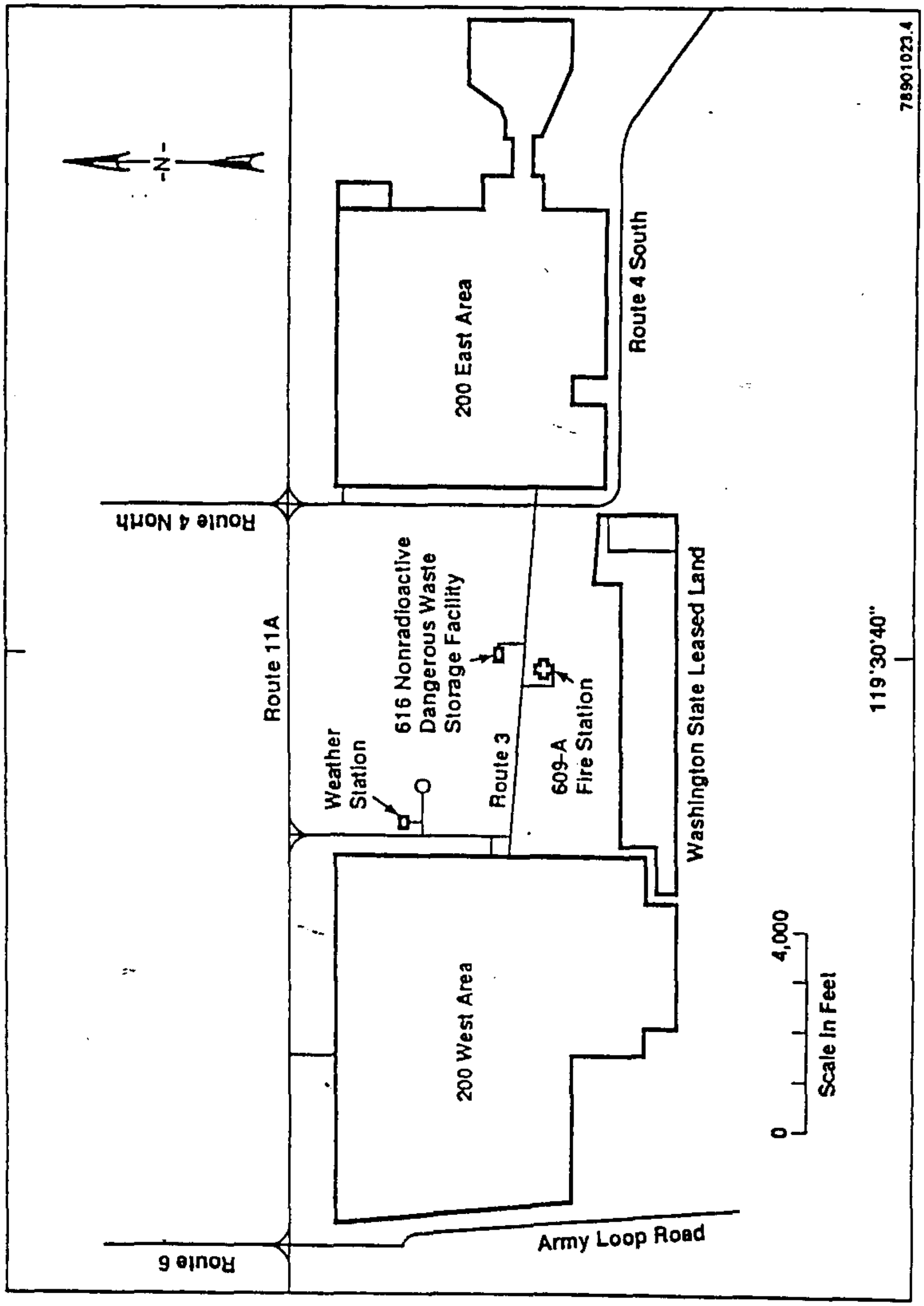

1 Figure 2-2. The 616 Nonradioactive Dangerous Waste Storage
2 Facility Location.

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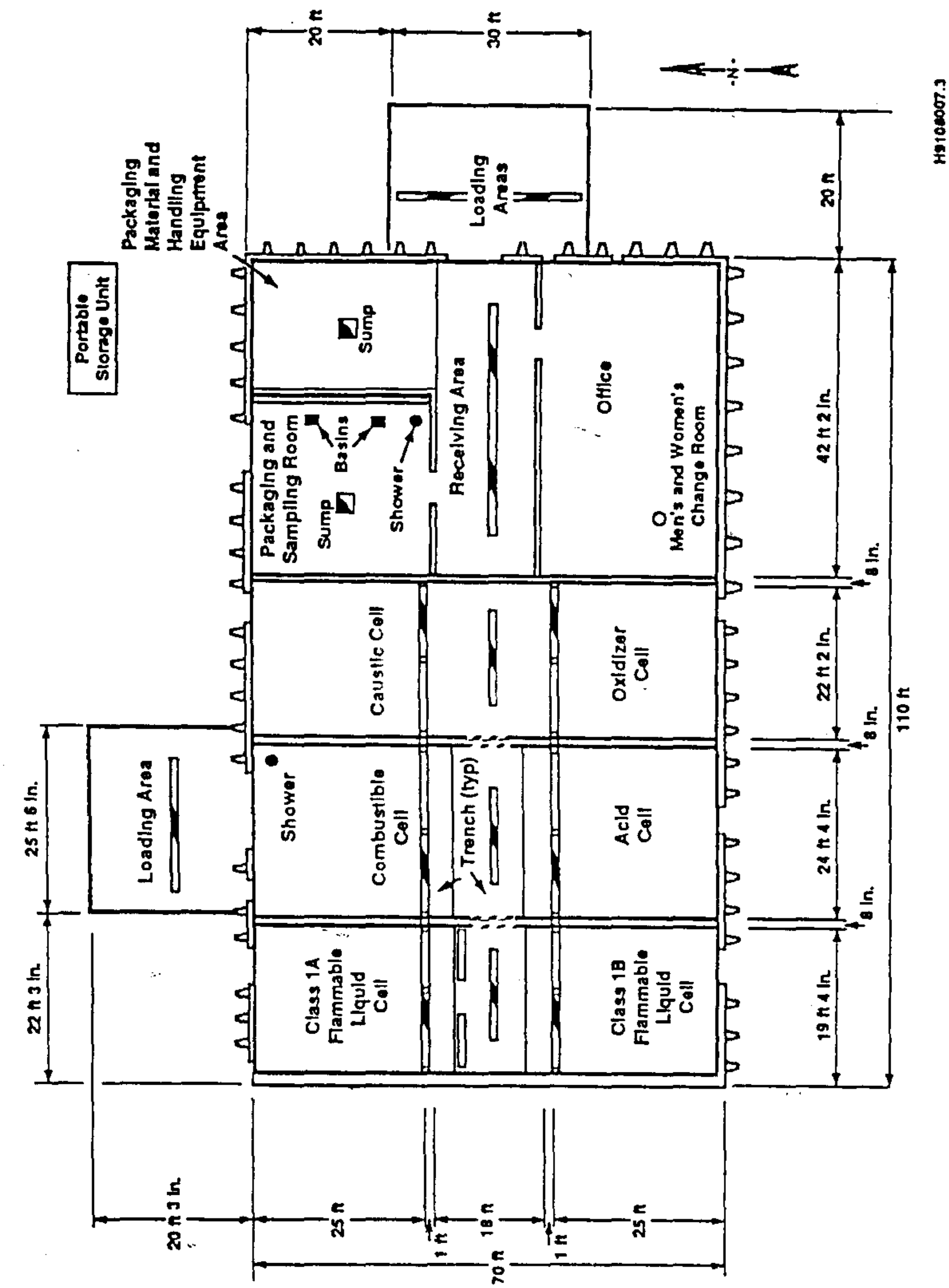

Figure 2-3. The 616 Nonradioactive Dangerous Waste Storage Facility Floor Plan.

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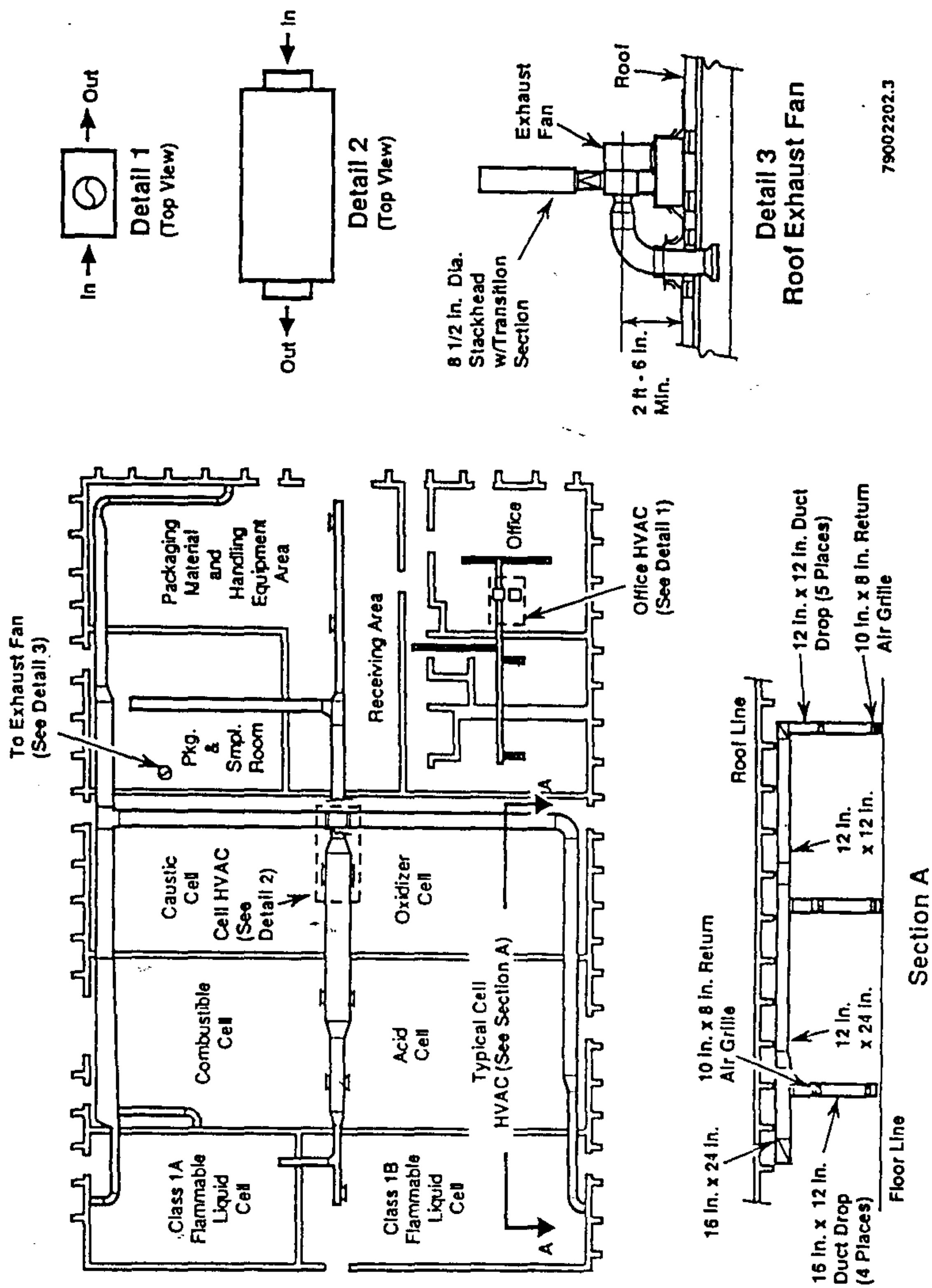

Figure 2-4. The 616 Nonradioactive Dangerous Waste Storage Facility Heating, Ventilation, and Air Conditioning Schematic.

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616 BUILDING STORAGE COMPATIBILITY CELLS

STORAGE AREA	PRIMARY STORAGE	SECONDARY STORAGE	PROHIBITED STORAGE
* FLAMMABLE *Class IA* FP < 73°F (BP < 100°F)	Flammable Solids Flammable Liquids - 1A Flammable Gases Spontaneously Combustible Materials	Non-RCRA Waste Solids Non-RCRA Waste Liquids Combustible Liquids Flammable Liquids - 1B & 1C Non-Flammable Gases Flammable Gases Irritating Materials Class 9, Misc. Haz. Materials	Flammable Solids - DWW † Poison Gases Corrosive Materials (Acidic) Corrosive Materials (Caustic)
* FLAMMABLE *Classes IB & IC* FP < 73°F (BP ≥ 100°F) 73°F ≤ FP < 100°F	Flammable Solids Flammable Liquids - 1B & 1C Non-Flammable Gases Spontaneously Combustible Materials	Non-RCRA Waste Solids Non-RCRA Waste Liquids Combustible Liquids Irritating Materials Class 9, Misc. Haz. Materials	Flammable Solids - DWW † Flammable Liquids - 1A Poison Gases Corrosive Materials (Acidic) Corrosive Materials (Caustic)
* FLAMMABLE *Class IA - Cabinet* Dangerous When Wet	Flammable Solids - DWW †	Flammable Solids Flammable Liquids - 1A Flammable Liquids - 1B & 1C	Non-RCRA Waste Liquids Poison Gases Corrosive Materials (Acidic) Corrosive Materials (Caustic)
* FLAMMABLE *Class IB & IC - Cabinet* Dangerous When Wet	Flammable Solids - DWW †	Flammable Solids Flammable Liquids - 1B & 1C	Non-RCRA Waste Liquids Poison Gases Corrosive Materials (Acidic) Corrosive Materials (Caustic)
* COMBUSTIBLE *Class II, Class IIIA & IIIB* 100°F ≤ FP < 140°F 140°F ≤ FP < 200°F FP ≥ 200°F	Non-RCRA Waste Solids Non-RCRA Waste Liquids Combustible Liquids Poison Gases Poisonous Materials ‡ Irritating Materials Class 9, Misc. Haz. Materials	Flammable Solids Non-Flammable Gases	Flammable Solids - DWW † Flammable Liquids Flammable Gases Corrosive Materials (Acidic) Corrosive Materials (Caustic)
OXIDIZER Promotes Combustion	Non-RCRA Waste Solids Non-RCRA Waste Liquids Oxidizers Organic Peroxides Irritating Materials Class 9, Misc. Haz. Materials	Combustible Liquids Non-Flammable Gases Poisonous Materials ‡	Flammable Solids - DWW † Flammable Liquids Flammable Gases Poison Gases Corrosive Materials (Acidic) Corrosive Materials (Caustic)
ACIDIC pH < 7	Non-RCRA Waste Solids Poisonous Materials ‡ Corrosive Materials (Acidic) Irritating Materials Class 9, Misc. Haz. Materials	Combustible Liquids Non-RCRA Waste Liquids Non-Flammable Gases	Flammable Solids - DWW † Flammable Solids Flammable Liquids Flammable Gases Poison Gases Oxidizers Organic Peroxides Corrosive Materials (Caustic)
CAUSTIC pH > 7	Non-RCRA Waste Solids Corrosive Materials (Caustic)	Combustible Liquids Non-RCRA Waste Liquids Non-Flammable Gases Poisonous Materials ‡	Flammable Solids - DWW † Flammable Solids Flammable Liquids Flammable Gases Poison Gases Oxidizers Organic Peroxides Corrosive Materials (Acidic)
Packaging & Sampling Room		Non-RCRA Waste Solids Non-RCRA Waste Liquids Combustible Liquids Irritating Materials Class 9, Misc. Haz. Materials	Flammable Solids - DWW † Flammable Liquids Flammable Gases Corrosive Materials (Acidic) Corrosive Materials (Caustic)

* *Use of the terms "FLAMMABLE" and "COMBUSTIBLE" in this table are as defined in the 1993 Edition of NFPA 30, not 49 CFR.*
† *Class 4.3, Dangerous When Wet Material*
‡ *Poisonous Liquids, Packing Group I, Zone A, may be stored in the COMBUSTIBLE cell only.*

1 Figure 2-5. Waste Storage Compatibility by Hazard Class.

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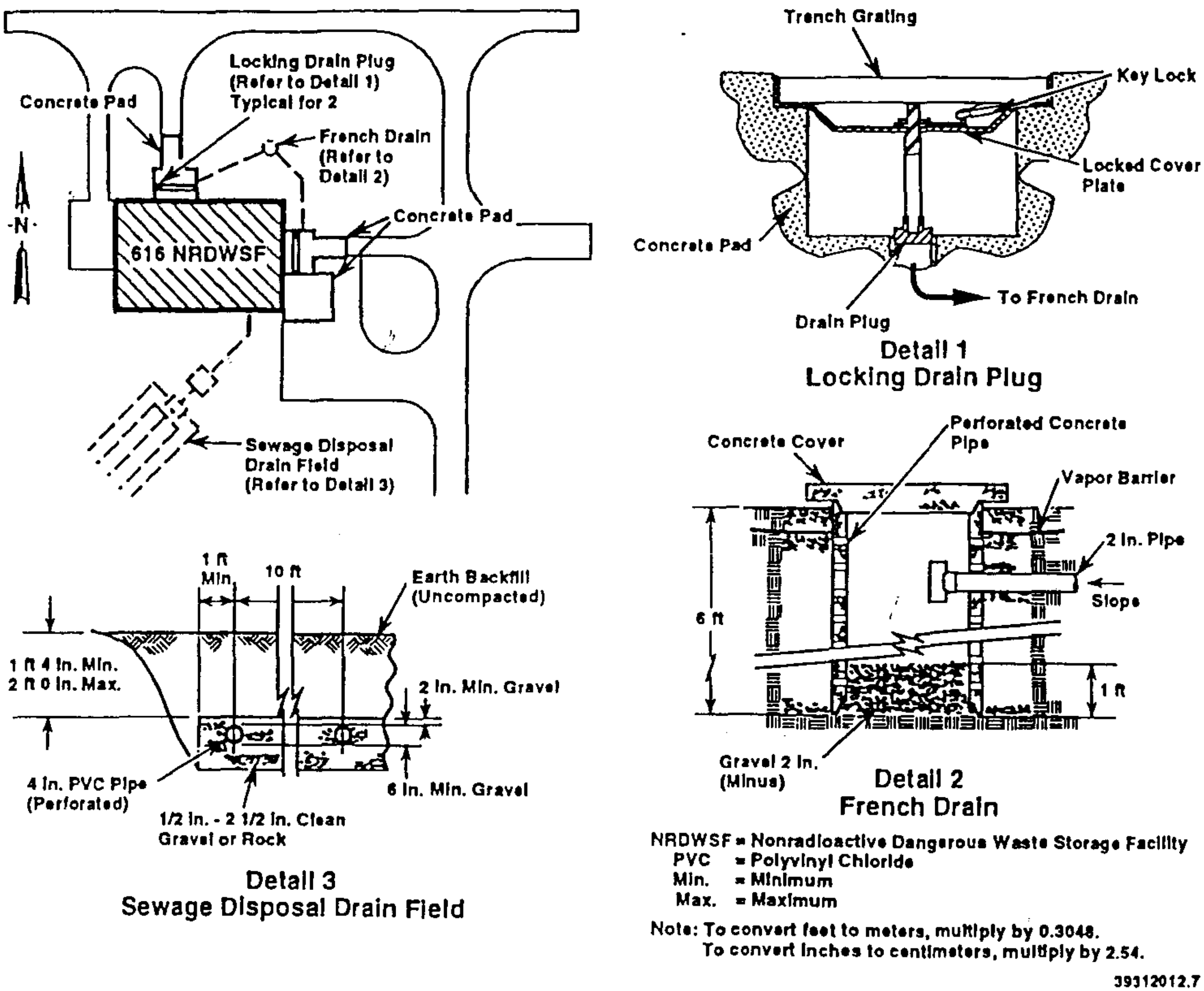

Figure 2-6. Diagram of French Drain.

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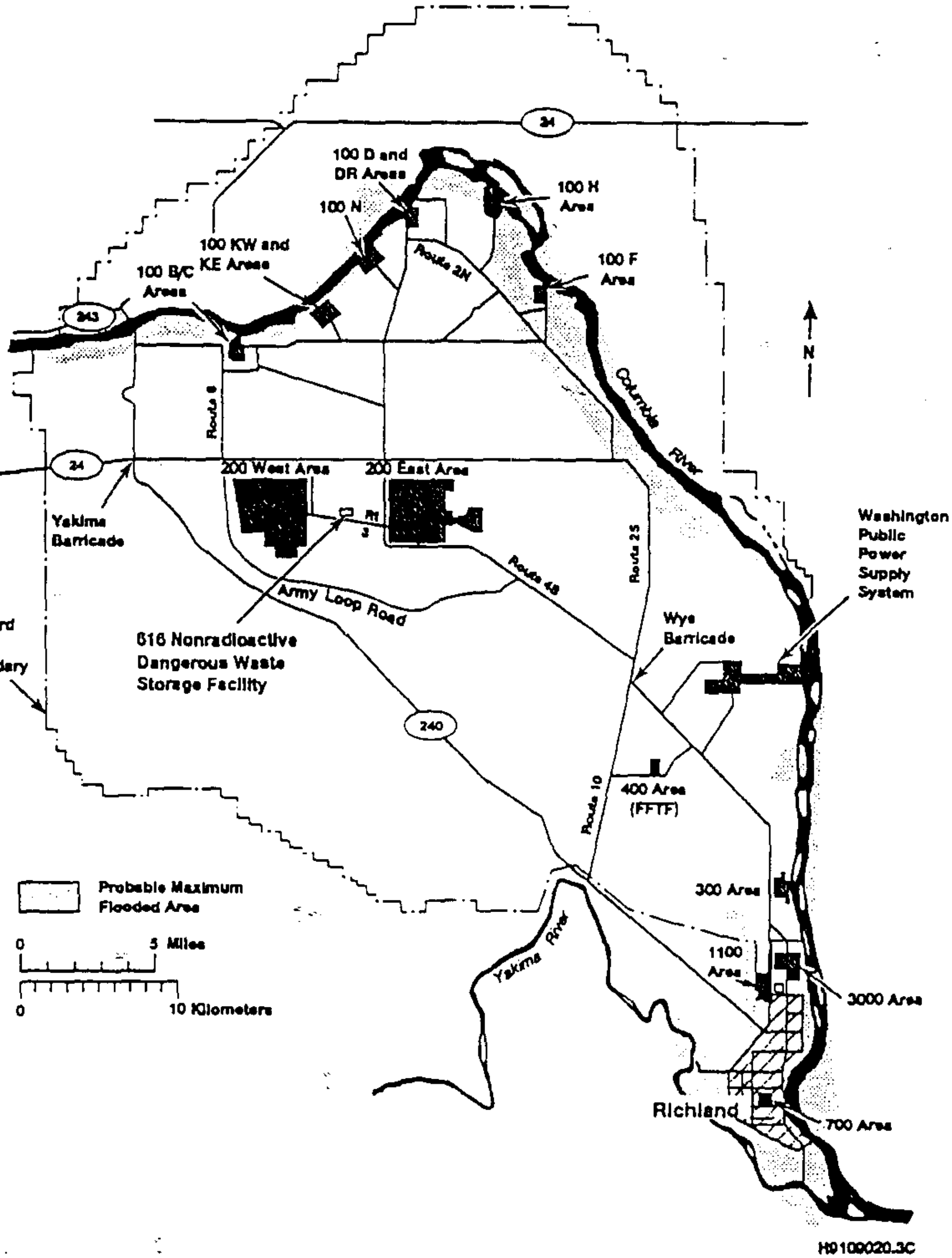

1 Figure 2-7. Columbia River Floodplain (probable maximum flood).

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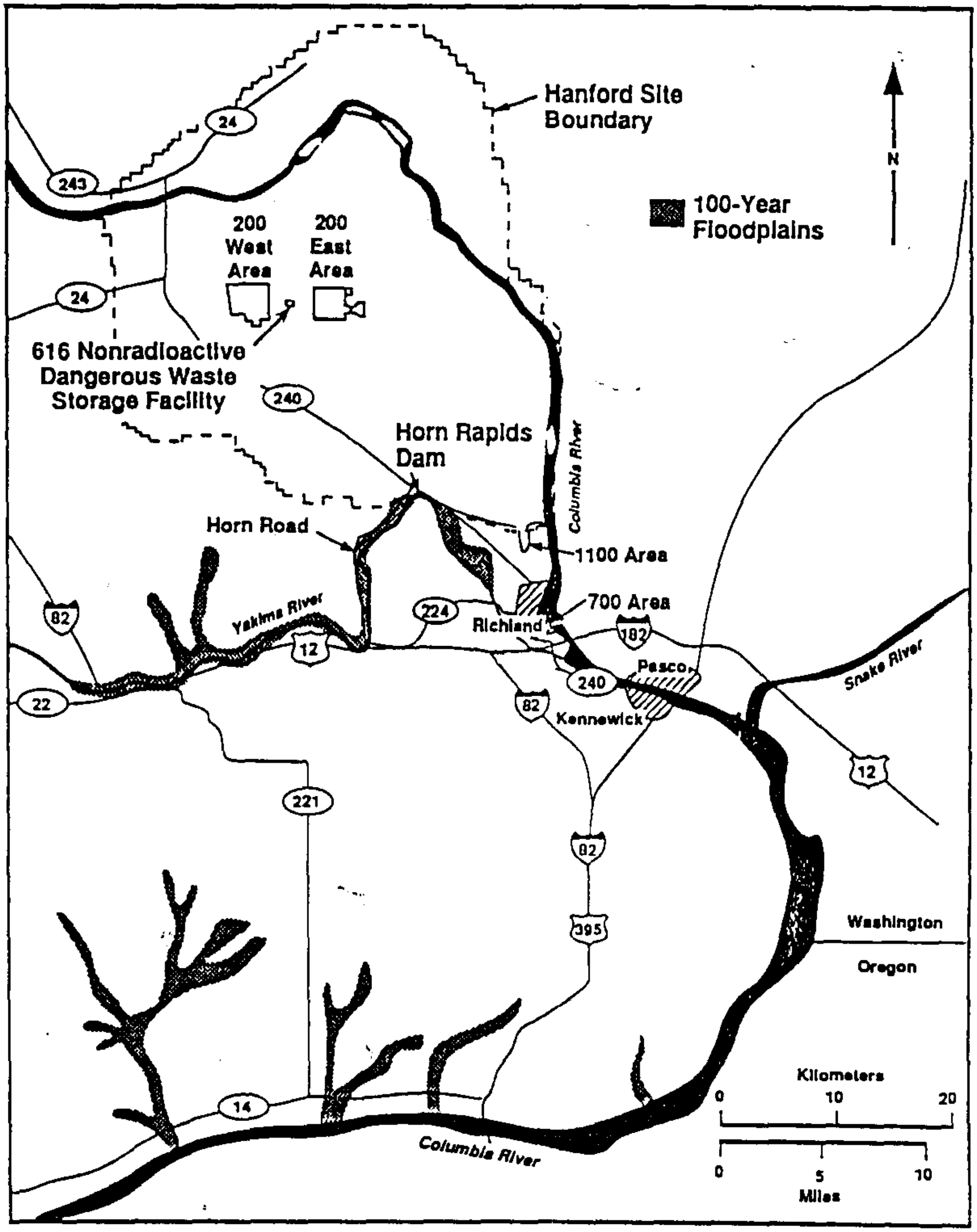

Figure 2-8. Yakima River Floodplain.

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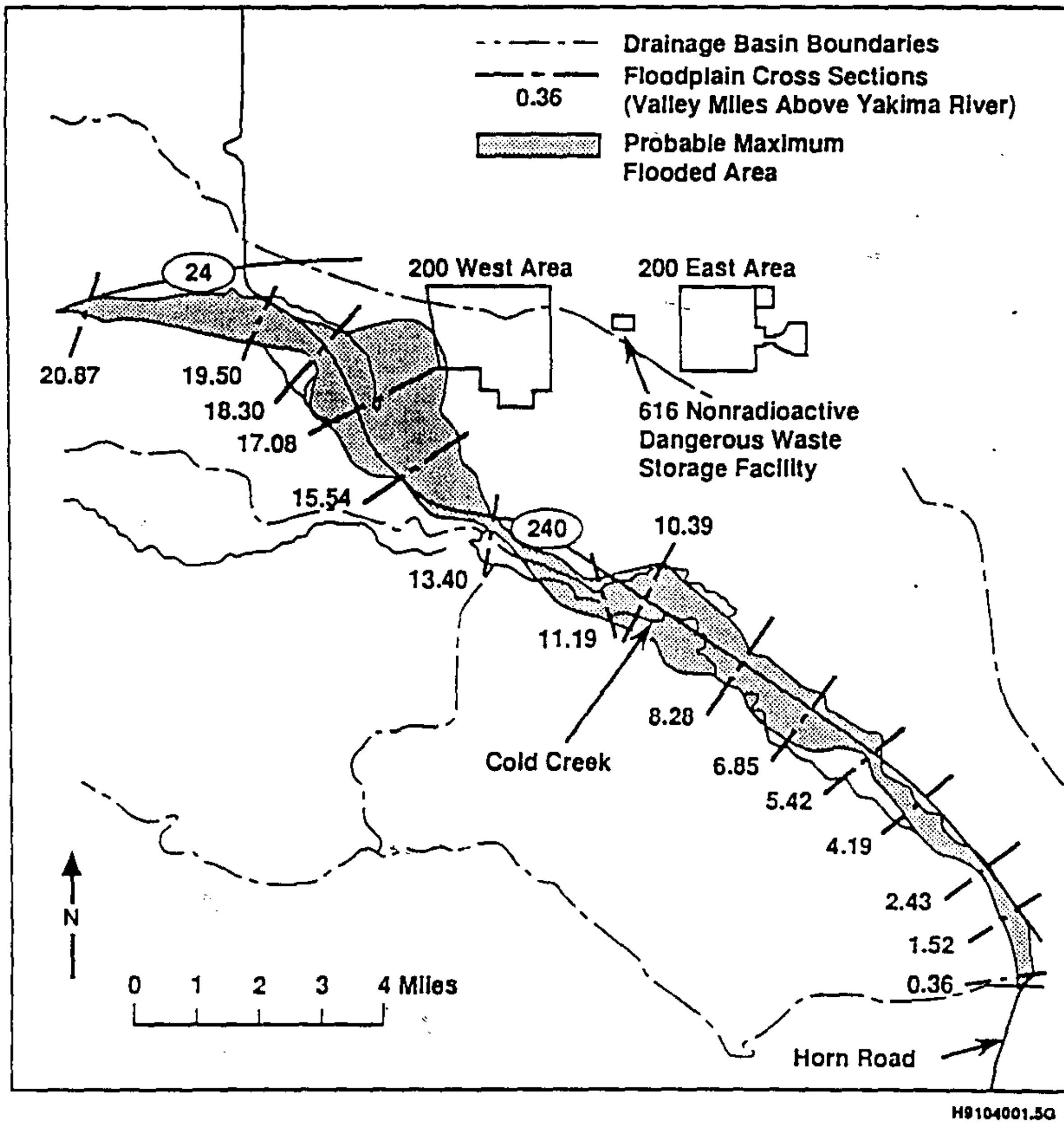

1 Figure 2-9. Cold Creek Watershed Floodplain (probable maximum flood).

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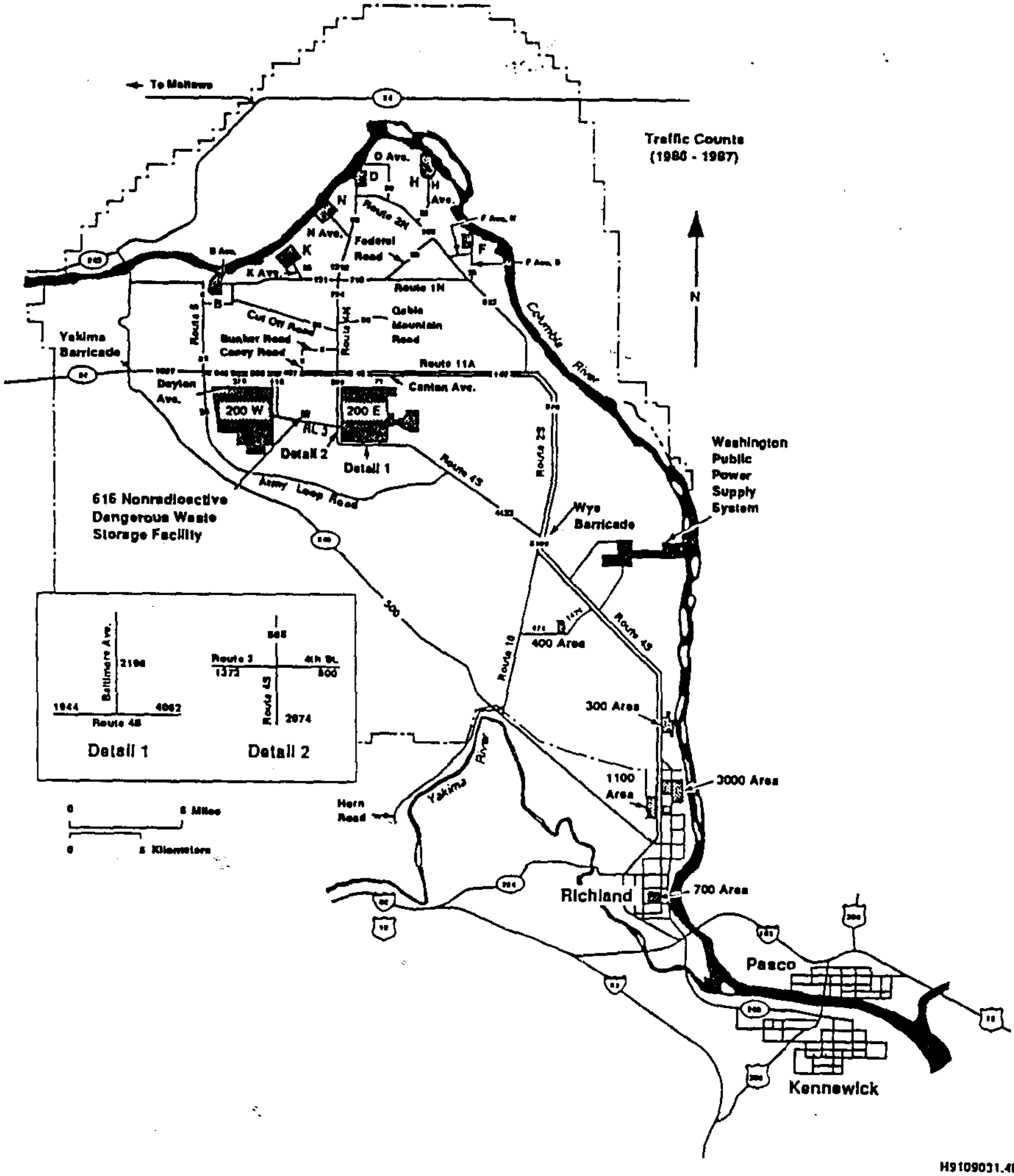

1 Figure 2-10. Estimated Traffic Volumes (vehicles per day).

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OCCURRENCE REPORT

Facility/Personnel Information

1. OCCURRENCE REPORT NUMBER:

2. REPORT TYPE AND DATE: DATE TIME

[] Notification Report
[] 10-Day Report
[] Latest 10 Day Update
[] Final

(Name of Facility)

Balance of Plant
(Facility Function Involved)

(Name of Laboratory Site or Organization)

(Facility Manager/Designee) (Org. Code)

(Job Title) (Phone No.)

(Originator) (Title)

(Organization) (Phone No.)

3. OCCURRENCE CATEGORY: []

4. CONTRACTOR DIVISION OR PROJECT: []

5. DOE PROGRAM OFFICE: []

6. SYSTEM, BLDG., OR EQUIPMENT: 7. UNCI:8. PLANT AREA

Figure 2-11. Typical Occurrence Report. (sheet 1 of 4)

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9. DATE AND TIME DISCOVERED:

10. DATE AND TIME CATEGORIZED:

	DATE	TIME	PERSON NOTIFIED	ORG.
11. DOE-HQ NOTIFICATIONS:				
12. OTHER NOTIFICATIONS:				

13. SUBJECT OR TITLE OF OCCURRENCE:

14. NATURE OF OCCURRENCE: []

15. DESCRIPTION OF OCCURRENCE:

16. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:

17. ACTIVITY CATEGORY: []

18. IMMEDIATE ACTIONS TAKEN AND RESULTS:

END OF NOTIFICATION REPORT

19. DIRECT CAUSE: []
20. CONTRIBUTING CAUSE(S): []
21. ROOT CAUSE: []

22. DESCRIPTION OF CAUSE:

23. EVALUATION: (By Facility Manager/Designee)

Figure 2-11. Typical Occurrence Report. (sheet 2 of 4)

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24. IS FURTHER EVALUATION REQUIRED? [] Yes [] No
IF YES, BEFORE FURTHER OPERATION? [] Yes [] No
BY WHOM:
BY WHEN:

25. CORRECTIVE ACTIONS:

TARGET COMPLETION DATE: COMPLETION DATE:

26. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH:

27. PROGRAMMATIC IMPACT:

28. IMPACT UPON CODES AND STANDARDS:

29. FINAL EVALUATIONS AND LESSONS LEARNED:

30. SIMILAR OCCURRENCE REPORT NUMBERS:

31. DOE FACILITY REPRESENTATIVE INPUT:

32. DOE FACILITY REPRESENTATIVE NAME AND POSITION:

APPROVED BY: ______________________________

Balance of Plant Facility Manager Signature Approval required for all 10-Day and 10-Day Update Reports.

Figure 2-11. Typical Occurrence Report. (sheet 3 of 4)

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OCCURRENCE REPORT NUMBER:

OCCURRENCE REPORT TYPE:

OCCURRENCE REPORT DATE:

---

33. QUEST SUBJECT CODE:

---

34. QUEST CONTRIBUTING FACTOR CODE:

---

35. QUEST ROOT CAUSE CODE:

---

36. PRIORITY/SEVERITY CATEGORY:

---

37. FACILITY MANAGERS ORGANIZATION CODE:

---

38. SIGNATURES:

Approved by: ______________________ Date: __________
Facility Manager

Reviewed by: ______________________ Date: __________
Impacted Oversight Organization

Reviewed by: ______________________ Date: __________
Impacted Oversight Organization

Reviewed by: ______________________ Date: __________
Impacted Oversight Organization

Reviewed by: ______________________ Date: __________
ADC/UCNI

Figure 2-11. Typical Occurrence Report. (sheet 4 of 4)

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ATTACHMENT 8

CHAPTER 3.0

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CONTENTS

APPENDIX

FIGURES

TABLES

3.0 WASTE CHARACTERISTICS [C]

This chapter provides information on the physical, chemical, and biological characteristics of the waste stored at the 616 NRDWSF. A waste analysis plan is included that describes the methodology used for determining waste types.

3.1 CHEMICAL, BIOLOGICAL, AND PHYSICAL ANALYSIS [C-1]

[Amendment III.1.B.nn.]
The 616 NRDWSF stores nonradioactive dangerous waste that is received from generating units located on the contiguous Hanford Facility and from DOE-RL owned and operated generators located on noncontiguous areas near the Hanford Facility (e.g., Federal Building and the 712 Building in downtown Richland and the 3000 Area). This waste is stored in the 616 NRDWSF until it is transported to an offsite TSD Facility. Waste normally is received in U.S. Department of Transportation 5-, 30-, and 55-gallon (18.9-, 113.6-, and 208-liter) containers, but also can be received in other U.S. Department of Transportation-approved containers such as wooden or fiberboard boxes (Table 3-1). No waste is accepted at the 616 NRDWSF in bulk loads (e.g., tank trucks, dump trucks, etc).

The 616 NRDWSF receives nonradioactive dangerous waste from **[Amendment III.1.B.oo.]** DOE-RL owned and operated processing, testing, maintenance, and construction activities. **[Amendment III.1.B.pp.]** The DOE-RL and **[Amendment III.1.B.qq.]** Hanford Site contractors have implemented control procedures to ensure that proper waste identification, packaging, and Ecology designation are attained (Section 3.2). Figure 3-1 illustrates the process for handling containerized nonradioactive dangerous waste. **[Amendment III.1.B.gg.]** Chemical, biological, and physical analyses of the dangerous waste to be handled at 616 NRDWSF pursuant to WAC 173-303-806(4)(a), entitled "616 Nonradioactive Dangerous Waste Facility Off-Site Shipping Lists," is found in Attachment 9 of the RCRA Permit.

Most of the nonradioactive dangerous waste received at the 616 NRDWSF consists of old (outdated) pure chemical products, spent dangerous waste sources, product mixtures in small laboratory quantities, and empty dangerous waste drums (WAC 173-303-160). Some waste regulated under the *Toxic Substances Control Act of 1976* (polychlorinated biphenyl) is received and stored at the 616 NRDWSF. Any waste listed in WAC 173-303-9903, or any dangerous waste mixture (WAC 173-303-084), or characteristic waste (WAC 173-303-090), could be generated on the Hanford Site. Waste normally can be characterized into 'U', 'P', 'F', 'D', 'WP', 'WC', or 'WT' Ecology waste code designations by the use of manufacturers' product information, material safety data sheets, laboratory analysis, and such references as 40 CFR 302.4, *Dangerous Properties of Industrial Materials* (Sax 1984), *Registry of Toxic Effects of Chemical Substances* (NIOSH 1986), and *The Condensed Chemical Dictionary* (Sax and Lewis 1987). Waste also is characterized in accordance with the requirements of 40 CFR 261 and 40 CFR 761.

It is the responsibility of the generating units to completely and correctly identify the dangerous constituents of their waste. Based on waste identification information provided by the generating unit's waste coordinator, the ~~Solid Waste Engineering~~ solid waste management staff designates the waste in accordance with WAC 173-303-070. The ~~Solid Waste Engineering~~ solid waste management staff maintains auditable copies of the following for each waste stored at the 616 NRDWSF, as applicable:

- All records providing a description of the waste
- Documentation identifying the dangerous characteristics of the waste
- The basis for waste designation
- Laboratory reports with chemical, biological, and physical analysis of samples

[Amendment III.1.B.rr.]

- Waste tracking forms/or Uniform Hazardous Waste Manifest.
- For wastes shipped to offsite TSD facilities, land ~~Land~~ disposal restriction documentation (Chapter 12.0, Section 12.4.2.2.7).

The generating unit and the 616 NRDWSF maintain copies of the ~~onsite~~ waste tracking forms/or Uniform Hazardous Waste Manifest and associated documents [i.e., hazardous waste disposal analysis record (Section 3.2)] identifying the waste characteristics and assigned waste designations.

In general, each package is unique and new containers continuously are being accepted for storage. In 1990, the 616 NRDWSF received 1,932 containers in 94 shipments, an average shipment being 20 containers every 4 to 5 days. The 616 NRDWSF accepts waste for storage with the waste codes identified in Table 3-2, excluding explosive, shock-sensitive (Section 4.1.4.1), class IV oxidizer [in waste volumes greater than 10 pounds (4.5 kilograms)] and radioactive waste. The 616 NRDWSF also can store containerized *Toxic Substances Control Act* regulated waste.

Nonradioactive dangerous waste is shipped to an appropriate permitted TSD facility. The waste is designated according to Ecology regulations for waste designation outlined in WAC 173-303-070.

3.1.1 Containerized Waste [C-1a]

The 616 NRDWSF does use a secondary containment system (Chapter 4.0, Section 4.1.1.3). Therefore, the requirements of WAC 173-303-630(7)(c) are not applicable to the 616 NRDWSF.

3.1.2 Waste in Tank Systems [C-1b]

Operation of the 616 NRDWSF does not involve the storage of dangerous waste in tank systems. Therefore, the requirements of WAC 173-303-640 are not applicable to the 616 NRDWSF.

3.1.3 Waste in Piles [C-1c]

Operation of the 616 NRDWSF does not involve the placement of dangerous waste in piles. Therefore, the requirements of WAC 173-303-660 are not applicable to the 616 NRDWSF.

3.1.4 Landfilled Wastes [C-1d]

Operation of the 616 NRDWSF does not involve the placement of dangerous waste in landfills. Therefore, the requirements of WAC 173-303-665 are not applicable to the 616 NRDWSF.

3.1.5 Wastes Incinerated and Wastes Used in Performance Tests [C-1e]

Operation of the 616 NRDWSF does not involve the incineration of dangerous waste. Therefore, the requirements of WAC 173-303-670 are not applicable to the 616 NRDWSF.

3.1.6 Wastes to be Land Treated [C-1f]

Operation of the 616 NRDWSF does not involve the land treatment of dangerous waste. Therefore, the requirements of WAC 173-303-655 are not applicable to the 616 NRDWSF.

3.2 WASTE ANALYSIS PLAN [C-2]

[Amendment III.1.B.ss.]

Each onsite generating unit (or group of generating units) has an individual (called the waste coordinator) in charge of waste handling. The waste coordinator is trained ~~by Solid Waste Engineering~~ in the following areas:

- Waste management
- Sampling practices
- Waste identification
- Waste segregation
- Packaging, labeling, and marking

[Amendment III.1.B.tt.]

- Waste tracking form requirements
- Transport
- Waste minimization.

The waste coordinator is responsible for correctly and completely identifying the dangerous constituents of the generating unit's waste and packaging the waste in accordance with 49 CFR 173. The waste coordinator is responsible for the proper management of the waste from the generating unit. The ~~Solid Waste Engineering~~ solid waste management staff oversees the activities of waste coordinators.

Before ~~shipment~~ transfer of nonradioactive dangerous waste from a~~n onsite~~ generating unit to the 616 NRDWSF, the waste coordinator secures the waste in a controlled, less than 90-day storage area, satellite accumulation area, CERCLA cleanup site, or expedited response action site. The waste coordinator identifies the waste from accumulation records and/or product label information. The waste coordinator assembles the waste information, which consists of associated sample analysis records and/or manufacturer's data (material safety data sheets) (Sections 3.2.2 and 3.2.4). Material recovered from a nonpermitted leak or spill is characterized by identifying the source. If the source cannot be found or additional unknown waste is suspected, the material is completely analyzed using a methodology presented in Section 3.2.2. Actions to be taken in response to a spill or discharge are detailed in Appendix 7A.

The waste coordinator prepares a waste storage/disposal request and attaches all necessary information in preparation for waste designation (in accordance with WAC 173-303-070). The waste storage/disposal request is sent to ~~Solid Waste Engineering~~ solid waste management where trained designators perform a waste designation.

Figure 3-2 describes the control procedures established by ~~Solid Waste Engineering~~ solid waste management for ensuring that waste is designated properly. Based on waste identification information provided by the waste coordinator, the ~~Solid Waste Engineering~~ solid waste management staff designates the waste in accordance with WAC 173-303-070. The designation process also includes determining if the waste is subject to a land disposal restriction as required by 40 CFR 268. Figure 3-3 presents a worksheet used by the ~~Solid Waste Engineering~~ solid waste management staff to perform the waste designation. If the information supplied by the generating unit's waste coordinator is insufficient or the designator suspects the information is incorrect, the waste coordinator is requested to supply additional information. This information can include sample analysis reports (Section 3.2.4) or additional information from the manufacturer.

After the designation is complete, a peer review is conducted. In the peer review, another trained designator reviews and verifies the designation. ~~The manager of~~ Solid waste management ~~Waste Engineering Analysis (a group within Solid Waste Engineering)~~ performs the final review and approves the designation. If a waste is suspected of being improperly identified, verification sampling of the responsible generating unit's waste will be required as detailed in Section 3.2.4.

The ~~Solid Waste Engineering~~ solid waste management staff makes a final evaluation of waste disposition only after waste characterization is complete and the proper waste designation is made. On completion of the above evaluation, a hazardous waste disposal analysis record is prepared by the ~~Solid Waste Engineering~~ solid waste management staff. This letter identifies which materials are regulated and which materials are not regulated. The hazardous waste disposal analysis record provides the following information:

- The appropriate waste designation per WAC 173-303-070
- Land ban disposal restrictions per 40 CFR 268
- Packaging, marking, and labeling instructions

[Amendment III.1.B.uu.]

- Waste tracking requirements
- Compatibility groups (Figure 3-4)
- Transport contact
- Treatment, storage, and/or disposal unit contact
- Identification of a proper storage cell at the 616 NRDWSF.

The hazardous waste disposal analysis record is sent by the ~~Solid Waste Engineering~~ solid waste management staff to the generating unit, the 616 NRDWSF~~, Solid Waste Disposal Unit,~~ and ~~Transportation Logistics~~ transportation personnel. The waste coordinator packages the nonradioactive waste and applies appropriate markings and labels in accordance with the hazardous waste disposal analysis record.

The waste coordinator prepares the waste and associated documentation (e.g., ~~onsite~~ waste tracking forms) according to the hazardous waste disposal analysis record. Before transport, a ~~Transportation Logistics~~ transportation representative reviews the ~~onsite~~ waste tracking forms and each waste package against the hazardous waste disposal analysis record to ensure U.S. Department of Transportation requirements are met. The representative also checks the condition, marking, and labeling of the packages. If discrepancies or deficiencies are found, these are corrected by the waste coordinator before receiving approval for shipment to the 616 NRDWSF. The ~~Transportation Logistics~~ transportation representative initials the ~~onsite~~ waste tracking form indicating the load is acceptable for transportation to the 616 NRDWSF.

~~The Radiation Exempt Facility List (Appendix 3A) identifies those areas that the Health Physics organization has verified to be free of radiological contamination. If an area is used for the handling or storage of radioactive material, the area is removed from the list. If Health Physics can verify that an area has contained no radiologically contaminated materials, the area can be added to the Radiation Exempt Facility List. A generating unit can be relieved of radiation survey requirements for waste submitted to the 616 NRDWSF if the area the waste originated from is listed on the Appendix 3A list.~~

All wastes received at the 616 NRDWSF must be free from any radionuclides generated as the result of DOE-RL operations. The generating unit is required to submit a certification that the waste contains no radionuclides before transferring the waste to the 616 NRDWSF. ~~Waste from areas not listed on the Appendix 3A list is required to be surveyed and unconditionally released within 24 hours of the receiving time at the 616 NRDWSF.~~ The 616 NRDWSF personnel do not accept waste without the proper radiation release documentation.

The transporter ensures the waste packages are marked and labeled as indicated by the hazardous waste disposal analysis record and the **[Amendment III.1.B.vv.]** waste tracking form/Uniform Hazardous Waste Manifest is complete. The transporter verifies that a ~~Transportation Logistics~~ transportation representative has initialed the ~~onsite~~ waste tracking form/Uniform Hazardous Waste Manifest, checks the condition of the package, and verifies that each container bears a valid radiological release (or that one release covers a set of containers). The transporter loads the vehicle, the waste coordinator signs for the generating unit, and the transporter signs the ~~onsite~~ waste tracking form/Uniform Hazardous Waste Manifest. ~~Solid Waste Disposal Unit personnel~~ Transporters transport the nonradioactive dangerous waste from the generating unit to the 616 NRDWSF.

At the 616 NRDWSF, nuclear operators check the ~~onsite~~ waste tracking form/Uniform Hazardous Waste Manifest against the hazardous waste disposal analysis record to verify that the ~~onsite~~ waste tracking form/Uniform Hazardous Waste Manifest is correct, that the ~~Transportation Logistics~~ transportation representative's initials and the waste coordinator's and the transporter's signatures are present. Nuclear operators check the condition of the marking, labeling, and the presence of a valid radiological release on each waste package. If the load is accepted, the packages are removed from the vehicle and the packages are stored in the 616 NRDWSF, as indicated on the hazardous waste disposal analysis record. If a discrepancy or deficiency is found, it is handled as detailed in Chapter 2.0, Section 2.8.2. After the load is accepted, the 616 NRDWSF ~~Solid Waste Operations Unit Supervisor~~ supervisor (or a delegate) signs the ~~onsite~~ waste tracking form/Uniform Hazardous Waste Manifest as the storage unit operator.

All dangerous waste shipped offsite from the 616 NRDWSF is subject to the verification sampling program of the receiving TSD facility as required by WAC 173-303-300(3).

3.2.1 Parameters and Rationale [C-2a]

[Amendment III.1.B.e.] The minimum parameters needed for waste designation and the rationale for their selection are presented in Sections 3.2.2 through 3.2.4 and 3.2.6. The goal of obtaining this information is to ensure that a proper and complete waste designation is made per WAC 173-303-080 through 103 and 40 CFR 264.13 before acceptance of waste at the 616 NRDWSF. The information also ensures that all hazards of the waste have been identified for the purposes of safe handling and proper waste disposition (including radiological screening). When possible, information on a material is taken from manufacturer information (e.g., material safety data sheets). If this information is not sufficient, analytical testing will be performed. Dangerous waste toxic mixtures (WT01 and WT02) of known chemical content will be designated according to toxicity calculations defined in WAC 173-303-084(5), which uses the National Institute for Occupational Safety and Health registry (NIOSH 1985).

3.2.2 Test Methods [C-2b]

[Amendment III.1.B.f.] ~~Prior to~~ Before acceptance of ~~wastes~~ waste at 616 NRDWSF, confirmation of designation ~~may~~ might be required by solid ~~Waste Engineering~~ waste management (Section 3.2.4). The ~~Wastes which~~ waste that shall undergo confirmation of designation ~~are~~ is identified in ~~Condition III.1.B.n. of this Permit~~ Section 3.2.4 and ~~may~~ can be divided into two groups; those that easily yield a representative sample (Category I), and those that do not (Category II). The steps for each type are outlined ~~below~~ in the following along with a description of which ~~wastes fall~~ waste falls into each category:

Category I. If a waste ~~which~~ that easily yields a representative sample is received, a representative sample will be taken of the waste. If more than one phase is present, each phase must be tested individually. The following field tests will be performed:

* Reactivity - HAZCAT™ oxidizer, cyanide, and sulfide tests. These tests will not be performed on materials known to be organic peroxides, ethers, and/or water reactive compounds.

* Flashpoint/explosivity - by HAZCAT™ flammability procedure ~~B~~, explosive atmosphere meter[1], or a closed cup flashpoint measurement instrument[1].

* pH - by pH meter[1] or pH paper (SW-846-9041).[2] This test will not be performed on non-aqueous materials.

* Halogenated organic compounds - by Chlor-D-Tect™ kits.

* Volatile organic compounds - by photo or flame ionization tester[1], by gas chromatography with or without mass spectrometry, or by melting point and/or boiling point determination.

[1]These instruments are field calibrated or checked for accuracy daily when in use.

[2]The pH paper must have a distinct color change every 0.5 pH unit and each batch of paper must be calibrated against certified pH buffers or by comparison with a pH meter calibrated with certified pH buffers.

If the waste meets the parameters specified in its documentation, within a 10% tolerance, confirmation of designation is complete. If it does not meet these parameters, sample and analyze the materials in accordance with WAC 173-303-110. ~~See~~ Refer to Table 3-4 for a list of analytical methodologies and Table 3-5 for sampling methodologies. This is considered a significant error under Section 3.2.4. Re-assess and ~~re-designate~~ redesignate the waste. Repackage and label as necessary or return to the generating unit.

When mathematically possible, the Permittees shall perform confirmation on an equal number of Category I and Category II containers.

Category II. If a representative sample is not easily obtained (for example, discarded machinery or shop rags) or if the waste is a labpack or discarded laboratory reagent container, the following steps will be performed:

a. Visually verify the waste. Labpacks and combination packages must be removed from the outer container. If the waste meets the parameters specified in its documentation, confirmation of designation is complete. If it does not meet these parameters, proceed to the next step. This is considered a significant error under Section 3.2.4.

b. If possible and necessary, segregate/repackage the waste for shipment in a compliant manner. If the waste is not packaged in compliance with shipping requirements, proceed to the next step.

c. The waste must be ~~re-designated~~ redesignated using designation methods identified in WAC 173-303-070 through 173-303-100.

In all instances, test methods must conform to those referenced in the *Chemical Testing Methods* (Ecology March 1982, revised July 1983), the American Society for Testing Materials (ASTM 1982), or the *Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods (SW-846)*. All test methods must conform to those referenced in WAC 173-303-110. **[Amendment III.1.B.g.]** Petitions to use an alternate test method shall be submitted in accordance with WAC 173-303-910.

[Amendment III.1.B.h.] All analytical tests performed to fulfill the requirements of Sections 3.2.4 and 4.1.1.8 (Frequency of Analysis and Removal of Liquids from Containment System, respectively) shall be performed in accordance with WAC 173-303-110. New test methods shall be used within 90 days of the effective date of the State regulations or laws that mandate the use of the test method. To ensure analytical quality control, all analyses must fulfill, at a minimum, the quality procedures specified in SW-846 Volume II.

3.2.3 Sampling Methods [C-2c]

Representative sampling can be requested by ~~Solid Waste Engineering~~ solid waste management to ensure proper waste identification, and the sampling will be performed under the direction of a waste coordinator at the point of generation.

The specific sampling methods and equipment vary with the chemical and physical nature of the waste material and the sampling circumstances. All sampling methods must conform to those referenced in WAC 173-303-110.

Sampling methods and equipment used for sampling different materials are presented in Table 3-5. For liquid waste in tanks or containers, a composite liquid waste sampler (COLIWASA) device, **[Amendment III.1.B.ww.]** suction pump, or tubing is used to obtain a vertical core section. **[Amendment III.1.B.i.]** The length of the liquid sampler device must be adequate to reach the bottom of the vessel, thus providing a representative sample of all phases of the waste. **[Amendment III.1.B.j.]** Sample analysis must be performed on each phase of the waste. For solid waste, either tubing or a scoop can be used, depending on the nature of the waste. For bulk solids, such as contaminated soil, representative samples are obtained with a trier or an auger. For contaminated containment structures, such as concrete or steel, samples are obtained using the EPA wipe sampling procedure (EPA 1987). **[Amendment III.1.B.k.]** Composite sampling is performed by obtaining representative samples in random locations. Should a maximum chemical contamination level be required, the location of the highest likely chemical contamination is chosen for sampling purposes.

All sampling equipment and sample containers are handled so that cross-contamination is minimized. For example, most sampling equipment consists of disposable units to prevent cross-contamination. Plastic materials (other than Teflon*) is not used for organic waste sampling. **[Amendment III.1.B.l.]** To ensure sample quality control, all sampling efforts must, at a minimum, be in accordance with the procedures specified in WAC 173-303-110. **[Amendment III.1.B.m.]** Appropriate packaging and preservation techniques and chain-of-custody requirements specified in SW-846 are used.

3.2.4 Frequency of Analysis [C-2d]

[Amendment III.1.B.n.] At least ~~five~~ 5 percent ~~(5%)~~ of the waste containers stored at 616 NRDWSF during a Federal fiscal year (October 1 through September 30) will undergo confirmation of designation pursuant to Sections 3.2.2 and 3.2.3 (Test Methods and Sampling Methods, respectively). The number of containers to meet the ~~five~~ 5 percent ~~(5%)~~ requirement is the average of containers for the previous three months. For example, if 200 containers are received in January, 180 in February, and 220 in March, ~~then~~ 10 containers of inbound waste must undergo confirmation of designation in April. All generating units ~~which~~ that ship more than ~~twenty (20)~~ 20 containers through 616 NRDWSF in a fiscal year will have at least ~~one (1)~~ 1 container sampled and analyzed. Containers for which there is insufficient process knowledge or analytical information to designate without sampling and analysis ~~may~~ might not be counted as part of the ~~five~~ 5 percent ~~(5%)~~ requirement unless there is additional confirmation of designation independent of the generator designation. The generating unit's staff shall not select the waste containers to be sampled and analyzed other than identifying containers for which insufficient information is available to designate.

Currently, there are no **[Amendment III.1.B.xx.]** generating units that generate a continuous, nonradioactive dangerous waste stream for which the

*Teflon is a trademark of E.I. DuPont de Nemours & Company, Incorporated.

chemical constituents and their concentrations are not readily known from knowledge of the raw materials. Each request for waste disposition is considered unique and is normally a one-time-only situation. The need for sampling and analysis of a particular waste is identified at the time the waste is generated or at the time a disposal request is received by the ~~Solid Waste Engineering~~ solid waste management staff. Should a continuous, nonradioactive dangerous waste stream be identified, an initial laboratory analysis is made (if necessary) with periodic analysis repeated at least annually and whenever the process used or raw materials usage changes.

[Amendment III.1.B.o.] For ~~wastes~~ waste without known process knowledge, samples of ~~non-radioactive~~ nonradioactive waste streams must be documented to have been sent to a laboratory for waste analysis when newly identified or whenever the process used or raw materials usage changes, and at least annually thereafter, to ensure that the waste designation assigned by the ~~Waste Management~~ solid waste management staff (Section 3.2) is accurate and in compliance with land ban restrictions. This verification analysis does not eliminate the need for the offsite TSD facility to perform verification sampling as required by WAC 173-303-300(3).

If a waste is determined to be improperly designated because of a significant error in information provided by the waste coordinator, verification sampling of the responsible generating unit's waste stream(s) will be required. **[Amendment III.1.B.p.]** For the next six shipments or ~~two~~ 2 months, whichever is longer, to 616 NRDWSF following the discovery of an incorrect designation, the responsible waste coordinator will be required to submit laboratory verification results for each waste stream that is addressed in a waste storage/disposal request (Section 3.2). **[Amendment III.1.B.q.]** The laboratory verification results shall be obtained in accordance with WAC 173-303-110 or Section 3.2.2 of this permit.

3.2.5 Additional Requirements for Wastes Generated Offsite [C-2e]

[Amendment III.1.B.yy.]

All waste received at the 616 NRDWSF, as described in Section 3.1, is subject to the confirmation of designation sampling requirements described in Section 3.2. Each shipment of waste received at the 616 NRDWSF must be accompanied by accurate and complete waste tracking forms for waste received from onsite sources and uniform hazardous waste manifests for waste received from offsite sources.

3.2.6 Additional Requirements for Ignitable, Reactive, or Incompatible Wastes [C-2f]

Based on the hazard characteristics identified by the waste coordinator, specific packaging instructions are provided by the ~~Solid Waste Engineering~~ solid waste management staff. Instructions taken into consideration are the ignitability, reactivity, and potential incompatibilities of the waste stream.

Instructions are in compliance with U.S. Department of Transportation regulations at all times. If multiple waste types are to be placed in a single container (e.g., labpacks), compatibility analyses are performed and potentially incompatible waste is packaged in separate containers. In no case is waste of differing hazard classes packaged together. Dangerous waste is packaged in a compatible labpack and stored at the 616 NRDWSF before transport to an offsite TSD facility. Dangerous waste is not placed in an unwashed container that previously held an incompatible waste or material. A mixture of extremely hazardous waste and dangerous waste always will be designated as extremely hazardous waste. Various references are used to determine potential incompatibilities. Figure 3-4 presents a compatibility chart used, in conjunction with their associated tests, for this purpose.

Infrequently, the ~~Solid Waste Engineering~~ solid waste management staff is alerted to the existence of shock-sensitive or peroxide-forming chemicals that could present a serious explosive hazard. Examples are laboratory quantities of unstable 'dry' picric acid or outdated ethyl ether. These chemicals are not allowed at the 616 NRDWSF. The location of the chemical is noted and the risk to personnel and structures determined. ~~A bomb disposal squad ultimately is used to detonate these chemicals.~~

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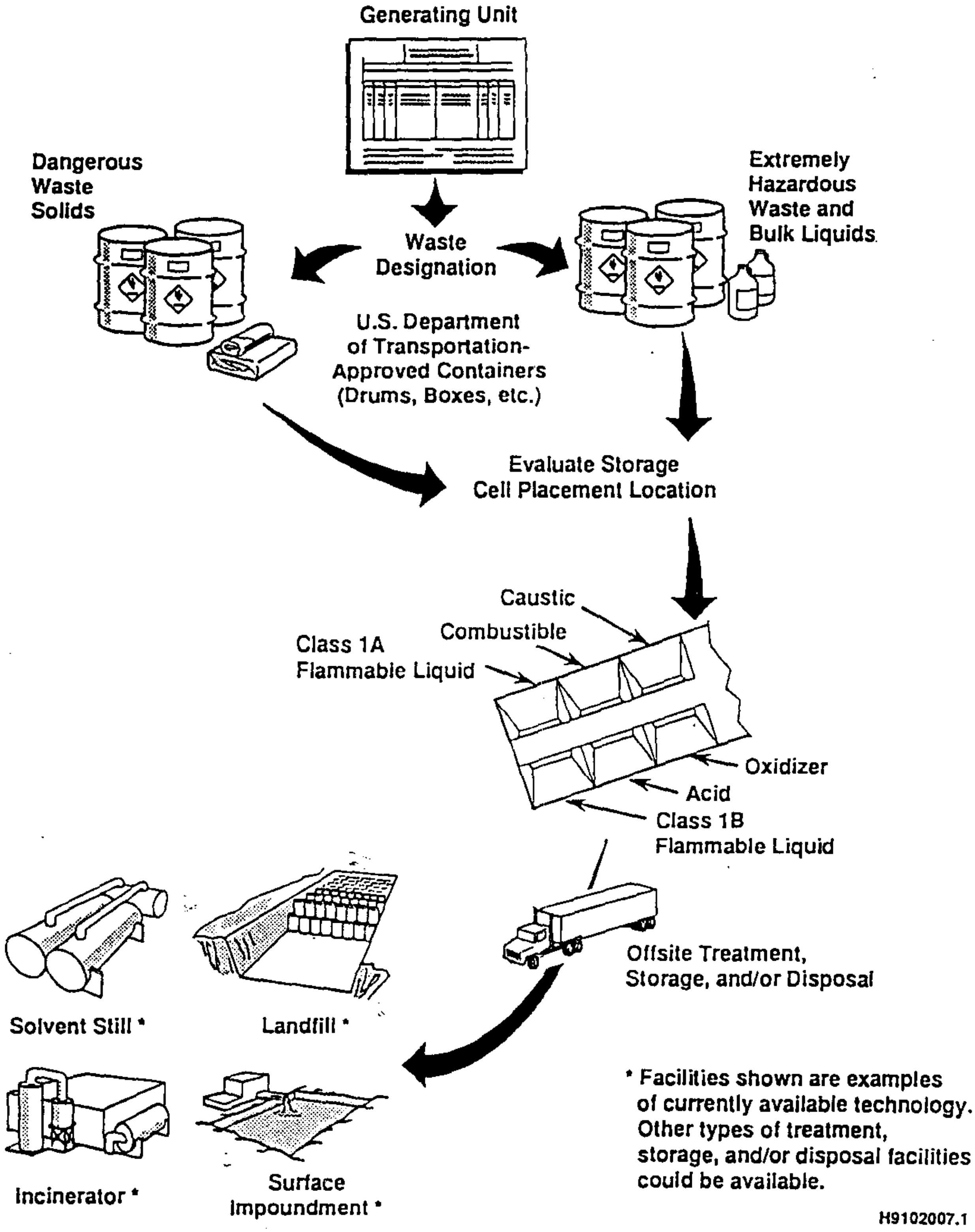

1 Figure 3-1. Decision Process for Handling Dangerous Waste.

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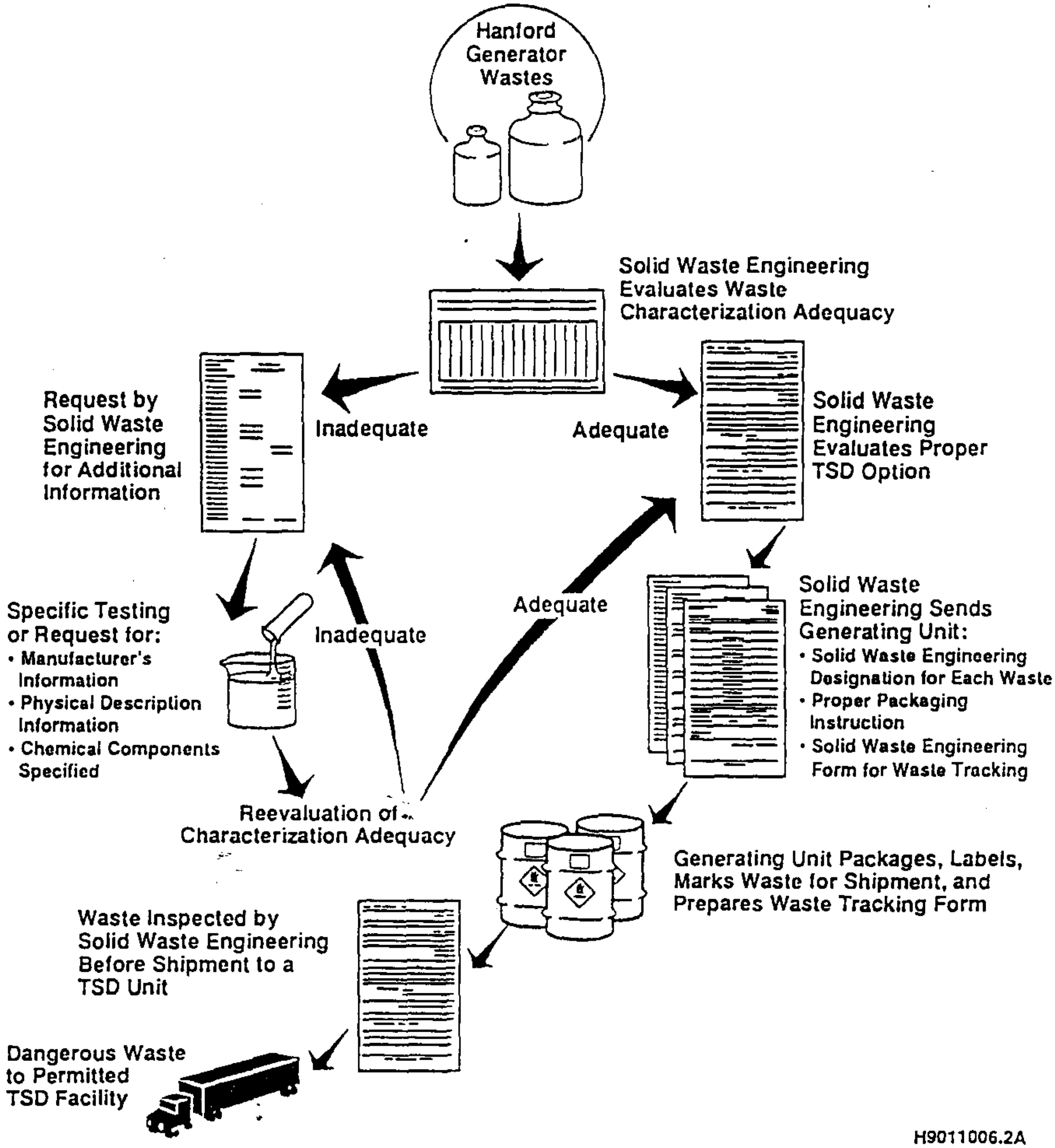

1 Figure 3-2. Waste Control Procedure Description.

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SOLID WASTE DESIGNATION WORKSHEET

DESCRIPTION OF WASTE						
WSDR #		Container Quantity and Type				
Item #		Solid Phase †	☐	Density †	Waste Status	
MSDS #		Liquid Phase	☐	pH	Designator	
Weight, kg		Gas Phase	☐	FP (°F)	Desig. Date	

† For solid & liquid substances & mixtures of substances, the numerical values of mass density & specific gravity for any given sample of matter are equal to one another.

CHEMICAL COMPOSITION OF WASTE	ECOLOGY TOX. CATEGORY	WEIGHT % (w/o)	‡ (Σ w/o i) ∀ i, i = X,A,B,C,D	REFERENCE (RTECS, etc.)

‡ Equivalent Concentration (EC%) $= \sum w/o\ X + \frac{\sum w/o\ A}{10} + \frac{\sum w/o\ B}{100} + \frac{\sum w/o\ C}{1{,}000} + \frac{\sum w/o\ D}{10{,}000} =$ | EC% =

* HAZARDOUS WASTE CATEGORY	GUIDING DOCUMENTS	REG? Yes No	WASTE CLASS DW/EHW/AHW	HAZARDOUS WASTE CODES	LDR? Yes No
DANGEROUS WASTE SOURCE Used: Possibly one of: F-, K-, & W001	40 CFR 261.31 & 261.32 WAC 173-303-082 & WAC 173-303-9904 List	☐ ☐			☐ ☐
DISCARDED CHEMICAL PRODUCT Unused & Sole active ingredient: P & U	40 CFR 261.33 WAC 173-303-081 & WAC 173-303-9903 List	☐ ☐			☐ ☐
CHARACTERISTIC OF IGNITABILITY Flashpoint < 140°F and/or oxidizer: D001	40 CFR 261.21 49 CFR 173.115 - 127 WAC 173-303-090 (5)	☐ ☐			☐ ☐
CHARACTERISTIC OF CORROSIVITY pH ≤ 2 or pH ≥ 12.5: D002	40 CFR 261.22 49 CFR 173.136 WAC 173-303-090 (6)	☐ ☐			☐ ☐
CHARACTERISTIC OF REACTIVITY Water-reactive, explosive, etc.: D003	40 CFR 261.23 WAC 173-303-090 (7) (No 49 CFR reference)	☐ ☐			☐ ☐
TOXICITY CHARACTERISTIC (TC) Unlisted Hazardous Waste: D004 - D043	40 CFR 261.24 WAC 173-303-090 (8) (Use LAB WORKSHEET)	☐ ☐			☐ ☐
TOXICITY CRITERIA Total EC% ≥ 0.001; see 9906 Graph to determine if WT02-DW or WT01-EHW	WAC 173-303-100 (5) & 173-303-9906 Graph; Total EC% from table above (Consult RTECS)	☐ ☐			☐ ☐
PERSISTENCE CRITERIA HH ≥ 0.01%, WP02-DW or HH ≥ 1%, WP01-EHW; PAH ≥ 1%, WP03-EHW	WAC 173-303-100 (6) & 173-303-9907 Graph; (No DW for PAH)	☐ ☐			☐ ☐
CARCINOGENIC CRITERIA ≥ 0.01% single carcinogen, WC02-DW or ≥ 1.0 % total carcinogens, WC02-DW	WAC 173-303-100 (7) (No EHW for carcinogens) (Read ECOLOGY letter(s))	☐ ☐			☐ ☐
PCB WASTE Possibly one of: W001, PCB1, or PCB2	40 CFR 761 (TSCA) WAC 173-303-9904 List (Use PCB FLOWSHEET)	☐ ☐			☐ ☐

* NOTE: The SOLID WASTE DESIGNATION WORKSHEET is intended to be used with the SOLID WASTE DESIGNATION FLOWSHEET.

PROPER SHIPPING NAME					
Waste Class		Waste Codes			
Hazard Class		Hazard Labels			
DOT ID #		Ship To			
Packaging		Storage Cell		Land Ban Codes	

1 Figure 3-3. Typical Treatment, Storage, and/or Disposal Worksheet.

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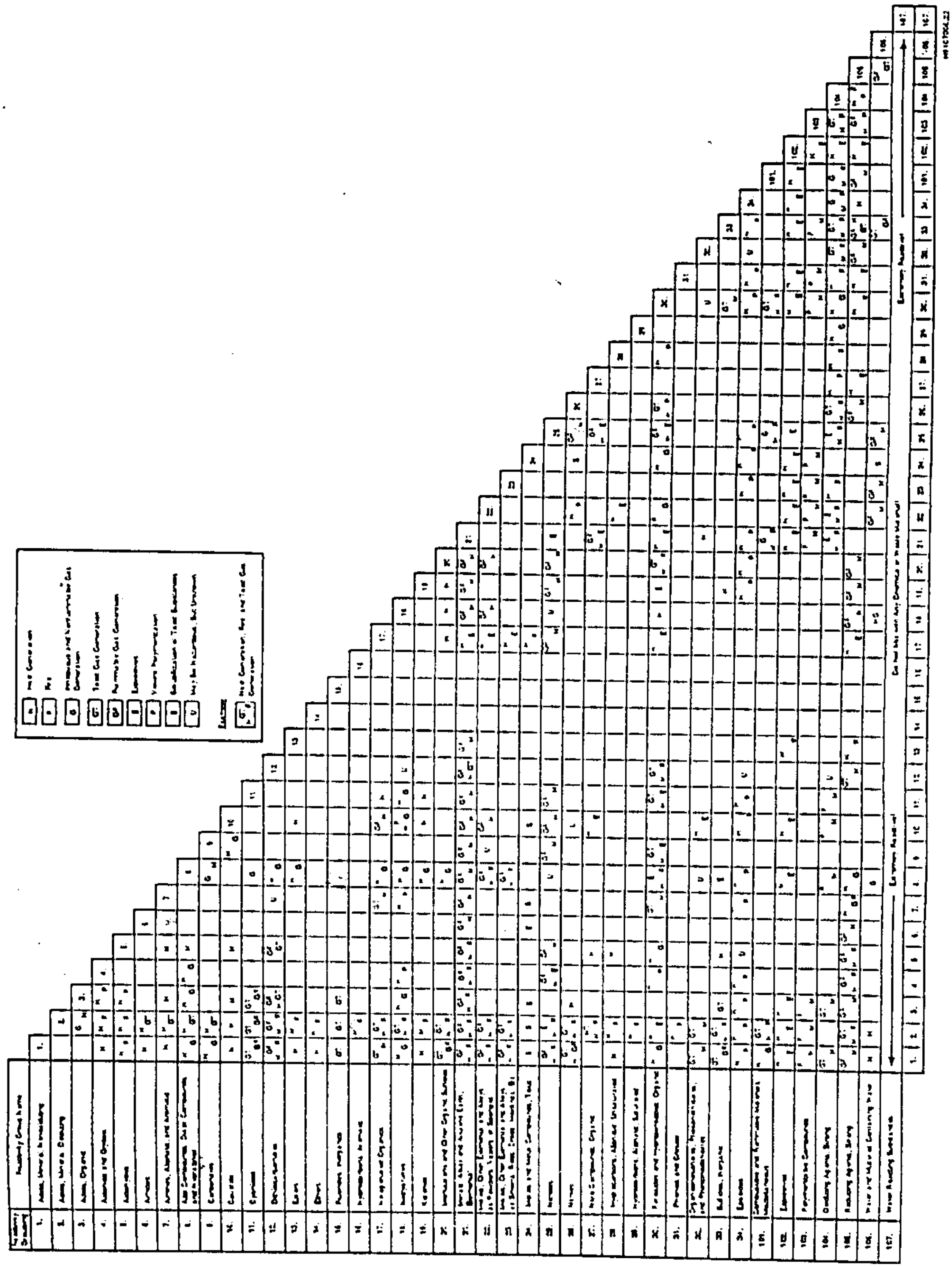

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Figure 3-4. Compatibility Chart.

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Table 3-1. Common Containers Stored at the 616 Nonradioactive Dangerous Waste Storage Facility.

DOT[a] Spec.	Container	Material	Ref.[b] (49 CFR 178)
12P/12U (UN6HG2)	CF[c] w/inner poly liner	Fiberboard/polyethylene	178.~~211/178.24~~ 522
12B (UN4G1)	CF	Fiberboard	178.~~205~~516
17C (UN1A1)	DM[d]	Low carbon steel	178.~~115~~504
17E (UN1A1)	DM	Low carbon steel	178.~~116~~504
17H (UN1A2)	DM	Low carbon steel	178.~~118~~504
34 (UN1A1)	DF[e]	Polyethylene	178.~~19~~509
37A (UN1A1)	DM	Low carbon steel	178.~~131~~504
37B (UN1A1)	DM	Low carbon steel	178.~~132~~504

[a]U.S. Department of Transportation specifications.
[b]Reference section of regulations.
[c]CF = fiberboard box.
[d]DM = drum, metal.
[e]DF = drum, fiberboard.

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Table 3-2. Waste Codes of Materials Stored at the 616 Nonradioactive Dangerous Waste Storage Facility.

Waste codes	Reference
U and P numbers	WAC-173-303-9903
F numbers	WAC-173-303-9904
W001	WAC-173-303-9904
D001	WAC-173-303-090(5)
D002	WAC-173-303-090(6)
D003	WAC-173-303-090(7)
D004 through D043	WAC-173-303-090(8)
WT01 and WT02	WAC-173-303-101/104
WP01, WP02 and WP03	WAC-173-303-102/104
~~WC01 and~~ WC02	WAC-173-303-103/104
WL01 and WL02	WAC-173-303-180

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Table 3-3. Parameters and Rationale for Waste Designation. (sheet 1 of 2)

Analytical Parameter	Rationale for Selection
1. Radioactive screen	All waste suspected of being radioactively contaminated or located within a radioactive zone is screened for radioactivity before being released to nonradioactive areas for the purpose of safe handling and proper management of the hazard characteristic.
2. pH	To indicate the degree of corrosivity of the waste for safe handling and to establish a relatively simple indicator parameter for the purpose of verification.
3. Flash point	To determine conditions for ignitability of waste content for safe handling. Organic waste that is determined to be ignitable will be directed to incineration or to reuse or recycle options if possible. This test also will determine if waste is an Ecology-and/or U.S. Department of Transportation-regulated ignitable, flammable, or combustible substance.
4. Water reactivity	To determine whether the waste has a potential to violently react with water to form gases or generate heat for the purpose of safe handling and proper disposition. The need for waste treatment may be determined, should waste be considered water reactive.
5. Reactive cyanide/ reactive sulfide content	To determine if waste produces hydrogen cyanide or hydrogen sulfide on acidification below pH 2. A positive cyanide or sulfide screen would direct the waste to a treatment or incineration facility. This waste would not be landfilled. This information would not be required for waste with pH less than 6.
6. Chemical compatibility	An analysis of dangerous reaction potential with other waste types will be performed for the purpose of segregating waste types in the 616 NRDWSF.
7. Physical description	To determine the general physical characteristics of the waste (e.g., viscosity, color, texture, odor-free liquids) for comparison between generating unit-supplied information and verification by the Solid Waste Engineering staff.
8. Specific gravity	To establish a measurement for a parameter that effectively compares liquid waste characteristics against generating unit-supplied information.
9. PCB screen	To determine PCB content in oil-bearing waste for the purpose of managing this waste in accordance with regulations prescribed in the *Toxic Substance Control Act of 1976*.

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Table 3-3. Parameters and Rationale for Waste Designation. (sheet 2 of 2)

Analytical Parameter	Rationale for Selection
10. TCLP	A method used to determine whether a waste is a regulated toxic waste due to its toxicity characteristics.
11. Toxicity	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its toxic constituents as determined by the NIOSH Registry of Toxic Effects.
12. Halogenated hydrocarbons	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its halogenated hydrocarbon content.
13. Polycyclic aromatic hydrocarbons	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its polycyclic aromatic hydrocarbon content.
14. Carcinogenicity	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its carcinogenic chemical constituents as determined by the International Agency for Research on Cancer.
15. Biological testing	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its toxic constituents as determined by tests on biological systems.

Ecology = Washington State Department of Ecology
NIOSH = National Institute for Occupational Safety and Health
PCB = polychlorinated biphenyl
TCLP = toxicity characteristics leaching procedure

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Table 3-4. Analytical Methodologies.

Parameter	Methods*
Ignitability	*Chemical Testing Methods*, March 1982, revised July 1983
Corrosivity	*Chemical Testing Methods*, March 1982, revised July 1983, including the addendum *Test Method for Determining pH of Solutions in Contact with Solids*, March 1984
Reactivity	*Chemical Testing Methods*, March 1982, revised July 1983
Toxicity characteristics leaching procedure	*EPA Final Rule*, Federal Register, Volume 55, pages 11799 through 11877, March 1990
Halogenated hydrocarbons	*Chemical Testing Methods*, March 1982, revised July 1983
Polycyclic aromatic hydrocarbons	*Chemical Testing Methods*, March 1982, revised July 1983 and March 1984
Static acute fish toxicity test	*Biological Testing Methods*, July 1980
Acute oral rat toxicity test	*Biological Testing Methods*, July 1980
Free liquids (absence or presence)	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846* (most recent edition and all updates), Including "Method 9095" (Paint Filter Liquids Test)
Chlorinated dibenzo-p-dioxins and dibenzofurans	40 CFR 261, Appendix X
Polychlorinated biphenyls in transformer fluids and waste oils	EPA-600/4-81-045
Polychlorinated biphenyls in mineral insulating oils by gas chromatography	ASTM Standard D 4059-86

*WAC 173-303-110 - unless otherwise noted.
EPA = U.S. Environmental Protection Agency.
ASTM = American Society for Testing and Materials.

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Table 3-5. Sampling Methods and Equipment.

Material	Sampling method	Sampling equipment
Containerized liquids	SW-846	COLIWASA*, suction pump, or tubing
Extremely viscous liquid	ASTM D140-70	Tubing or trier
Crushed or powdered material	ASTM D364-75	Tubing, trier, auger, scoop, or shovel
Soil or rock-like material	ASTM D420-69	Tubing, trier, auger, scoop, or shovel
Soil-like material	ASTM D1452-65	Tubing, trier, auger, scoop, or shovel
Fly ash-like material	ASTM D2234-76	Tubing, trier, auger, scoop, or shovel
Containment systems	Wipe sampling (OSHA 1977)	Filter paper and cleaning solution

*COLIWASA = composite liquid waste sampler device.

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ATTACHMENT 8

CHAPTER 4.0

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CONTENTS

APPENDICES

FIGURE

TABLES

4.0 PROCESS INFORMATION [D]

This chapter discusses the processes used to store containers at the 616 NRDWSF.

4.1 CONTAINERS [D-1]

The following sections describe the type of containers stored at the 616 NRDWSF. The construction specification for this storage unit is provided in Appendix 4A.

4.1.1 Containers with Free Liquids [D-1a]

Containers with free liquid are discussed in the following sections.

4.1.1.1 Description of Containers [D-1a(1)]. The 616 NRDWSF only accepts waste properly packaged in U.S. Department of Transportation-approved containers. These containers are chosen in accordance with pertinent regulations and are approved for that waste. Table 4-1 lists the most common types of containers [and applicable U.S. Department of Transportation specifications (49 CFR 178)] stored at the 616 NRDWSF.

All containers stored at the 616 NRDWSF are in an acceptable condition for each waste type (Chapter 2.0, Section 2.8.1). Because no containers are reconditioned on the Hanford Facility, there are no reconditioned containers at the 616 NRDWSF.

All waste containers received at the 616 NRDWSF are marked and labeled in accordance with the requirements specified under U.S. Department of Transportation regulations (49 CFR 172). ~~Solid Waste Engineering specifies marking~~ Marking and labeling requirements are specified on the hazardous waste disposal analysis record (Chapter 3.0, Section 3.2). In addition to the U.S. Department of Transportation marking and labeling requirements, all waste containers are marked as follows:

- 'PERSISTENT' - If a WP01, WP02, or WP03 waste code is applicable
- 'TOXIC' - If a WT01 or WT02 waste code is applicable
- 'CARCINOGENIC' - If a WC01 or WC02 waste code is applicable.

4.1.1.2 Container Management Practices [D-1a(2)]. The 616 NRDWSF is designed with two different types of cells: regular storage and flammable liquid storage (Chapter 2.0, Figure 2-3). The details for each cell are provided in Table 4-2.

Before being accepted at the 616 NRDWSF for storage, each container is inspected (Chapter 2.0, Section 2.8.1) for the following:

- Container condition
- Container seal

- Proper marking and labeling
- Valid radiological release.

On being accepted for storage at the 616 NRDWSF, containers are unloaded in accordance with the requirements of Chapter 6.0, Section 6.4.1, and moved to the proper storage cell as described on the hazardous waste disposal analysis record (Chapter 3.0, Section 3.2). The containers are moved on drum dollies or by a pallet jack or by a forklift if pallatized (the forklift is prohibited from operating in the Class 1-A flammable liquid cell). The containers are placed in the assigned storage cell, with the containers being placed in one of the storage locations painted on the cell floor (Chapter 6.0, Figure 6-3 provides storage locations). The location of the container is logged on a locator chart and input into the 616 NRDWSF waste tracking system. This system identifies the location of each container stored in the 616 NRDWSF. Waste packages can be stacked in any storage cell. Table 4-3 identifies the stacking restrictions for each cell.

The containers can be stacked either by hand or machine (e.g., forklift). Containers stacked by hand are placed next to the containers on which the containers are to be stacked. The container is lifted and placed onto the base container, taking care not to damage either container. The 616 NRDWSF supervisor is responsible for ensuring that all lifts are done in accordance with applicable safety requirements. No personnel are allowed to lift a waste container in a manner that jeopardizes them or other personnel. As a guideline, hand stacking weight limits do not exceed 65 pounds (29.5 kilograms) per male employee and 45 pounds (20.4 kilograms) per female employee.

The lifting of containers having a gross weight that exceeds the weight limit identified for an individual can be stacked by two employees or by mechanical means. Containers having a gross weight exceeding 130 pounds (59.1 kilograms) must be stacked by mechanical means. Mechanically stacked containers must be placed on a pallet or similar dunnage to properly distribute the load to base containers. Containers stacked using pallets always will have four base containers of the same height under them.

Containers are closed during normal operations and are not handled or stored in a manner that might damage the packaging. The containers are inspected daily (when the storage unit is occupied) for degradation and leakage. Activities restricted to the office area do not require a daily inspection of the storage area, provided the ventilation system is fully operational. ~~Solid Waste Engineering performs a~~ A weekly ~~audit~~ inspection of the 616 NRDWSF and its waste inventory, regardless of occupation (Chapter 6.0, Section 6.2.1.2) is performed.

In preparation for shipment of waste from the 616 NRDWSF to an offsite TSD facility, ~~Solid Waste Engineering identifies~~ containers are identified for shipment from the 616 NRDWSF inventory tracking system. A completed offsite manifest and a list of waste proposed for shipment are transmitted to ~~Transportation Logistics~~ transportation personnel and a contracted offsite TSD facility for review. Review comments are dispositioned to the satisfaction of all parties. The 616 NRDWSF personnel mark the containers with the offsite manifest number~~ (provided by Solid Waste Engineering)~~. Solid ~~Waste Engineering~~ waste management prepares a letter that accompanies the waste shipment addressing the land disposal restriction; documentation requirements are identified in Chapter 12.0, Section 12.4.2.2.7.

Before shipment, each container is inspected and reviewed by ~~two Transportation Logistics~~ transportation representatives for proper designation, packaging, marking, and labeling. ~~Two representatives from Solid Waste Disposal perform an~~ An independent review of the shipping documentation (i.e., offsite manifest, product information sheets) is performed. ~~Both a Solid Waste Engineering representative~~ Solid waste management and the 616 NRDWSF ~~Supervisor~~ supervisor review each package before the package is loaded on the truck for offsite shipment.

4.1.1.3 Secondary Containment System Design and Operation [D-1a(3)]. The design of the secondary containment system is shown in Figure 4-1 and in Appendix 4B. Secondary containment consists of three main components. First, each cell consists of a sealed concrete pad, which is sloped to containment trenches. Second, there are three containment trenches between adjacent cells, one for each cell and one in the walkway between the cells. Third, each cell is surrounded by a curb for additional containment. This curb varies from 2 to 4 inches (5.1 to 10.2 centimeters) in height as the level of the cell floor varies.

4.1.1.4 Requirement for Base or Liner to Contain Liquids [D-1a(3)(a)]. The floor and trenches in the storage and container handling areas are constructed of reinforced concrete. Concrete was selected as a construction material because concrete is essentially inert and inhibits downward permeation of liquid caustic, oxidizing, combustible, and flammable materials. Additionally, the concrete floor surface has been sealed with Aquapon[1], a polyamide epoxy resin that, when cured, has properties similar to glass. Aquapon base finish coatings were selected because of the capability of the coatings to resist abrasion, extreme environmental conditions, and a wide variety of chemical exposures (Appendix 4D). The application of additional and/or alternate sealants was determined to be unnecessary because of the limited potential for adverse chemical exposure to the 616 NRDWSF storage areas.

The design of the floor in the storage and container handling areas consists of concrete slabs (seamless) sloped to dedicated collection trenches (Figure 4-1 and Appendix 4B). All interior trenches are self-contained (without drains). Each storage cell is surrounded by a curb varying in height from 2 to 4 inches (5.1 to 10.2 centimeters), which would provide additional containment in the event of a large spill.

If a crack that compromises the integrity of the concrete containment system of a storage cell is found, the crack is prepared, grouted, and sealed in accordance with the Project B-526 Construction Specification (Appendix 4A) and the repair material manufacturer's instructions. Significant cracks in

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[1]Aquapon is a trademark of PPG Industries, Inc.

the floor surface of the containment cells are repaired within 14 days of detection. Significant cracks in the storage cell containment trenches are repaired within 5 working days of detection. If crack repairs cannot be completed within the specified time periods, liquid waste storage in the affected areas is suspended until repairs are completed.

After repair completion, ~~the Solid Waste Operations supervisor and a Solid Waste Engineering representative inspect~~ the solid waste management organization inspects the repair to ensure acceptability~~. The supervisor and the Solid Waste Engineering representative sign the 616 NRDWSF logbook indicating~~ and indicates acceptance of the repair in the 616 NRDWSF logbook. The logbook is maintained for the life of the 616 NRDWSF.

4.1.1.5 Containment System Drainage [D-1a(3)(b)]. Each storage cell consists of a concrete slab sloped to a self-contained containment trench (Section 4.1.1.4).

4.1.1.6 Containment System Capacity [D-1a(3)(c)]. Each storage cell is designed to contain over 10 percent of the total volume of containers that can be stored there. Each cell is designed with a sloping floor that drains to a containment trench (Figure 4-1 and Appendix 4B). Table 4-4 lists the total containment volume and maximum container storage volume per cell. Calculations performed to verify containment capacity are detailed in Appendix 4C.

4.1.1.7 Control of Run-On/Run-Off [D-1a(3)(d)]. The only major run-on or run-off foreseen would be a flood, fire sprinkler activation, or a break in the water main. No floods are predicted to impact the 616 NRDWSF (Chapter 2.0, Section 2.3.2).

In the event of a run-on or run-off from any source (e.g., fire sprinkler activation, pipe break, etc.), containment systems in the 616 NRDWSF are capable of holding between 645 gallons (2,445 liters) and 926 gallons (3,510 liters) of liquid for each cell as cell width varies. Collected or contained liquid can be removed by hand pumps for large quantities and by absorbents for smaller quantities. All waste stored in the 616 NRDWSF is in sealed containers, which limits the detrimental impact of a run-on or run-off situation.

In the event that contaminated water is released from the 616 NRDWSF because of flooding of the containment system, fire sprinkler activation, or a pipe break (Section 4.1.1.8), the incident will be treated as a spill.

Actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A.

4.1.1.8 Removal of Liquids from Containment System [D-1a(3)(e)]. [Amendment III.1.B.s.] In the event of a spill or release at the 616 NRDWSF that results in collection of liquid waste material in the containment system, the following will be performed after determination by the Building Emergency Director (BED) that implementation of the Contingency Plan pursuant to Appendix 7A is not necessary or all necessary actions in accordance with the

Contingency Plan have been implemented. Either case must be recorded and signed in the TSD unit-specific operating record by the BED.

- Containers in the cell(s) affected by the spill will be inspected for signs of leakage. Leaking containers will be repackaged and identified in the 616 NRDWSF operating and spill logbooks.

- Inspection reports and the 616 NRDWSF operating and spill logbooks will be reviewed to identify any waste releases in the waste storage areas for which remedial actions have not been completed.

- The waste will be removed from the containment system. The equipment used for removal of large quantities of liquid normally would be a hand-held pump or vacuum system. Adsorbents will be used for removal of small amounts of liquid. The waste material will be placed in the appropriate U.S. Department of Transportation-specified container.

- The containerized waste will be handled as follows.

  - If the waste has been altered during stabilization and cleanup actions (absorbed, mixed, diluted, etc.), the containerized waste will be placed in storage and managed in accordance with the provisions of the waste analysis plan (Chapter 3.0, Section 3.2).

  - A waste storage/disposal request (Chapter 3.0, Section 3.2) will be submitted to ~~the Solid Waste Engineering staff~~ solid waste management for waste designation. In response, ~~the Solid Waste Engineering staff will issue a Waste Disposal Analysis Record~~ a waste disposal analysis record describing the regulatory status and proper packaging, labeling, and marking requirements for the waste (Chapter 3.0, Section 3.2) will be issued. **[Amendment III.1.B.u.]** The 616 NRDWSF staff will ensure that waste is properly packaged, labeled, marked, and stored.

  - The 616 NRDWSF inventory will be altered to reflect the changes in waste description, volume, and storage locations.

  - If the waste was not altered during stabilization and cleanup activities, the containerized waste will be placed in the appropriate storage area and the 616 NRDWSF inventory altered to reflect any changes.

- Wipe samples will be taken of the spill area in accordance with an approved procedure (EPA 1987) using Whatman[2] No. 42 filter paper or an equivalent. The filter paper used to collect the sample will be moistened with an appropriate collection medium based on the characteristics of the spilled material. **[Amendment III.1.B.v.]** **[Amendment III.1.B.w.]** All samples taken to verify that the site of a release is clean will be obtained in accordance with the applicable

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[2]Whatman is a trademark of Whatman Incorporated.

standards of Section 11.1.5. et seq. In the event that water would not be an appropriate collection medium to dissolve the contamination of concern, the solvent used by the laboratory for analysis will be used. The filter paper will be sent to a laboratory where the filter paper will be prepared and analyzed in accordance with the test methods identified in Chapter 3.0, Section 3.2.2, for constituents known to have been involved in the spill to verify cleanup adequacy.

An alternative sampling mechanism will be used for detection of waste matrices for which wipe sampling protocols are ineffective. Volatile organics will be detected using organic vapor air samplers. To detect the presence of corrosive liquids, pH paper and pH monitors will be used. The type of sampling technique used to determine the cleanliness of the contaminant will be documented in the spill logbook.

- When sampling techniques have verified cleanup, the 616 NRDWSF ~~Supervisor~~ supervisor will sign the spill logbook indicating that the waste was removed from the containment system and cleanup activities were completed. A ~~Solid Waste Engineering~~ solid waste management representative will sign the spill logbook indicating approval of actions taken.

Specific actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A.

In the event of a fire sprinkler activation or a pipe break within the 616 NRDWSF that results in collection of water in the containment system, the following will be performed.

- Water in the containment system visually will be inspected for signs of contamination.

- Containers in the cell(s) affected by a sprinkler activation or a pipe break will be inspected for signs of leakage.

- Inspection reports and the 616 NRDWSF operating and spill logbooks will be reviewed to identify any waste releases in the waste storage areas for which remedial actions were not completed.

- The 616 NRDWSF ~~Supervisor~~ supervisor will sign the 616 NRDWSF logbook indicating that the above steps were completed and that the storage building is clean. Solid ~~Waste Engineering~~ waste management will review the supervisors actions and give concurrence.

- The water will be removed from the containment system. Water that cannot be verified to be free of contamination will be containerized and stored in an area equipped with secondary containment. The containerized water will be handled in accordance with the provisions of the waste analysis plan (Chapter 3.0, Section 3.2).

- The 616 NRDWSF ~~Supervisor~~ supervisor will sign the logbook indicating that the water was removed from the containment system.

Actions to be taken in response to a spill or discharge are detailed in the Building Emergency Plan - 616 Building provided in Appendix 7A.

4.1.2 Containers Without Free Liquids That Do Not Exhibit Ignitability or Reactivity [D-1b]

Containers without free liquids are discussed in the following sections.

4.1.2.1 Test for Free Liquids [D-1b(1)]. The 616 NRDWSF stores containers with free liquid and without free liquid. Therefore, a test for free liquid is not required.

4.1.2.2 Description of Containers [D-1b(2)]. Refer to Section 4.1.1.1, Description of Containers.

4.1.2.3 Container Management Practices [D-1b(3)]. Refer to Section 4.1.1.2, Container Management Practices.

4.1.2.4 Container Storage Area Drainage [D-1b(4)]. Each storage cell consists of a concrete slab sloped to a self-contained containment trench (Section 4.1.1.4 and Chapter 2.0, Section 2.1.2).

4.1.3 Protection of Extremely Hazardous Waste in Containers [D-1c]

All containers are in storage cells at the 616 NRDWSF. These cells are completely enclosed to the weather (Section 4.1.1.7).

4.1.4 Prevention of Reaction of Ignitable, Reactive, and Incompatible Wastes in Containers [D-1d]

The following sections provide information on the management of ignitable, reactive, and incompatible waste in containers. Additional information can be found in Chapter 6.0, Section 6.5.

4.1.4.1 Management of Reactive Waste in Containers [D-1d(1)]. The 616 NRDWSF does not store waste exhibiting the characteristic (reactivity) specified in WAC 173-303-090(7)(a)(vi), (vii), or (viii).

4.1.4.2 Management of Ignitable and Reactive Waste in Containers [D-1d(2)]. The nearest structure or TSD unit boundaries are in excess of 200 feet (61 meters) from any of the ignitable waste sites as shown on Drawing H-13-000014 in Appendix 2A. Two hundred feet (61 meters) is in excess of the limits imposed by the National Fire Protection Association (NFPA 1989).

4.1.4.3 Management of Incompatible Wastes in Containers [D-1d(3)]. The generating unit's waste coordinator and the ~~Solid Waste Engineering~~ solid waste management staff are responsible for determining the regulatory status of each waste and determining the incompatible compounds of the waste. Status information is forwarded on a hazardous waste disposal analysis record (Chapter 3.0, Section 3.2) to the generating unit, who packages the waste as instructed. Afterwards, ~~Solid Waste Disposal Unit~~ solid waste management personnel inspect the container for proper packaging, labeling, marking, and onsite waste tracking forms before transport to the 616 NRDWSF. The container is inspected again at the 616 NRDWSF to determine that the waste is properly packaged, marked, labeled, and manifested (Chapter 3.0, Section 3.2).

Each storage cell in the 616 NRDWSF contains one compatibility group and is segregated either by three self-contained trenches or concrete walls.

4.2 TANK SYSTEM [D-2]

Operation of the 616 NRDWSF does not involve the storage of dangerous waste in tank systems. Therefore, the requirements of WAC 173-303-640 are not applicable to the 616 NRDWSF.

4.3 WASTE PILES [D-3]

Operation of the 616 NRDWSF does not involve the placement of dangerous waste in piles. Therefore, the requirements of WAC 173-303-660 are not applicable to the 616 NRDWSF.

4.4 SURFACE IMPOUNDMENTS [D-4]

Operation of the 616 NRDWSF does not involve the placement of dangerous waste in surface impoundments. Therefore, the requirements of WAC 173-303-650 are not applicable to the 616 NRDWSF.

4.5 INCINERATORS [D-5]

Operation of the 616 NRDWSF does not involve the incineration of dangerous waste. Therefore, the requirements of WAC 173-303-670 are not applicable to the 616 NRDWSF.

4.6 LANDFILLS [D-6]

Operation of the 616 NRDWSF does not involve the placement of dangerous waste in landfills. Therefore, the requirements of WAC 173-303-665 are not applicable to the 616 NRDWSF.

4.7 LAND TREATMENT [D-7]

Operation of the 616 NRDWSF does not involve the land treatment of dangerous waste. Therefore, the requirements of WAC 173-303-655 are not applicable to the 616 NRDWSF.

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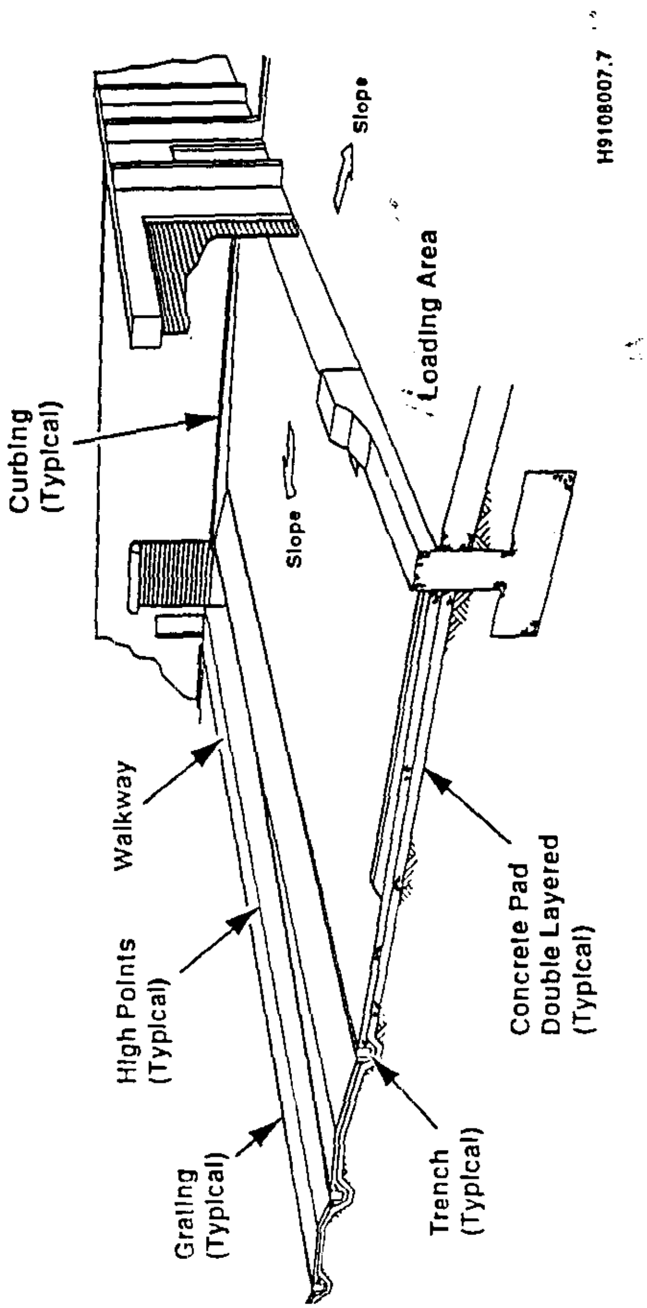

Figure 4-1. Design of the Secondary Containment System.

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Table 4-1. Common Containers Stored at the 616 Nonradioactive Dangerous Waste Storage Facility.

DOT[a] Spec.	Container	Material	Ref.[b] (49 CFR 178)
12P/12U (UN6HG2)	CF[c] w/inner poly liner	Fiberboard/polyethylene	178.~~211/178.24~~522
12B (UN4G1)	CF	Fiberboard	178.~~205~~516
17C (UN1A1)	DM[d]	Low carbon steel	178.~~115~~504
17E (UN1A1)	DM	Low carbon steel	178.~~116~~504
17H (UN1A2)	DM	Low carbon steel	178.~~118~~504
34 (UN1A1)	DF[e]	Polyethylene	178.~~19~~509
37A (UN1A1)	DM	Low carbon steel	178.~~131~~504
37B (UN1A1)	DM	Low carbon steel	178.~~132~~504

[a]U.S. Department of Transportation specifications.
[b]Reference section of regulations.
[c]CF = fiberboard box.
[d]DM = drum, metal.
[e]DF = drum, fiberboard.

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Table 4-2. Container Management Per Storage Cell.

Cell	Maximum containers per tier: Tier 1 (ground)	Tier 2
Regular storage		
Caustics	50 (55 gal) (208.2 liters)	40 (55 gal) 10 (30 gal)[a] (113.6 liters)
Oxidizers	50 (55 gal) (208.2 liters)	40 (55 gal) 10 (30 gal)[a] (113.6 liters)
Combustibles	58 (55 gal) (208.2 liters)	40 (55 gal) 18 (30 gal)[b] (113.6 liters)
Acids	60 (55 gal) (208.2 liters)	40 (55 gal) 20 (30 gal)[b] (113.6 liters)
Flammable liquid storage		
Class 1A	32 (55 gal) (208.2 liters) 1 flammable liquid storage cabinet (135 gal) (512 liters)	32 (20 gal)[c] (75.7 liters)
Class 1B*	40 (55 gal) (208.2 liters)	40 (30 gal)[d] (113.6 liters)

[a]Tier 2, row 1 ≤ 30 gal (113.6 liters) (Chapter 6.0, Figure 6-4)

[b]Tier 2, rows 1 and 6 ≤ 30 gal (113.6 liters) (Chapter 6.0, Figure 6-4)

[c]Tier 2 ≤ 20 gal (75.7 liters)

[d]Tier 2 ≤ 30 gal (113.6 liters)

[Amendment III.1.B.zz.] *A flammable liquid storage cabinet(s) can be used in the Class 1B storage cell resulting in the following arrangement:

36 (55 gal) (208.2 liters) 1 flammable liquid storage cabinet (135 gal) (512 liters)	36 (30 gal)[d] (113.6 liters)
[Amendment III.1.B.aaa.] or	
34 (55 gal) (208.2 liters) 2 flammable liquid storage cabinet (170 gal) (1,024 liters)	34 (30 gal)[d] (113.6 liters)

Because the total volume stored in this configuration [3,195 gal (12094.4 liters)] is less than the other [3,400 gal (12,870.4 liters)], the volume is not listed in Table 4-2. Table 4-4 also is based on the maximum volume stored.

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Table 4-3. Storage Cell Stacking Restrictions.

Cell	Stacked container volume restrictions	
	Single row	Double row
Oxidizer	≤ 30 gallon (113.6 liters)	≤ 55 gallon (208.2 liters)
Caustic	≤ 30 gallon (113.6 liters)	≤ 55 gallon (208.2 liters)
Acid	≤ 30 gallon (113.6 liters)	≤ 55 gallon (208.2 liters)
Combustible	≤ 30 gallon (113.6 liters)	≤ 55 gallon (208.2 liters)
Class 1B flammable	≤ 30 gallon (113.6 liters)	≤ 30 gallon (208.2 liters)
Class 1A flammable	≤ 20 gallon (75.7 liters)	≤ 20 gallon (75.7 liters)

Note: Container stacking is limited to a base container and a second tier.

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Table 4-4. Storage Cell Volume [gallons (liters)].

Cell	Total cell containment volume	Maximum volume of stored containers
Oxidizer	825 (3,123)	5,250 (19,873.4)
Caustic	825 (3,123)	5,250 (19,873.4)
Combustible	912 (3,452.3)	5,930 (22,447.5)
Acid	915 (3,463.7)	6,100 (23,091)
Class 1A flammable	637 (2,414.3)	2,535 (9,596)
Class 1B flammable	719 (2,723.1)	3,400 (12,870.4)

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ATTACHMENT 8

CHAPTER 6.0

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CONTENTS

FIGURES

6.0 PROCEDURES TO PREVENT HAZARDS [F]

The 616 NRDWSF is designed and operated to minimize exposure of the general public and operating personnel to dangerous waste.

6.1 SECURITY [F-1]

The following sections describe the security measures, equipment, and warning signs used to control entry into the 616 NRDWSF.

6.1.1 Security Procedures and Equipment [F-1a]

The following sections describe the 24-hour surveillance system, barrier, and warning signs used to provide security and control access to the 616 NRDWSF.

6.1.1.1 24-hour Surveillance System [F-1a(1)]. The entire Hanford Facility is a controlled access area~~ and is expected to remain so for the foreseeable future~~. The Hanford Facility maintains around-the-clock surveillance for protection of government property, classified information, and special nuclear material. The Hanford Patrol maintains a continuous presence of ~~armed guards~~ protective force personnel to provide ~~Hanford Facility~~ additional security.

6.1.1.2 Barrier and Means to Control Entry [F-1a(2),(2a),(2b)]. Manned barricades are maintained around the clock at checkpoints on vehicular access roads leading to the operational areas of the Hanford Facility. All personnel accessing these areas must have a U.S. Department of Energy-issued security identification badge indicating the appropriate authorization. Personnel also might be subject to a search of items carried into or out of these areas.

The Hanford Facility operates 24 hours a day, 365 days a year. The 616 NRDWSF is and could be occupied at any time. Generally, the storage building is occupied during the day shift, beginning at 7:30 a.m. and ending at 4:00 p.m., Monday through Friday. The 616 NRDWSF is locked when unoccupied.

6.1.1.3 Warning Signs [F-1a(3)]. Warning signs stating "DANGER--UNAUTHORIZED PERSONNEL KEEP OUT" are posted at each entrance to the active portion of the 616 NRDWSF. These signs are in English, legible from a distance of 25 feet (7.6 meters) and visible from all angles of approach.

6.1.2 Waiver [F-1b,b(1),b(2)]

Waiver of the security procedures and equipment requirements for the 616 NRDWSF will not be requested. Therefore, the requirements of WAC 173-303-310 are not applicable to the 616 NRDWSF.

6.2 INSPECTION SCHEDULE [F-2]

This section describes the method and schedule for inspection of the 616 NRDWSF. The purpose of inspection procedures at the 616 NRDWSF is to identify leaking containers, improperly stored containers, and degradation of containment and safety equipment and/or systems. These inspections help ensure that situations do not exist that could cause or lead to the release of dangerous waste to the environment or pose a threat to human health. Abnormal conditions identified by an inspection must be corrected on a schedule that prevents hazards to workers, the public, and the environment.

6.2.1 General Inspection Requirements [F-2a]

The content and frequency of inspections are described in this section. The inspections are documented on inspection datasheets and logsheets. The schedule and inspection records are kept at the 616 NRDWSF in the inspection logbooks. Inspection records are retained for a minimum of 5 years.

6.2.1.1 Types of Problems [F-2a(1)]. Each day the 616 NRDWSF is occupied, a nuclear operator performs a daily inspection (personnel activities that are restricted to the office area do not require a daily inspection of the storage area, provided the ventilation system is fully operational). The inspector carries a Building 616 Daily Solid Waste Operations Inspection form (Figure 6-1) and checks off items as the inspection takes place. Discrepancies are noted in the comments section. Items inspected include the following:

- Condition of concrete floor, walls, and curbing
- Storage building structural integrity
- Safety equipment operational and in place
- Fire extinguishers in place
- Lights and fixtures
- Appropriate safety and packaging equipment
- Container structural integrity
- Secondary containment systems integrity
- Containers closed
- Corrosion of containers
- Evidence of spills or leaks
- Container labels and markings in place

When completed, the operator prints, signs, and dates the form. The form is placed in the inspection logbook and retained on file for 5 years.

~~A Solid Waste Engineering representative performs a weekly audit inspection of the 616 NRDWSF. The inspection is performed to oversee operation and management of the 616 NRDWSF. The inspector carries a Building 616 Weekly Solid Waste Engineering Inspection form (Figure 6-2) covering the same areas as listed previously. The Building 616 Weekly Solid Waste Engineering Inspection form is filled out as the inspection takes place. When finished, the inspector prints, signs, and dates the Building 616 Weekly Solid Waste Engineering Inspection form. The Building 616 Weekly Solid Waste~~

~~Engineering Inspection form is given to the supervisor who reviews the comments section and countersigns the Building 616 Weekly Solid Waste Engineering Inspection form indicating the comments have been seen. The supervisor takes actions to address the comments as needed. The Building 616 Weekly Solid Waste Engineering Inspection form is placed in the 616 NRDWSF inspection logbook and retained on file for a minimum of 5 years.~~ Weekly audits are performed to ensure operation and management of the 616 NRDWSF is in accordance with applicable federal and state regulations. The inspector fills out a form as the inspection takes place (Figure 6-2). When the inspection is completed the inspector signs and dates the inspection form. The inspection form is given to the 616 NRDWSF supervisor who reviews the comments section and countersigns, indicating the comments have been seen. The 616 NRDWSF supervisor takes actions to address the comments as needed. The inspection form is placed in the 616 NRDWSF inspection logbook and retained on file for a minimum of 5 years.

The fire systems at the 616 NRDWSF are inspected annually by representatives of the Hanford Fire Department. Their inspection includes the following:

- Fire protection system inspection and testing
  - Fire alarm pull box inspection and test
  - Manual and automatic fire door inspection and test
- Wet-pipe sprinkler system inspection and testing
  - System visual inspection
  - System internal inspection
  - Pressure of incoming water supply inspection
  - Condition of gages by visual inspection
  - Flow alarm device testing
  - Zone indicated on fire alarm control panel by visual inspection
- Ignitable or reactive waste storage area inspection.

The 616 NRDWSF supervisor conducts a monthly inspection and test of the communication and alarm systems. This inspection and test includes the following:

- Storage building evacuation alarms
- Storage building take cover alarms
- Public address system
- Portable radios and base station
- Crash alarm.

6.2.1.2 Frequency of Inspections [F-2a(2)]. The 616 NRDWSF generally is occupied from 7:30 a.m. to 4:00 p.m., Monday through Friday. To ensure safety, the 616 NRDWSF (if occupied) and its waste inventory are inspected daily by 616 NRDWSF personnel (personnel activities that are restricted to the office area do not require a daily inspection of the storage area, provided the ventilation system is operational). Solid ~~Waste Engineering~~ waste management performs a weekly audit inspection of the 616 NRDWSF and its waste inventory (regardless of occupation) to ensure compliance with applicable federal and state regulations.

Fire protection equipment, storage building alarms, and communication equipment are tested and inspected as identified in Section 6.2.1.1.

As required by WAC 173-303-395(1)(d), an annual inspection of the 616 NRDWSF areas where ignitable or reactive waste is stored is performed by a professional knowledgeable of the Uniform Fire Code. The following information is entered into the 616 NRDWSF logbook as a result of this inspection:

- The date and time of the inspection
- The name of the person who performed the inspection
- A notation of the observations made
- Any remedial actions that were taken as a result of this inspection.

6.2.2 Specific Process Inspection Requirements [F-2b].

The following sections detail the inspections to be performed at the 616 NRDWSF.

6.2.2.1 Container Inspection [F-2b(1)]. Specific items and/or problems identified during container inspection include the following:

- Condition of concrete floor, walls, and curbing
- Lights and fixtures
- Appropriate safety and packaging equipment
- Container structural integrity
- Containers closed
- Corrosion of containers
- Evidence of spills or leaks
- Container labels and markings in place
- Materials wrapped in plastic for signs of plastic deterioration.

These inspections are performed weekly ~~by Solid Waste Engineering personnel. Records~~ and records of inspection are maintained at the 616 NRDWSF as detailed in Section 6.2.1.

6.2.2.2 Tank Inspection [F-2b(2),(2)a-(2)f]. Operation of the 616 NRDWSF does not involve the placement of dangerous waste in tanks. Therefore, the inspection requirements of WAC 173-303-640 are not applicable to the 616 NRDWSF.

6.2.2.3 Waste Pile Inspection [F-2b(3),(3)a-(3)d]. Operation of the 616 NRDWSF does not involve the placement of dangerous waste in piles. Therefore, the inspection requirements of WAC 173-303-660 are not applicable to the 616 NRDWSF.

6.2.2.4 Surface Impoundment Inspection [F-2b(4),(4)a-(4)b]. Operation of the 616 NRDWSF does not involve the placement of dangerous waste in surface impoundments. Therefore, the inspection requirements of WAC 173-303-650 are not applicable to the 616 NRDWSF.

6.2.2.5 Incinerator Inspection [F-2b(5),(5)a-(5)b]. Operation of the 616 NRDWSF does not involve the incineration of dangerous waste. Therefore, the inspection requirements of WAC 173-303-670 are not applicable to the 616 NRDWSF.

6.2.2.6 Landfill Inspection [F-2b(6),(6)a-(6)d]. Operation of the 616 NRDWSF does not involve the placement of dangerous waste in landfills. Therefore, the inspection requirements of WAC 173-303-665 are not applicable to the 616 NRDWSF.

6.2.2.7 Land Treatment Facility Inspection [F-2b(7),(7)a-(7)b]. Operation of the 616 NRDWSF does not involve the land treatment of dangerous waste. Therefore, the inspection requirements of WAC 173-303-655 are not applicable to the 616 NRDWSF.

6.3 WAIVER OR DOCUMENTATION OF PREPAREDNESS AND PREVENTION REQUIREMENTS [F-3]

The following sections document the preparedness and prevention measures taken at the 616 NRDWSF.

6.3.1 Equipment Requirements [F-3a]

The following sections describe the internal and external communications systems and the emergency equipment required.

6.3.1.1 Internal Communications [F-3a(1)]. The 616 NRDWSF is equipped with an internal communication system to provide immediate emergency instruction to personnel. The onsite communication system at the 616 NRDWSF includes telephones, a public address system, and alarm systems. The telephone system provides internal and external communication. Telephones are available in the operations office, Packaging Material and Handling Equipment Area, and on a telephone pole 75 feet (22.9 meters) east of the 616 NRDWSF, between the 616 NRDWSF and the primary staging area [the location of internal communication equipment and the primary staging area is identified in the building emergency plan (Appendix 7A)]. Alarm systems exist at the 616 NRDWSF to allow personnel to appropriately respond to various emergencies, including the following emergency situations: building evacuations, take cover events, and fire and/or explosion (Appendix 7A).

Immediate emergency instruction to personnel is provided by a public address system via speaker horns and ceiling-mounted speakers located throughout the storage building, as well as speaker horns located on the outside of the storage building.

6.3.1.2 External Communications [F-3a(2)]. The 616 NRDWSF is equipped with devices for summoning emergency assistance from the Hanford Fire Department, the Hazardous Materials Response Team, and/or local emergency response teams, as necessary. External communication is made via a telephone communication system, a two-way radio base station, and two-way portable radios. Telephones are available in the operations office, Packaging Material and Handling Equipment Area, and on a telephone pole 75 feet (22.9 meters) east of the 616 NRDWSF, between the 616 NRDWSF and the primary staging area [the location of external communication equipment and the primary staging area is identified in the building emergency plan (Appendix 7A)]. In addition, the following external communication systems are available for notifying persons assigned to emergency response organizations.

- Fire alarm pull boxes and fire sprinkler flow monitoring devices--connected to a system monitored around the clock by the Hanford Fire Department.

[Amendment III.1.B.ii.]

- Telephone number 911--contact point for the Hanford Facility; on notification, the Hanford Patrol Operations Center notifies and/or dispatches required emergency responders.

- Telephone number 3-3800--single point of contact for the emergency duty officer; this number can be dialed from any Hanford Site telephone.

- Crash alarm telephone system--consists of selected telephones that are disassociated from the regular system and automatically are connected to control stations.

- Two-way radio system--the system accesses the Hanford Site emergency network and can summon the Hanford Fire Department, Hanford Patrol, and/or any other assistance requested to handle emergencies.

6.3.1.3 Emergency Equipment [F-3a(3)]. A detailed list of equipment is included in the building emergency plan (Appendix 7A).

6.3.1.4 Water for Fire Control [F-3a(4)]. The 616 NRDWSF has a potable water main installed for fire control. The available water pressure [measured at the 609-A Fire Station fire hydrant--across the street from the 616 NRDWSF (Chapter 2.0, Figure 2-2)] has a static pressure of 79 pounds per square inch, with a residual pressure of 39 pounds per square inch when flowing at 910 gallons (3,444.7 liters) a minute.

6.3.2 Aisle Space Requirement [F-3b]

The container storage arrangement and aisle spacing for each storage cell are shown in Figure 6-3. Aisle spacing is sufficient to allow the movement of personnel and fire protection equipment in and around the containers. A minimum 30 inch (0.76 meter) aisle space will be maintained between rows of containers as required by WAC 173-303-630(5)(c).

6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]

The following sections describe preventive procedures, structures, and equipment.

6.4.1 Unloading Operations [F-4a]

The loading and unloading areas of the 616 NRDWSF are described in Chapter 2.0, Section 2.1.2.6. All loading and unloading operations are carried out on concrete pads that are equipped with containment trenches. The nuclear operators ensure the following before waste is unloaded at the 616 NRDWSF.

- All trench and sump gratings are in place.
- All interior sumps and trenches are clean and dry.
- All exterior loading pad trenches have minimum residual water (Chapter 2.0, Section 2.5.1).
- Loading pad trench drain plugs are closed and locked.
- Necessary storage building access doors are open.
- Area from loading pad to appropriate storage cell is clear of obstructions.
- If used, the fork truck lift is operational and raised.
- The truck is placed so that container movement occurs over the loading pad.

After a shipment has been accepted for storage (Chapter 2.0, Section 2.8.1), the transporter is requested to unload the truck. Multiple waste containers are placed on pallets for movement into the 616 NRDWSF using pallet jacks or a forklift; the forklift is prohibited from operating in the Class 1A flammable liquid storage cell. Single containers are hand carried or moved on a dolly. The containers are placed in the storage cell as assigned on the associated hazardous waste disposal analysis record (Chapter 3.0, Section 3.2). When the storage of containers is completed, all storage building doors are closed.

6.4.2 Run-Off [F-4b]

Chapter 4.0, Section 4.1.1.7, contains information on run-off and run-on of liquid at the 616 NRDWSF.

6.4.3 Water Supplies [F-4c]

Water is supplied to the 616 NRDWSF from the Columbia River via the Hanford Site potable water system. All hose connections to the potable water line have a one-way check valve installed to prevent back flow. These check valves prevent contamination from entering the water supply lines from within the 616 NRDWSF.

The water supply system (potable and fire sprinkler supply) for the 616 NRDWSF has no backup. A backup is not necessary because of the proximity of the 609-A Fire Station, which can provide a 2 minute response time (Drawing H-13-000014 in Appendix 2A).

6.4.4 Equipment and Power Failure [F-4d)

The only powered equipment at the 616 NRDWSF is a forklift, fork truck lift, and the ventilation system. If the forklift or fork truck lift fails, the 616 NRDWSF supervisor makes the necessary notifications ~~to have it repaired or replaced~~ for repairs. Actions taken in response to a loss of ventilation are detailed in the building emergency plan (Appendix 7A).

As described in Section 6.3.1.2, emergency communication equipment is available to summon emergency assistance in the event of a power loss.

6.4.5 Personnel Protection Equipment [F-4e]

At the 616 NRDWSF, procedures, structures, and equipment are used to prevent undue exposure of personnel to dangerous waste. The 616 NRDWSF includes eyewash stations and safety showers in the combustible storage cell and the packaging and sampling room. Protective clothing and equipment are used by personnel handling dangerous waste. Protective clothing used at the 616 NRDWSF consists of foot, eye, and face protection.

The following protective clothing is worn when handling waste containers:

- Safety glasses
- Chemical-resistant gloves
- Chemical-resistant coveralls
- Approved safety shoes
- Face shield.

The following protective clothing is worn when handling empty new containers:

- Safety glasses or goggles
- Leather gloves
- Approved safety shoes.

6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES [F-5]

The following sections describe prevention of reaction of ignitable, reactive, and incompatible waste.

6.5.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste [F-5a]

All waste, including ignitable waste, is stored in sealed U.S. Department of Transportation-approved containers. Ignitable waste is stored in the Class 1A or Class 1B flammable liquid storage cells (Chapter 2.0, Figure 2-3). The 1A cell is equipped with National Fire Protection Association 70 Class I/ Division I (NFPA 1989) electrical fixtures, intrinsically safe chemical transfer pumps and receptacles, an explosion relief wall, 'blow out' pressure relief ceiling panels, and grounding cables. Operation of the electric forklift is prohibited in the Class 1A flammable liquid storage cell.

The 616 NRDWSF does not store reactive waste as defined in WAC 173-303-090(7)(a) (vi), (vii), or (viii).

Water-reactive waste is stored in U.S. Department of Transportation-approved containers inside portable weatherproof storage cabinets. These cabinets are standalone units that are placed in the flammable liquid storage cells (Figure 6-3) on an as-needed basis. Other reactive waste is stored throughout the storage building depending on waste type and compatibility.

Smoking is prohibited in the storage building. Multiple "NO SMOKING" signs are present to remind occupants.

6.5.2 General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste [F-5b]

Based on the dangerous characteristics identified by the generating unit, specific packaging instructions are provided~~ by the Solid Waste Engineering staff~~. General guidance is provided to the generating unit in an internal document concerning waste packaging and disposal requirements. A compatibility analysis is performed on the waste as well. Incompatible waste is not packaged within the same container or placed in the same storage cell.

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Building 616 Daily ~~Solid Waste Operations~~ Inspection (sheet 1 of 3)

Inspection No._______ Status:_______ Date:______ Time:_____

	Yes	No	If no, specify
1.0 Office Area			
Exit Unobstructed			
Fire extinguisher in place			
Public address system operating			
Ventilation indicator lights operating			
Telephone operating			
Radio operating			
2.0 Hallway			
Exit sign operating			
Fire extinguisher in place			
Exits unobstructed			
Protective equipment supply present			
Pressure differential gage working-reading:			
3.0 Receiving Material and Handling Equipment Area			
Absorbents present			
Emergency equipment present			
Exit light operating			
Exit unobstructed			
Fire extinguisher in place			
Overpack drums present			
Telephone operating			
Radio operating			
4.0 Structure Exterior			
Curbing in good condition			
Exits unobstructed			
Pads/loading area crack free			
Trenches locked closed/empty			
No combustibles stored within 50 feet of structure			
Roads/fire lanes unobstructed			
Exterior telephone operating			

Figure 6-1. Building 616 Daily ~~Solid Waste Operations~~ Inspection. (sheet 1 of 3)

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Building 616 Daily ~~Solid Waste Operations~~ Inspection. (sheet 2 of 3)

	Packaging and Sampling Room[a]	Oxidizer[a]	Caustic[a]	Acid[a]	Combustible[a]	Flammable 1B[a]	Flammable 1A[a]
5.0 Storage Areas							
A. Container Condition:							
Closed							
Corrosion							
Evidence of leakage							
Required labels							
Structural defects							
B. Structures:							
Curbing							
Exits unobstructed							
Floor							
Roof/walls							
C. Safety/Emergency Equipment							
Exit light operating							
Fire extinguisher in place	NA	NA	NA	NA			NA
D. Container Location[b]							
Waste Tracking Form ID No./Location							
Waste Tracking Form ID No./Location							
Waste Tracking Form ID No./Location							

[a]N/A - Not applicable.
X - No problems noted.
C - See comments for problem description or remedial action required.
[b]Three container locations are verified against the storage building inventory. Record the waste tracking form ID No./location for each container checked above. Record discrepancies identified in the comments section.

Figure 6-1. Building 616 Daily ~~Solid Waste Operations~~ Inspection. (sheet 2 of 3)

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Building 616 Daily ~~Solid Waste Operations~~
Inspection. (sheet 3 of 3)

6. Comments

____

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____

Inspector ______________________________
(print name)

____
(sign name)

7. Remedial Action Taken

____

____

____

____

8. Solid Waste Operations Supervisor Acknowledgment of Action Completed:

Completion Date: ______________________

Today's Date: ______________________

____
(print name)

____
(sign name)

Figure 6-1. Building 616 Daily ~~Solid Waste Operations~~ Inspection. (sheet 3 of 3)

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Building 616 Weekly ~~Solid Waste Engineering~~ Inspection (sheet 1 of 3)

Inspection No._______ Status:_______ Date:______ Time:______

	Yes	No	If no, specify
1.0 Office Area			
Emergency light operable			
Exit unobstructed			
Fire extinguisher charged			
Public address system operating			
Ventilation indicator lights operating			
Telephone operating			
Radio operating			
Evacuation alarm tested once monthly; date tested:			
2.0 Hallway			
Exit sign operating			
Fire extinguisher charged			
Exits unobstructed			
[Amendment III.1.B.x.] Protective equipment supply present per the emergency equipment list*			
Pressure differential gage working-reading:			
3.0 Receiving Material and Handling Equipment Area			
Absorbents present			
Emergency equipment present			
Emergency light operable			
Exit light operating			
Exit unobstructed			
Fire extinguisher charged			
Overpack drums present			
Public address system (audible)			
Telephone operating			
Radio operating			
4.0 Structure Exterior			
Curbing in good condition			
Exits unobstructed			
Pads/loading area crack free			
Trenches locked closed/empty			
No combustibles stored within 50 feet of structure			
Roads/fire lanes unobstructed			
Exterior telephone operating			

* This equipment shall be individually inspected and documented by type, and be in adequate condition, and in the quantities listed. The revised checklist shall be submitted for approval to the Department within 30 days of the effective date of this Permit.

Figure 6-2. Building 616 Weekly ~~Solid Waste Engineering~~ Inspection. (sheet 1 of 3)

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Building 616 Weekly ~~Solid Waste Engineering~~ Inspection. (sheet 2 of 3)

	Packaging and Sampling Room[a]	Oxidizer[a]	Caustic[a]	Acid[a]	Combustible[a]	Flammable 1B[a]	Flammable 1A[a]
5.0 Storage Areas							
A. Container Condition:							
Closed							
Corrosion							
Evidence of leakage							
Required labels							
Structural defects							
B. Structures:							
Curbing							
Exits unobstructed							
Floor							
Roof/walls							
Signs							
C. Safety/Emergency Equipment							
[Amendment III.1.B.x.] Personal Protective Equipment*		NA	NA	NA	NA	NA	NA
Emergency light operable		NA		NA			NA
Exit light operating							
Fire extinguisher charged	NA	NA	NA	NA			NA
Public address system (audible)							
Safety shower/eye wash tested/flushed (weekly); date tested:		NA	NA	NA		NA	NA
D. Container Location[b]							
Waste Tracking Form ID No./Location							
Waste Tracking Form ID No./Location							
Waste Tracking Form ID No./Location							
Waste Tracking Form ID No./Location							
Waste Tracking Form ID No./Location							

[a]N/A - Not applicable.
X - No problems noted.
C - See comments for problem description or remedial action required.
[b]Five container locations are verified against the storage building inventory. Record the waste tracking form ID No./location for each container checked above. Record discrepancies identified in the comments section.
* [Amendment III.1.B.x.] Located in sealed cabinet. Check for integrity of seal.

Figure 6-2. Building 616 Weekly ~~Solid Waste Engineering~~ Inspection.
(sheet 2 of 3)

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Building 616 Weekly ~~Solid Waste Engineering~~ Inspection. (sheet 3 of 3)

6. Comments

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____
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____

Inspector ______________________________
(print name)

____
(sign name)

7. Remedial Action Taken

____
____
____
____

8. Solid Waste Operations Supervisor Acknowledgment of Action Completed:

Completion Date: ____________________

Today's Date: ____________________

____
(print name)

____
(sign name)

Figure 6-2. Building 616 Weekly ~~Solid Waste Engineering~~ Inspection. (sheet 3 of 3)

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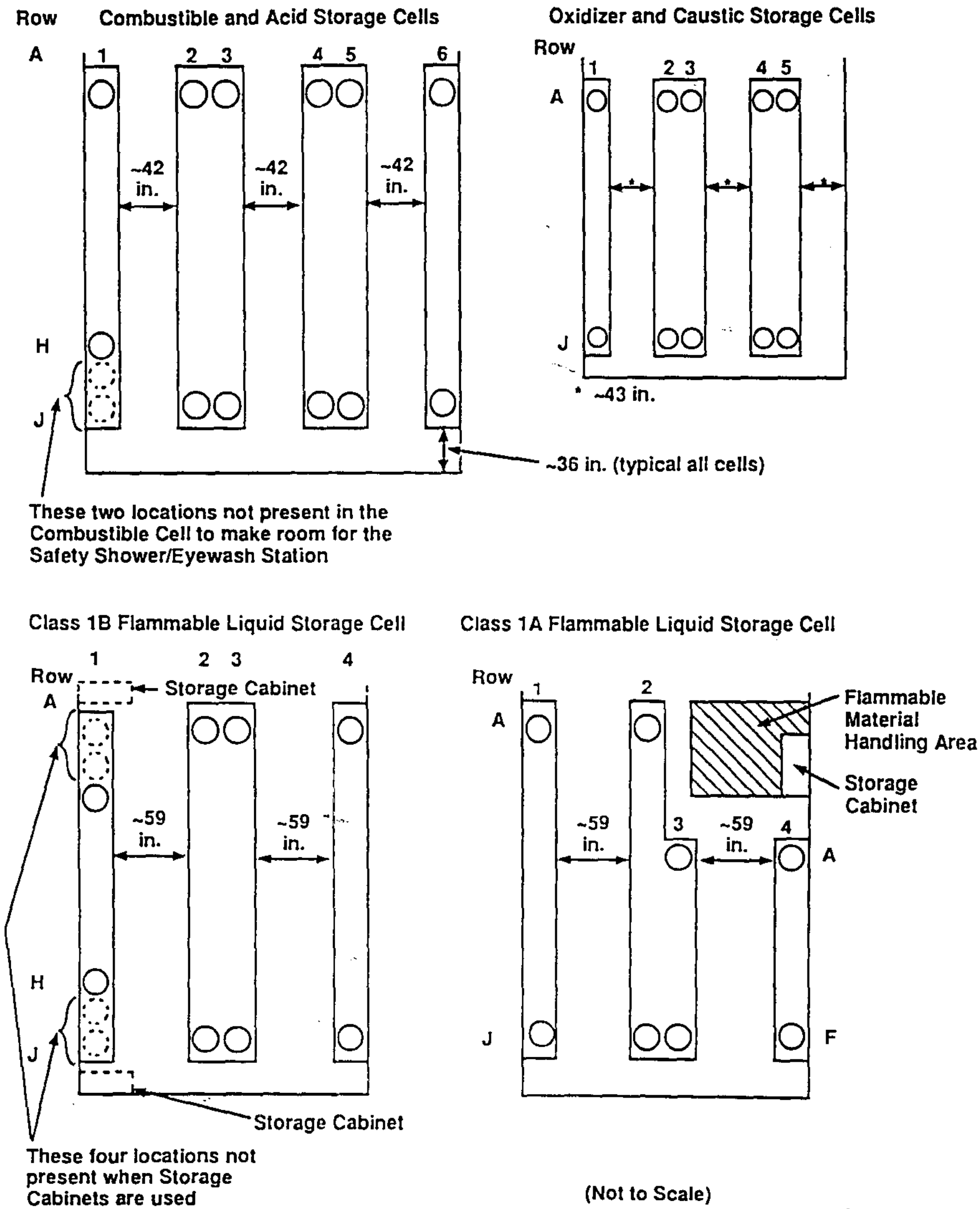

1 Figure 6-3. Current Container Storage Layout.

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ATTACHMENT 8

CHAPTER 7.0

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CONTENTS

APPENDIX

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7.0 CONTINGENCY PLAN [G]

[Amendment III.1.B.ii.] All instances where the emergency response number is cited as "811" shall be changed to "911." The WAC 173-303 requirements for contingency plans are satisfied in the following documents: ~~the DOE RL emergency plan and procedures manual, the *Emergency Plan* (WHC 1989), and~~ the *Building Emergency Plan - 616 Building* (Appendix 7A) and the Hanford Facility Contingency Plan (DOE/RL-93-75). ~~The DOE RL emergency plan and procedures manual and the *Emergency Plan* are available for review upon request. The *Building Emergency Plan - 616 Building* is provided as Appendix 7A.~~

The cited contingency plan documents also serve to satisfy a broad range of other requirements (e.g., Occupational Safety and Health Administration and U.S. Department of Energy Orders). Therefore, revisions made to portions of the contingency plan documents that are not governed by the requirements of WAC 173-303 will not be considered as modifications subject to review or approval by Ecology.

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ATTACHMENT 8

CHAPTER 8.0, PAGE 8-28

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8.1.5 Training to Emergency Response [H-1e]

Effective response to emergencies and familiarity with emergency equipment and emergency systems are covered under the classroom and on-the-job training requirements as outlined in Tables 8-1 through 8-5 and in Appendix 8A.

Federal and state regulations require that personnel be able to respond effectively to emergencies and that personnel be familiar with emergency procedures, emergency equipment, and emergency systems. Specific topics addressed include the following:

- Building emergency director's training
- Building emergency plan checklist training
- Solid waste unit-specific training
- Solid waste operations orientation
- Solid waste operations nuclear operator emergency procedures and abnormal plant conditions training
- Solid waste operations supervisor emergency procedures and abnormal plant conditions training.

8.2 IMPLEMENTATION OF TRAINING PROGRAM [H-2]

The Solid Waste Management training program is in place and has been fully implemented. Certification for Solid Waste Management personnel is required before working without supervision. Certification requires personnel to successfully complete identified classroom and on-the-job training requirements. Certification requires management to successfully complete self-study, classroom, and on-the-job training requirements. Training content is reviewed and updated as appropriate.

General training of new employees is to be completed within the first 6 months. After the initial training, employees are required to recertify annually or biannually as applicable. Uncertified employees are not permitted to work at the 616 NRDWSF without the supervision of a certified employee. The Solid Waste Unit Operations manager is responsible for ensuring new employees are trained and certifications are maintained.

Official training record files for Solid Waste Management employees are stored in the Training Records Information System. This database is managed by a training organization. The training organization inputs the completed training records into a computer file. The computer file is accessible on a local area network to allow remote accessing of employee training records via a computer terminal. A tickler file is available from the database to inform the Solid Waste Unit Operations manager when training is within 90 days of expiration. A copy of completed training and certifications for 616 NRDWSF employees is available at the 616 NRDWSF. All training records are maintained for a period of 3 years from the date the employee last worked at the TSD unit.

[Amendment III.1.B.y.]

ATTACHMENT 8

CHAPTER 11.0

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CONTENTS

CONTENTS (cont)

APPENDICES

FIGURES

TABLES

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11.0 CLOSURE AND POSTCLOSURE REQUIREMENTS [I]

[Amendment III.1.B.z.] All sampling and analyses necessary for soils underneath a contaminated concrete layer must be performed prior to removal of the overlying concrete. All soils which exceed the clean closure standards of WAC 173-303-610(2)(b) shall be managed in a manner analogous to that for contaminated surrounding soil as described in Chapter 11 of Attachment 8.

This chapter presents the closure plan for the 616 NRDWSF. The 616 NRDWSF is a clean, well-maintained dangerous waste container storage unit. Detailed records are maintained of materials stored at the 616 NRDWSF and spills and other unusual occurrences are handled promptly and are well documented. As a controlled container storage unit, the 616 NRDWSF is not anticipated to become extensively contaminated (the use of the word contaminated refers to contamination by dangerous chemicals regulated by Ecology); therefore, the closure approach will be clean closure. Consistent with the criteria that must be met to clean close a TSD unit, no postclosure activities will be necessary. Closure of the 616 NRDWSF will comply with WAC 173-303-610 regulations for the closure of TSD units. This chapter describes the performance standards that will be met, and closure activities that will be conducted to achieve clean closure.

11.1 CLOSURE PLAN [I-1]

The 616 NRDWSF became operational in 1986 and is designed for a 20-year operational life. The 616 NRDWSF Dangerous Waste Permit will be in effect for a maximum of 10 years. Before the end of the 10-year permit lifespan, the storage unit will be evaluated for operational fitness and repermitted. Any deficiencies (including deficiencies associated with the closure plan) will be corrected before continued use is considered.

Activities that are planned to achieve clean closure are presented in the following sections.

11.1.1 Closure Performance Standard [I-1a]

The following sections address closure performance standards and waste removal and decontamination standards.

11.1.1.1 Performance Standard [I-1a(1)]. Closure of the 616 NRDWSF will be conducted in a manner that meets the following closure performance standards of WAC 173-303-610(2)(a):

- Minimize the need for further maintenance

- Control, minimize, or eliminate to the extent necessary to protect human health and the environment, postclosure escape of dangerous waste, dangerous waste constituents, leachate, contaminated run-off, or dangerous waste decomposition products to the ground, surface water, groundwater, or the atmosphere

- Return the land to the appearance and use of surrounding land areas to the degree possible given the nature of the previous dangerous waste activity.

[Amendment III.1.B.aa.] These standards will be achieved by removing, to below background levels or regulatory thresholds, dangerous waste from the 616 NRDWSF and decontaminating or removing all equipment, structures, soils, or other materials containing or contaminated with dangerous waste.

11.1.1.2 Removal or Decontamination Standard [I-1a(2)]. Clean closure of the 616 NRDWSF will require removal and disposal of all dangerous waste, contaminated equipment, and rinsates to standards specified in WAC 173-303-610(2)(b). Sampling will ensure that all dangerous waste contamination is detected and removed as part of closure.

Contaminated equipment in the 616 NRDWSF will be decontaminated until wipe sample analyses of the portions of the equipment, which would be in contact with potentially contaminated materials or fluids, demonstrate that the equipment is not a dangerous waste. The level of quantitation will be used as the action level for wipe samples. Clean equipment will be reused. Any equipment that cannot be decontaminated will be disposed of as dangerous waste.

All concrete within the 616 NRDWSF boundary is susceptible to contamination and there are no other pours of the same concrete outside of the unit boundary. Because there is no other concrete available to establish a background level, the approach detailed in Table 11-1 will be used for the analysis of the concrete samples. **[Amendment III.1.B.z.]** All sampling and analyses necessary for soils underneath a contaminated concrete layer must be performed prior to removal of the overlying concrete. All soils which exceed the clean closure standards of WAC 173-303-610(2)(b) shall be managed in a manner analogous to that for contaminated surrounding soil as described in Chapter 11 of Attachment 8.

The concrete floor of the 616 NRDWSF includes the trenches and sumps. The trenches and sumps of the 616 NRDWSF are assumed to be the areas of the floor subjected to the highest level of contamination. Consequently, the disposition of the floor will be contingent on results of the core sampling of the trenches and sumps. In addition to the trenches and sumps, the loading areas of the 616 NRDWSF also will be core sampled. The floor, trenches, and sumps of the storage and loading areas will be removed and disposed of as dangerous waste if contamination is found in the designating sample. The designating sample will be considered to be the sample indicating the highest level of contamination. Action levels for the analysis of the core samples will be established in accordance with Table 11-1.

The soil immediately surrounding the loading areas will be sampled for verification that the environment has not been affected by the 616 NRDWSF operations. Should contaminants be detected above background levels, the soil will be excavated until the level of chemical constituents around the 616 NRDWSF is below or equal to that of soil background levels. Soil background levels will be based on established and accepted Hanford Site soil background information (WHC 1991) or established by soil sampling per SW-846 (EPA 1986).

To achieve the above-mentioned standards within the tolerances specified, distinct sampling strategies and methods have been determined for the floor of the cells, loading areas, equipment, and soil. These strategies and methods are discussed in Section 11.1.4.

11.1.2 Partial Closure Activities [I-1b]

No partial closure activity is anticipated for the 616 NRDWSF.

11.1.3 Maximum Waste Inventory [I-1c]

Of the 6 cells, the caustic cell and the oxidizer cell each can hold 5,250 gallons (19,873.4 liters), the combustible cell can hold 5,930 gallons (22,447.5 liters), and the acid cell can hold 6,100 gallons (23,091 liters) of waste. The remaining 2 cells, the Class 1A flammable cell and the Class 1B flammable cell, can hold 2,535 gallons (9,596 liters) and 3,400 gallons (12,870.4 liters), respectively. To achieve this capacity, the waste containers would have to be double stacked as detailed in Chapter 4.0, Section 4.1.1.2. In total, 28,635 gallons (108,395.3 liters) of waste can be stored in the 616 NRDWSF. Figure 11-1 shows the configuration and layout of a typical cell.

11.1.4 Inventory Removal, Disposal or Decontamination of Equipment, Structures, and Soils [I-1d]

Closure activities will entail sampling and decontamination or removal and disposal of the structure, equipment, and soil. These activities will consist of the following steps, as necessary, to determine what dangerous waste, if any, has contaminated the building, the associated equipment, the loading areas, and the surrounding soil.

1. Decontaminate the storage building floor and walls.

2. Decontaminate the associated storage building equipment.

3. Decontaminate the loading areas.

4. Perform verification sampling of the storage building trenches and sumps, associated equipment, and loading areas to determine the effectiveness of decontamination procedures.

5. Perform repeated decontamination and verification sampling until the removal of all contaminants is verified or the component is properly disposed of.

6. Excavate and dispose of any contaminated soil.

7. Perform repeated excavation and verification sampling until all contaminated soil has been removed.

8. Decontaminate any equipment used in performing closure activities.

9. Dispose of all contaminated materials and rinsates generated during the closure activities.

10. Restore the area after closure activities are complete.

11. Certify that closure activities were completed in accordance with the approved plan.

A sampling flow path for the 616 NRDWSF components is shown in Figure 11-2.

11.1.4.1 Inventory Removal. All waste inventory will be shipped offsite to a permitted TSD facility within 90 days after receiving the last volume of dangerous waste. Following the final shipment of waste, the 616 NRDWSF floor, walls, and loading areas will be washed down and decontaminated. An appropriate decontamination method such as high-pressure, low-volume steam cleaning coupled with detergent washes will be used. Such a combination is nondangerous in itself and will be effective for both organic and inorganic constituents. The decontamination rinsate will be containerized, sampled, designated and, if regulated, shipped offsite to a permitted TSD facility. All materials packaged for shipment to a permitted TSD facility will be in U.S. Department of Transportation-approved containers that are compatible with the waste contents. All containers will be labeled and shipped with an accompanying offsite manifest. All dangerous waste rinsate generated from decontamination of the 616 NRDWSF will be handled in the same manner.

11.1.4.2 Decontamination of Building Equipment. Most of the equipment at the 616 NRDWSF is used for drum handling. This equipment could become contaminated in the event of a leaking or ruptured drum. Storage building equipment includes the following:

- Barrel sling
- Drum dollies, hand trucks, pallet jacks, and/or electric forklift truck
- Chemical transfer pumps
- Gantry crane
- Barrel tongs.

Any contaminated storage building equipment will be decontaminated with an appropriate decontamination method, such as high-pressure, low-volume steam cleaning coupled with detergent washes. The equipment decontamination rinsate will be handled in the same manner as the storage building decontamination rinsate. Equipment will be decontaminated until wipe sample analysis shows no detectable contamination.

Other equipment within the storage building not associated with drum handling includes cold and hot water lines servicing the basins and safety showers. As shown in Drawing H-6-1559 in Appendix 4B, the cold water line enters the receiving area at the change rooms and is routed to various locations within the storage building. A counter top with two stainless steel basins with their own independent hot water heater is provided in the packaging and sampling room. Both basins have hot and cold running water. The basins are provided for emergency use and do not have drains. The storage building has two safety showers, one in the packaging and sampling room and one in the combustible cell. The cold water line feeds these showers as well as hose bibs in each cell. The hose bibs serve as a wash water source if water is needed. To protect the water supply, each hose bib has a back flow preventor.

The hot water heater in the packaging and sampling room is piped to the hot water faucets at the basins as well as along the north wall to the combustible cell where the piping is capped off. The water from the showers drains to the floor and to the trenches (sampling and decontamination of the trenches are discussed in Section 11.1.5). The showers in the storage portion of the 616 NRDWSF are not expected to be contaminated with dangerous waste and will not be sampled for dangerous waste contamination. The tile field will be sampled for verification purposes (sampling of the tile field is discussed in Section 11.1.5.4.4). The basins will be sampled and decontaminated if, based on documentation, the basins have been used for handling of dangerous constituents. The basins will be wipe sampled and the samples will be analyzed for the documented constituents that were released to the basins.

11.1.5 The 616 Nonradioactive Dangerous Waste Storage Facility Sampling Plan

This section details the sampling plan that will be implemented following the removal of the dangerous waste inventory and the initial building decontamination.

The waste sampling and analysis plan has been prepared to evaluate contamination, if any, at the 616 NRDWSF. A flowchart for sampling activities is provided in Figure 11-2.

The walls of the storage cells are not expected to be contaminated with dangerous waste and therefore will not be sampled. The walls are sealed, to a height of 8 feet (2.4 meters), with an epoxy sealant (Chapter 2.0, Section 2.1.2.2), which prevents material from soaking into the concrete. The 616 NRDWSF uses rigid documentation showing the time, location, and analysis to verify that spills are cleaned up. Any material spilled in the 616 NRDWSF is removed and verification samples are taken to ensure that no residue remains (Chapter 4.0, Section 4.1.1.8). Therefore, it is not necessary to sample the walls of the 616 NRDWSF because the walls are known to be clean.

11.1.5.1 Sampling Plan Objectives. The objectives of the 616 NRDWSF sampling plan are as follows:

- Obtain local background concentrations for soil, if required (Section 11.1.1.2)

- Determine whether the concrete floor and loading pads contain dangerous waste constituents as defined by WAC 173-303

- Identify and quantify the specific dangerous waste constituents (if any) that are present using methods outlined in SW-846 (EPA 1986). If any other methods are used, the methods will be referenced and submitted to Ecology

- Evaluate sample analysis data to determine closure actions.

11.1.5.2 Site Safety. The following sections identify measures that will be in place during implementation of the sampling plan to ensure personnel safety.

11.1.5.2.1 Health and Safety Plan. A health and safety plan is required for all dangerous waste sampling sites. A health and safety plan is intended to specify information pertinent to field assignments and to be a guide in unusual situations or emergencies. A site-specific version of the general RCRA/CERCLA investigation health and safety manual will be developed to be used for sampling at the 616 NRDWSF. This plan will be completed and added to the closure plan before initiation of sampling activities. A description of the procedure to be used for preparing the site-specific health and safety plan is located in Appendix 11B.

11.1.5.2.2 Standard Safety Procedures. The following safety procedures will apply each time personnel make a site entry for sampling purposes.

- No personnel will be at the site without a designated 'buddy'.

- One of the people entering the site will be designated to be in charge.

- Personal protective equipment will be worn as specified in the health and safety plan. Approved deviations will be entered in the field logbook and signed by the field team leader (cognizant engineer) and the site safety officer.

- Field work will be planned before the site is entered.

- Equipment needed for work will be inventoried and inspected before the site visit to ensure that all equipment is present and in operable condition.

11.1.5.3 Analytical Parameters. All samples taken as part of the closure of the 616 NRDWSF will be analyzed for the constituents identified in Appendix IX of 40 CFR 264, unless specified otherwise in the text of this closure plan. The 616 NRDWSF sampling plan was developed to determine the presence of contamination that could have resulted from the storage of dangerous waste.

11.1.5.4 Sampling Activities. Sampling activities will be conducted in the 616 NRDWSF as follows:

- Collect local background soil samples
- Core the concrete floor and loading pads
- Collect samples of the soil immediately surrounding the loading pads
- Collect samples of the soil from the tile field and french drain.

Sampling procedures to be used for establishing local background concentrations and for determining whether chemical waste has contaminated the storage building and loading pads are described in this section. Sampling procedures will be conducted in conformance with procedures described in Appendix 11B.

11.1.5.4.1 Background Soil Samples. Background soil sampling will be done at the time of closure, if required (Section 11.1.1.2). Five initial samples will be taken at a distance from the 616 NRDWSF such that the soil would not be impacted by the storage unit operations, but would still be in a similar geologic strata. Standard statistical analyses will be performed to approximate the background population distribution function. Metals are expected to be found in a log normal distribution in the soil; therefore, the natural logarithm of the analytical value will be calculated for use in determining means and standard deviations and in comparing data from the soil immediately surrounding the 616 NRDWSF. Other dangerous constituents are expected to follow in a normal distribution in the soil, so actual analytical values will be used for calculations and comparisons. If the variance is large and, therefore, the computed background threshold value (based on at least 90 percent confidence) is too large, further background sampling might be necessary.

For those cases where comparisons with the background threshold value are not applicable, samples will be compared to regulatory thresholds. Soil samples will be considered contaminated if the constituent levels are above a 3-sigma tolerance limit on the background mean.

11.1.5.4.2 Concrete Floor. The floor of the 616 NRDWSF is poured concrete. A penetrating sealant has been applied to seal concrete pores and fill any cracks that might have developed while the concrete set up (Chapter 4.0, Section 4.1.1.4). Any further cracks are filled as the cracks are detected in the weekly inspection of the storage building or during regular 616 NRDWSF operations. Resealing also occurs at regular intervals. In accordance with existing operating procedures used at the storage building, spills are contained (with absorbent material if liquid), the area of the spill is contained and/or stabilized, and the area is cleaned up. The recovered material is shipped offsite to a permitted TSD facility.

The trenches and sumps are assumed to be the areas of the floor subject to the highest level of contamination. The disposition of the floor will be determined by sampling and verification of the trenches and sumps. Waste entering the trenches and sumps is in a liquid state and is assumed to be relatively homogeneous. The sample locations have been placed based on this assumption. Cell trenches have center sumps that are 1 foot (0.3 meter) by 1 foot (0.3 meter) by 5 inches (12.7 centimeters) in size. Walkway trenches have no sumps, but the trenches slope down to one end. Room sumps are flat bottomed. The trench and sump configuration is shown in Figure 11-3. The areas to be sampled are shown in Figure 11-4.

For verification purposes, each trench and sump will be core sampled. Core samples will be taken to determine whether or not regulated constituents have penetrated the concrete sealant. Two samples will be taken in each trench, one random and one authoritative (in the deepest part of the trench). One sample will be taken in the center of each sump. A coring device will cut a core from each selected location.

The coring device employs a diamond bit that uses distilled water as a cutting lubricant to minimize dust generation. No organic-based lubricant will be used. An industrial-size shop vacuum will be used to remove excess water from around the core to minimize surface contamination flowing into the underlying material. The waste water from the shop vacuum will be emptied into a new U.S. Department of Transportation-approved container and will be stored at the 616 NRDWSF while awaiting disposal. A description of the procedure to be used for decontaminating the coring device is located in Appendix 11B. All decontamination fluids will be containerized with the waste water.

Once the core is cut, the core will be withdrawn and protected from cross-contamination. A laboratory will perform analyses on the core in accordance with procedures defined in Table 11-1.

If the analyses of the concrete cores indicate that contamination is present and has penetrated the sealant, the associated floor, trench, and sump will be removed, placed in a containment module, and disposed of as dangerous waste.

In the event that contaminants have penetrated the sealant, the core holes will be advanced through the concrete to determine the extent of contamination. Should the contamination go completely through the concrete, the core holes will be advanced through the soil. Soil samples will be taken at the surface, at a 1 foot (0.3 meter) depth, and at a 2 foot (0.61 meter) depth. It can be shown that concentrations of inorganic constituents added to the soil by sorption are greatest in the upper few inches (millimeters), and decreases with increased thickness of the soil column. Because of the well known process of sorption (Pendias and Pendias 1984; Routson et al. 1979; Conway 1982; Freeze and Cherry 1979), any contamination remaining in the soil would be the result of equilibrium reactions and/or irreversible sorption. In either case, residual contamination would be concentrated mostly in the uppermost part of the soil column, with rapidly decreasing concentrations downward. Therefore, the uppermost part of the soil column is most likely to contain contamination if contamination is present. Because the potential contamination from the 616 NRDWSF would remain in the upper part of the soil column, a maximum sampling depth of 2 feet (0.61 meter) is adequate.

A precleaned, hand-operated soil auger will be placed at each sampling location, and soil/gravel will be removed to a total depth of 2 feet (0.61 meter). If access to the sampling location is restricted, a small shovel or trowel will be used. Samples from the hole will be placed immediately in a laboratory-prepared sample container to minimize loss of volatiles and will be stored on ice in a cooler at 39 °F ±3.6 °F (4 °C ±2 °C). A description of the procedure to be used for decontaminating the soil auger, as well as all sampling equipment, is located in Appendix 11B. The equipment will be cleaned before use at each sample location.

Excess soil that is removed from each hole will be containerized in a U.S. Department of Transportation-approved container until results of the soil analyses are received. The container will be stored at the 616 NRDWSF until designated according to procedures. Each hole in the floor or pad will be sealed with grout after sampling is completed.

The soil samples will be analyzed for the constituents identified in the core samples. The analyses will follow the protocol outlined in SW-846 (EPA 1986). If contamination is detected, soil will be excavated to the determined depth of contamination. This approach assumes a decreasing concentration with depth, characteristic of a surface spill or leak such as those from the trenches and sumps. A verification sample will be taken after soil removal is complete. This sample will be taken at the surface. Further removal will be performed at 1-foot (0.3 meter) increments until verification samples demonstrate that contamination above background levels has been removed.

Metal gratings over the trenches and sumps will be steam cleaned with low-volume, high-pressure steam in conjunction with a detergent wash. For disposal purposes, the rinsate from the steam cleaning will be collected and analyzed for the dangerous waste stored in the 616 NRDWSF. The metal grates will be wipe sampled to verify that decontamination is adequate. Analyses will proceed according to the protocol outlined in SW-846 (EPA 1986). As with decontamination of other equipment, decontamination will continue until the grate wipe sample analyses show no detectable levels of constituents.

11.1.5.4.3 **Loading Pads and Surrounding Soils.** Although the concrete loading pad at the east end of the storage building is the primary pad used for waste acceptance, both the north and east loading pads will be sampled. Because the loading pads are similar in size and shape, the same sampling scheme will be used for both. The concrete loading areas have been sealed, but because of the potential for contamination, the loading areas will be core sampled. The loading pads and soil immediately surrounding the pads will be sampled at locations randomly selected on a 3.3-foot (1-meter) by 3.3-foot (1-meter) grid. Six random samples will be taken on the north pad and six random samples will be taken on the east pad. This represents a 5 percent coverage of the pads and soil. Sample locations are noted in Figure 11-5.

Concrete cores will be taken as described for the concrete floor. Once the concrete core is cut, the core will be withdrawn and protected from cross-contamination. A laboratory will perform analyses on the core samples in accordance with the procedures defined in Table 11-1. Core samples will be taken to determine whether or not penetration of the sealant by regulated constituents has occurred. The core samples will be analyzed for the constituents historically received at the 616 NRDWSF. After sampling is completed, the holes created by the core sampling will be filled with grout.

The trenches on the loading pads will be cored in the same manner as those in the storage building. One random sample will be taken along with another sample at the deepest part of the trench (Figure 11-4).

If dangerous constituents have penetrated the concrete (as determined by core analyses), the pads and trenches will be removed, placed in a containment module, and disposed of as dangerous waste, based on the results of the designating sample(s). The soil underneath, if necessary, and along the side of the loading pad will be sampled at the surface, at a 1 foot (0.3 meter) depth and at a 2 foot (0.6 meter) depth in the same locations as the initial samples. Soil samples will be placed in sample bottles appropriate for the type of analyses to be performed. Soil samples will be analyzed for the contaminants identified in the core samples. Samples will be analyzed in accordance with protocols outlined in SW-846 (EPA 1986).

If the soil samples are determined to be contaminated, when compared to the soil background levels (Section 11.1.1.2), the soil will be removed from the loading area(s) to the depth of contamination noted in the soil samples. Some soil removal might be necessary along the sides of the loading pads, even if soil under the loading pads is found not to be contaminated. This approach assumes a decreasing concentration of contaminants with depth-characteristic of surface spills. Pending analyses, contaminated soils will be placed in new open-head U.S. Department of Transportation-approved containers. Following soil removal, surface soil sampling will be repeated at the random locations for verification.

The samples will be analyzed for the contaminants reported in the previous sample analyses. Further removal will take place at 1-foot (0.3 meter) increments until verification samples demonstrate that contamination above background levels has been removed. These analyses will provide verification that contamination has been removed to the standards set forth in Section 11.1.1. Analyses will be conducted according to protocols outlined in SW-846 (EPA 1986). Soil containers will be disposed of based on the analytical results of the designating sample(s).

11.1.5.4.4 Tile Field and French Drain. The tile field is used for the disposal of sanitary waste generated at the 616 NRDWSF (Chapter 2.0, Figure 2-5). Although dangerous waste is not handled in areas serviced by the tile field, the tile field will be sampled to verify that no contaminants are present. The tile field will be sampled by taking three equally spaced soil samples across the center line of the tile field at the interface of the native soil and the tile field gravel. Samples will be taken at 1 foot (0.3 meter) and at 2 feet (0.6 meter) depths below the gravel and soil interface. The samples will be analyzed in accordance with SW-846 (EPA 1986). Samples will be compared to background constituent levels. Should any contamination be found, the tile field will be excavated to the depth prescribed by the soil sampling.

The french drain receives effluent from the trenches on the loading pads. The effluent is verified to be free of contamination (Chapter 2.0, Section 2.5.1) before the effluent is released to the french drain. The french drain will be sampled once in the center. As with the tile field, the samples will be completed at the interface of native soil and french drain gravel, at 1 foot (0.3 meter) and at 2 feet (0.6 meter) depths below the gravel and soil interface. Analyses will be conducted in accordance with protocols outlined in SW-846 (EPA 1986). Samples will be compared to background constituent levels. Should any contamination be found, the french drain will be excavated to the depth prescribed by the soil sampling.

11.1.5.5 Sampling Locations. Sampling locations have been selected randomly except where authoritative sampling is warranted in areas of potential contamination. Where appropriate, sections of the storage building have been gridded to facilitate the selection and identification of random sample locations. The use of a random-sampling strategy will ensure that data obtained will be representative of the population from which the samples were taken. Areas of potential contamination were selected for authoritative sampling because of the higher potential for contamination. The number and location of each type of sample is presented in Table 11-2. Random number table is included in Appendix 11A for each area to be sampled. The following sections discuss the sample locations.

11.1.5.5.1 Concrete Floor. The following describes the sampling locations for the concrete cell floors.

Packaging material and handling equipment area--The sampling locations for the packaging and handling equipment area sump are shown in Figure 11-4 (sheet 1). Two locations will be sampled.

Packaging and sampling room--The sampling locations for the packaging and sampling room sump are shown in Figure 11-4 (sheet 1). Two locations will be sampled.

Caustic cell--The sampling locations for the caustic cell trench are shown in Figure 11-4 (sheet 2). Two locations will be sampled.

Oxidizer cell--The sampling locations for the oxidizer cell trench are shown in Figure 11-4 (sheet 2). Two locations will be sampled.

Acid cell--The sampling locations for the acid cell trench are shown in Figure 11-4 (sheet 2). Two locations will be sampled.

Combustible cell--The sampling locations for the combustible cell trench are shown in Figure 11-4 (sheet 2). Two locations will be sampled.

Flammable 1A cell--The sampling locations for the flammable 1A cell trench are shown in Figure 11-4 (sheet 2). Two locations will be sampled.

Flammable 1B cell--The sampling locations for the flammable 1B cell trench are shown in Figure 11-4 (sheet 2). Two locations will be sampled.

Receiving area--The sampling locations for the receiving area trench are shown in Figure 11-4 (sheet 3). Two locations will be sampled.

Walkway between caustic and oxidizer cell--The sampling locations for the walkway trench between the caustic and oxidizer cell are shown in Figure 11-4 (sheet 3). Two locations will be sampled.

Walkway between acid and combustible cell--The sampling locations for the walkway trench between the acid and combustible cell are shown in Figure 11-4 (sheet 3). Two locations will be sampled.

Walkway between flammable 1A and 1B cells--The sampling locations for the walkway trench between the flammable 1A and 1B cell are shown in Figure 11-4 (sheet 3). Two locations will be sampled.

11.1.5.5.2 Loading Pad Trenches. Sampling locations for the loading pad trenches are shown in Figure 11-4 (sheet 3). A total of four locations will be sampled (two on the north pad and two on the east pad).

11.1.5.5.3 Loading Pads and Surrounding Soils. Sampling locations for the loading pads and surrounding soil are shown on Figure 11-5. A total of 12 locations will be sampled (six on the north pad and six on the east pad).

11.1.5.5.4 Tile Field and French Drain. The sample locations for the tile field and french drain are shown on Figure 11-6. Four locations will be sampled (three at the tile field and one at the french drain).

11.1.5.6 Evaluation of Data. After receiving the analytical results, the data will be judged for reliability, reviewed, and summarized to eliminate constituents whose results are below detection limits (making the data more manageable). The data will be statistically evaluated according to procedures described in Appendix 11B. Data from the 616 NRDWSF sampling will be evaluated and summarized by the following methodology:

- Evaluate the quality control of the sample handling and sample analyses to assess the reliability of the data

- Examine the analytical data according to guidance provided in *Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities, Interim Final Guidance* (EPA 1989)

- Prepare summary statistics for constituents

- Test the significance of the location effects of analytical results using the analysis of variance procedure

- Have qualified personnel evaluate and interpret data

- Compare the sample results to the action levels.

11.1.5.7 **Statistical Treatment of Data.** All data collected will be analyzed and tabulated for evaluation using the methods described in SW-846 (EPA 1986). Other guidance documents and statistical references could be used where applicable [e.g., Barth and Mason 1984, and *Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities, Interim Final Guidance* (EPA 1989)]. Laboratory data will be provided to Ecology on completion of sampling and analyses. Data for individual constituents will be summarized and will include the following information:

- Number of less than detection-limit values

- Total number of values

- Mean values

- Standard deviation

- Coefficient of variation

- Method detection limit values

- Quantitation limit values

- Representative method precision

- Minimum value

- Maximum value.

The data will be interpreted by qualified scientists and statisticians. The technical bases for establishing the local background threshold concentrations, the methods by which significant deviation from local background will be determined, and the appropriate sample sizes (i.e., numbers) are being developed for the Hanford Site. Methods such as those identified for the assessment of groundwater data [e.g., the tolerance interval approach to the analysis of variance (EPA 1989)] are being evaluated for application to soil and other media. The local background threshold concentrations, for example, can be based on information such as proportions of the population, mean concentrations, and standard deviations for each constituent of interest. Specific approaches, and the criteria and assumptions implicit in establishing concentration levels (levels that constitute significant deviation from local background or other control levels), as well as the numbers of samples, etc., will be related to Ecology when these factors have been resolved. Data evaluation will be based on statistical criteria and professional judgment as appropriate.

11.1.5.8 Assessment of Data Reliability. Data reliability will be assessed by evaluating the sample handling and analysis quality control according to procedures described in Appendix 11B. Sample handling quality control will be evaluated by reviewing field documentation and results of quality assurance samples to establish that sampling error was minimized. The review will be conducted to verify that decontaminated equipment was used, that cross-contamination was minimized, that samples were preserved properly, and that sample chain of custody was not broken.

Analytical data received from any sampling performed at the 616 NRDWSF will be scrutinized against the quality control report provided by the contractor laboratory to assess the reliability of the results. Both organic and inorganic chemical analytical results will be checked, as follows:

- Inorganic chemical analysis laboratory assessment

  - Holding times are acceptable
  - Contractor's detection limits are below those required by the EPA
  - Laboratory blanks and replicates are within established quality control limits
  - Sample spike recoveries are within quality control limits.

- Organic chemical analysis laboratory assessment

  - Holding times are acceptable
  - Instrument detection limits, blank recoveries, surrogate recoveries, and spike recoveries are within the EPA established quality control limits.

11.1.5.9 Reporting. After completion of the sampling effort, verification documents will be provided for actual sample locations, number of samples, and specific methods used for collection, if different from those provided in this waste sampling and analysis plan. Data received from the laboratory will be reviewed, analyzed, and summarized statistically. The results will be used to provide further closure evaluations.

11.1.5.10 Sampling Equipment, Containers, and Preservation. Sampling equipment, containers, and preservation methods are discussed in the following sections.

11.1.5.10.1 Sampling Equipment. Sampling equipment to be used will be appropriate to the spectrum of media that might be encountered. The media to be sampled will consist of the following:

- Concrete

- Soils--The following are examples of the types of sampling equipment that could be used during the various sampling phases.

- Concrete
  - Coring device
  - Saw for obtaining chip samples
- Soils and gravel
  - Auger
  - Split spoon
  - Trowel
  - Scoop
  - Shovel.

If site conditions permit, an auger and split spoon will be used to collect soil and gravel samples. Otherwise, a trowel, scoop, or shovel will be used. The sampling equipment should be constructed of stainless steel or should have liners constructed of inert materials.

Additional equipment and supplies will be procured as required to perform the necessary sampling. Equipment could include, but not be limited to, the following items:

- Bore or wire brushes
- Stainless-steel mixing bowls
- Sized, heavy-duty plastic bags
- Stainless-steel spatulas, scoops, and spoons
- Adhesive tape
- 100-foot (30-meter) steel tape, 12-foot (3.7-meter) steel tape
- Compass
- Indelible marking pens or pencils
- Hammer and/or sledgehammer
- Ice chests and ice
- Security tape, flagging
- Gloves (of material suitable for anticipated hazards)
- Field radio
- Rags
- Appropriate drawings and maps

- Tags
- Plastic sheeting
- Water containers
- Extra glass and plastic bottles (in case of breakage or contamination)
- Industrial-size shop vacuum
- Teflon sheets.

11.1.5.10.2 Sample Containers and Preservation. Sample containers will be chosen based on compatibility with the samples, resistance to leaking or breakage, ability to seal tightly, and capacity to hold the required volume for an optimum sample. Containers for collecting and sorting samples will be made of high-density plastic or glass appropriate for the constituents to be analyzed. The containers will have tight, screw-type lids with Teflon cap liners for glass bottles.

All samples will be packaged according to the procedure described in Appendix 11B, placed in an ice chest, and cooled to 39 °F $\pm$3.6 °F (4 °C $\pm$2 °C) immediately after collection. A description of the soil and sediment sample containers to be used is located in Appendix 11B. Samples will be transported to the analytical laboratory within 24 hours of collection. All deviations from SW-846 (EPA 1986) protocols, including sample size, will be documented with a justification for the deviation.

11.1.5.11 Sampling Quality Control. The required quality control procedures will be followed to the extent necessary to adequately control sampling activities. The various quality control procedures are described in the following sections.

11.1.5.11.1 Data Quality. To ensure quality data, all of the sampling procedures will be conducted in conformance with procedures described in Appendix 11B. All laboratory analyses will be performed in accordance with standard EPA methods described in the most recent edition of SW-846. The analytical laboratory will submit all analytical and quality assurance and quality control procedures to the contractor for approval before samples are analyzed. The EPA guidelines for reporting accuracy, precision, and practical quantitation limit specified in the analytical methods will be met.

Quality control of sampling will be ensured through the use of field duplicates, equipment blanks, and field blanks. Quality control of records and documentation will be accomplished by following procedures described in Appendix 11B.

Sampling records to be kept on file include field notes, daily memoranda, records of meetings and activities concerning the sampling program, and chain-of-custody records. In addition, quality control will be implemented through the recording of field memoranda and field notes. Before sampling begins, a quality assurance project plan for sampling and analysis at the 616 NRDWSF will prepared.

11.1.5.11.2 **Field Quality Control**. Field quality control will be accomplished through the use of various sampling duplicates and blanks, as described in the following paragraphs.

Field duplicate samples will be taken for concrete and underlying soils. Duplicate samples are two separate samples collected from the same sampling point and placed into separate containers. The duplicates will be used as an indication of the repeatability of the analytical data.

Equipment blanks will serve as a check on sampling device cleanliness. An equipment blank will be composed of distilled water, which will be transported to the site, opened in the field, poured over or through the sample collection device, collected in a sample container, and returned to the laboratory for analysis. These samples will be collected daily.

If appropriate, trip blanks will be used to identify any possible contamination originating from container preparation methods. Trip blanks will consist of pure deionized, distilled water in a clean sample container, which will accompany each batch of containers shipped to the field. Trip blanks will be returned unopened to the laboratory for analysis.

Field blanks will consist of pure deionized, distilled water that is transferred to a sample container at the site and preserved with the reagent specified for the analyses of interest. Field blanks will be used to check for possible contamination originating with the reagent or the sampling environment and will be collected daily.

11.1.5.11.3 **Field Logbook**. The personnel conducting sampling will maintain an official logbook during sampling activities, as described in Appendix 11B. The book will be bound and will have consecutively numbered pages. All information pertinent to the sampling must be recorded in the logbook in a legible fashion. If changes are necessary, changes will be indicated by a single line drawn through the affected text. The individual responsible for the change will initial and date the entry. Each day's activities or separate sampling episodes must be signed. The logbook will be protected, stored in a safe file or other repository, and retained as a permanent record.

The following types of information will be included in the logbook:

- Site map, sketch, drawing, or other definitive site description

- Locations of all sampling points, including reference points and scale

- Sample method

- Date and time of collection

- Collector's name

- Number, type, and volume of samples taken
- Identification number for each sample
- Field observations (weather conditions, temperature, wind, wetness, and appearance of sample, etc.)
- Laboratory of destination
- Signature of recording personnel.

The following items can be included:

- Name and address of field contact
- Type and/or purpose of sampling
- Sample transportation method
- Photographs of site for field conditions and site location verification.

11.1.5.11.4 **Sample Labels**. Labels will be attached securely to each sample to prevent misidentification. Labels will be in the form of adhesive labels or tags and will be affixed to the proper sample containers before or at the time of collection. All information will be completed at the time of collection. Indelible pencil or ink must be used. Each label will contain at least the following information:

- Site contractor
- Collector's name
- Date and time collected
- Sample number.

11.1.5.11.5 **Sample Seals**. Sample seals will be used to prevent and/or detect tampering with samples between the time of collection and the beginning of analysis. Seals will be applied to the sample containers before the containers leave the sample location. The seals will be attached so the seal must be broken to open the container.

11.1.5.11.6 **Chain-of-Custody Records**. To ensure the integrity of the samples from collection through analysis to final disposition, documentation will be used to trace sample possession and handling. This documentation will provide a history of personnel having custody of the sample.

A chain-of-custody record will be completed and will accompany all samples from collection to analysis. Multiple copies will be required, and at least one copy will be maintained by the sampling supervisor. The following information will be included:

- Contractor
- Sample numbers
- Date and time collected
- Sample type
- Number of containers
- Collector's signature
- Signature of person receiving possession
- Inclusive dates of possession
- Condition of samples on receipt.

A description of the chain-of-custody procedure to be used is located in Appendix 11B.

11.1.5.11.7 Sample Analysis Request. The sample analysis request form is designed to accompany the samples to the laboratory and to designate the analyses to be performed on each sample. This form also provides a check to ensure that all samples have been received and that correlation between sample analysis and sample number is finalized and complete. The form includes the following information:

- Contractor
- Company contact
- Collector
- Sample number
- Sample type
- Analysis requested
- Data and time collected
- Laboratory sample custodian.

A description of the soil and sediment sampling procedure and chain-of-custody procedure to be used is located in Appendix 11B.

11.1.5.11.8 Laboratory Receipt and Logging of Sample. In the laboratory, a sample custodian will be assigned to receive the samples. On receipt of a sample, the custodian will inspect the condition of the sample and the sample seal, verify the information on the sample label and seal against that on the chain-of-custody record, assign a laboratory number, log in the sample in the laboratory logbook, and store the sample in a secured sample storage room or cabinet. Missing or damaged samples will be reported immediately.

11.1.5.11.9 Laboratory Quality Control. The contractor laboratory will ensure the integrity and validity of test results through implementation of an internal quality control program. The program will meet the quality control criteria of SW-846 (EPA 1986). A system of reviewing and analyzing the results of these samples will be maintained to detect problems caused by contamination, inadequate calibrations, miscalculations, improper procedures, or other factors. Standard methods will be used and alternative methods that are developed or adapted will be tested and completely documented. All methods and method changes will be approved by a contractor contracts representative.

The quality control procedures for hazardous chemical analyses will include [as appropriate to each analysis and as specified in Section 1.2 of SW-846 (EPA 1986)] evaluation of blanks, random matrix spikes (for 10 percent of the samples), internal standards, surrogates, and standard calibration curves. Spikes will be added in amounts comparable to the amount of analyte present in the sample. The quality control procedures specific to individual methods will be detailed in the laboratory's documented analytical procedures and will be included with each batch of samples analyzed.

11.1.5.11.10 Sample Disposition. At the completion of all analyses, the samples will be returned to the collector. In no case will the samples be retained longer than 3 years unless specifically designated by the cognizant engineer.

11.1.5.11.11 Equipment Decontamination. Extreme care is necessary in field sampling to ensure that there is no cross-contamination of samples by sampling equipment. To prevent this source of contamination, freshly cleaned or disposable sampling tools will be used. When equipment must be reused in the field, it will be cleaned as thoroughly as practical as described in Appendix 11B.

11.1.5.11.12 Sampling Container Decontamination Procedures. Containers will be purchased precleaned from the factory and maintained under strict chain of custody to preserve the integrity of the samples from collection through disposal. After analysis, sample containers will be disposed of.

11.1.5.12 Analytical Procedures. Analyses of all constituents will be performed by the laboratory in accordance with procedures identified in SW-846 (EPA 1986).

11.1.5.13 Contamination Control. Excess sample material will be containerized in a preconditioned 17-H open-headed 55-gallon (208-liter) container. Rinse water also will be containerized. In accordance with WAC 173-303-200(2) and the procedure described in Appendix 11B, the 55-gallon (208-liter) containers will be stored in a designated area at the dangerous waste site until each container is full. When the container is full, the contents will be tested for dangerous waste. If the contents are found to be dangerous, arrangements will be made for proper disposal of the material. The disposal will take place within a 90-day period after a container is full. If dangerous contamination is not found, materials will be laundered or disposed of according to onsite procedures that meet all applicable federal, state, and U.S. Department of Energy regulations. Containers for temporary storage will be properly marked.

11.1.5.14 Decontamination of Equipment Used for Closure. The equipment used during the closure activities will be cleaned three times with a steam cleaner. The rinsate from steam cleaning will be collected, pumped into new bung-type 55-gallon (208-liter) containers, and sampled. The pump will be flushed three times with water, which will be managed as rinsate. Rinsate will be managed in accordance with Section 11.1.4.1.

11.1.5.15 Removal of Contaminated Material and Waste Residues. Waste remaining in the storage building and in the outside storage areas at the commencement of closure activities will be removed. General housekeeping cleanup procedures will be followed to remove any remaining waste residues.

11.1.5.16 Restoration. On removal of waste residues and contaminated structures or soil, the site might require some degree of reclamation. Reclamation would be justified to control dust, erosion, and surface water run-off, and to promote postclosure usage. Site restoration will include backfilling disturbed soil areas with noncontaminated native soil, compaction, grading, and revegetation.

11.1.5.17 Modifications to the Waste Sampling and Analysis Plan. Modification of the sampling plan could be necessary because of unanticipated or changing conditions. Factors adversely influencing sampling efforts can include equipment malfunction or breakdown, improper equipment, and physical barriers to coring equipment. When changes to the planned activity are necessary, the changes will be recorded in the field logbook along with circumstances requiring the action. The field logbook will be reviewed and signed daily by the project manager, as described in Appendix 11B. This procedure will provide an accurate record of changes and will allow sampling to proceed safely while maintaining efficient manpower and equipment use. Any deviation from procedures used during closure will be handled in accordance with the procedure described in Appendix 11B. In addition, any changes to the closure plan will be in accordance with the protocol established in the *Hanford Facility Dangerous Waste Permit Application* (DOE-RL 1991).

11.1.6 Closure of Containers [I-1d(1)]

At closure, all containers will be removed from the 616 NRDWSF. All dangerous waste residue will be removed from the containment system components. Contaminated equipment, floor, loading areas, and soil will be decontaminated or removed. All decontamination equipment and contained rinsate will be tested and if contaminated disposed of as dangerous waste. Sampling and testing will be conducted to ensure that no contamination remains on, in, or around the storage area and containment system.

11.1.7 Closure of Tanks [I-1d(2)]

Operation of the 616 NRDWSF does not involve the storage of dangerous waste in tanks. Therefore, the requirements of WAC 173-303-640 are not applicable to the 616 NRDWSF.

11.1.8 Closure of Waste Piles [I-1d(3)]

Operation of the 616 NRDWSF does not involve the placement of dangerous waste in piles. Therefore, the requirements of WAC 173-303-660 are not applicable to the 616 NRDWSF.

11.1.9 Closure of Surface Impoundments [I-1d(4)]

Operation of the 616 NRDWSF does not involve the placement of dangerous waste in surface impoundments. Therefore, the requirements of WAC 173-303-650 are not applicable to the 616 NRDWSF.

11.1.10 Closure of Incinerators [I-1d(5)]

Operation of the 616 NRDWSF does not involve the incineration of dangerous waste. Therefore, the requirements of WAC 173-303-670 are not applicable to the 616 NRDWSF.

11.1.11 Closure of Land Treatment Facilities [I-1d(6)]

Operation of the 616 NRDWSF does not involve the land treatment of dangerous waste. Therefore, the requirements of WAC 173-303-655 are not applicable to the 616 NRDWSF.

11.1.12 Closure of Disposal Units [I-1e-1e(8)]

The 616 NRDWSF does not contain any waste piles, landfills, or surface impoundments. In addition, the waste or contaminated materials will not remain at the 616 NRDWSF closure site; therefore, WAC 173-303 is not applicable.

11.1.13 Schedule for Closure [I-1f]

A schedule of the closure activities is presented in Figure 11-7. Closure will be completed 180 days after the last shipment of waste is received at the 616 NRDWSF [WAC 173-303-610(4)(b)]. The activities representing the greatest portion of time will be the sampling and decontamination iteration of the floor and the loading areas. At this time, an estimate of 90 days is given for these tasks. This estimate assumes a rapid turnaround time of 10 working days or less for laboratory analyses.

However, it is unknown how many iterations of decontamination will be required or if any will be required at all.

11.1.14 Extension for Closure Time [I-1g]

A petition for extension of closure time must be filed with Ecology if final closure activities at the 616 NRDWSF are expected to exceed 180 days after the final volume of waste is received [WAC 173-303-610(4)(b)]. It is expected that the final closure of the 616 NRDWSF will be completed within the 180-day period, allowed by regulations, after the last shipment of waste from the 616 NRDWSF. Factors such as the number of sampling iterations could impact the closure schedule and could necessitate an extension beyond the 180-day period. In that case, an extension will be requested.

11.1.15 Amendments to Closure Plan

Should changes be required to the approved closure plan, an amended plan will be prepared and submitted to Ecology for approval in accordance with 40 CFR 264.112(c) and WAC 173-303-610(3)(a).

11.1.16 Certification of Closure and Survey Plat

Within 60 days of closure of the 616 NRDWSF Facility, the DOE-RL will submit to Ecology a certification of closure. The certification will be signed by both the DOE-RL and an independent professional engineer registered in the state of Washington. The certification will state that the 616 NRDWSF has been closed in accordance with the approved closure plan. The certification will be submitted by registered mail or an equivalent delivery service. Documentation supporting the independent professional engineer's closure certification will be retained and furnished to Ecology upon request. This documentation will be maintained by the DOE-RL contact (or the successor) identified in Section 11.9 of this closure plan.

11.1.16.1 Closure Certification. The DOE-RL and the independent professional engineer registered in the state of Washington will certify that closure is complete with a document similar to Figure 11-8.

11.1.16.2 Survey Plat. The 616 NRDWSF is planned to be clean closed. Because dangerous waste will not be left in place following the operational period, the requirement for producing a survey plat is not applicable to the 616 NRDWSF.

11.1.17 Notice to Local Land Authority

The 616 NRDWSF is planned to be clean closed. Because dangerous waste will not be left in place following the operational period, the requirement for a notification to the local land authority is not applicable to the 616 NRDWSF.

11.2 POSTCLOSURE PLAN [I-2]

The 616 NRDWSF is planned to be clean closed. Because dangerous waste will not be left in place following the operational period, the requirement for postclosure activities is not applicable to the 616 NRDWSF.

11.3 NOTICE IN DEED [I-3]

The 616 NRDWSF is planned to be clean closed. Because dangerous waste will not be left in place following the operational period, the requirement for a notice in deed is not applicable to the 616 NRDWSF.

11.4 CLOSURE COST ESTIMATE [I-4]

In accordance with 40 CFR 264.140(c) and WAC 173-303-620(1)(c), this estimate is not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator, and this estimate is therefore not applicable to the 616 NRDWSF.

An annual report updating projections of anticipated closure and postclosure costs for the Hanford Facility TSD units having final status will be submitted to Ecology in accordance with WAC 173-303-390 by October 30 (beginning in 1992).

11.5 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE [I-5]

In accordance with 40 CFR 264.140(c) and WAC 173-303-620(1)(c), this section is not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator and this section is therefore not applicable to the 616 NRDWSF.

11.6 POSTCLOSURE COST ESTIMATE [I-6]

In accordance with 40 CFR 264.140(c) and WAC 173-303-620(1)(c), this estimate is not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator, and this section is therefore not applicable to the 616 NRDWSF.

An annual report updating projections of anticipated closure and postclosure costs for the Hanford Facility TSD units having final status will be submitted to Ecology in accordance with WAC 173-303-390 by October 30 (beginning in 1992).

11.7 FINANCIAL ASSURANCE MECHANISM FOR POSTCLOSURE CARE [I-7]

In accordance with 40 CFR 264.140(c) and WAC 173-303-620(1)(c), this section is not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator and this section is therefore not applicable to the 616 NRDWSF.

11.8 LIABILITY REQUIREMENTS [I-8]

In accordance with 40 CFR 264.140(c) and WAC 173-303-620(1)(c), this section is not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator and this section is therefore not applicable to the 616 NRDWSF.

11.9 CLOSURE CONTACTS

The following office (or its successor) is the official contact for the 616 NRDWSF:

~~Environmental Restoration Division~~
U.S. Department of Energy
~~Field Office,~~ Richland Operations Office
P.O. Box 550
Richland, Washington 99352
~~(509) 376-7277~~.

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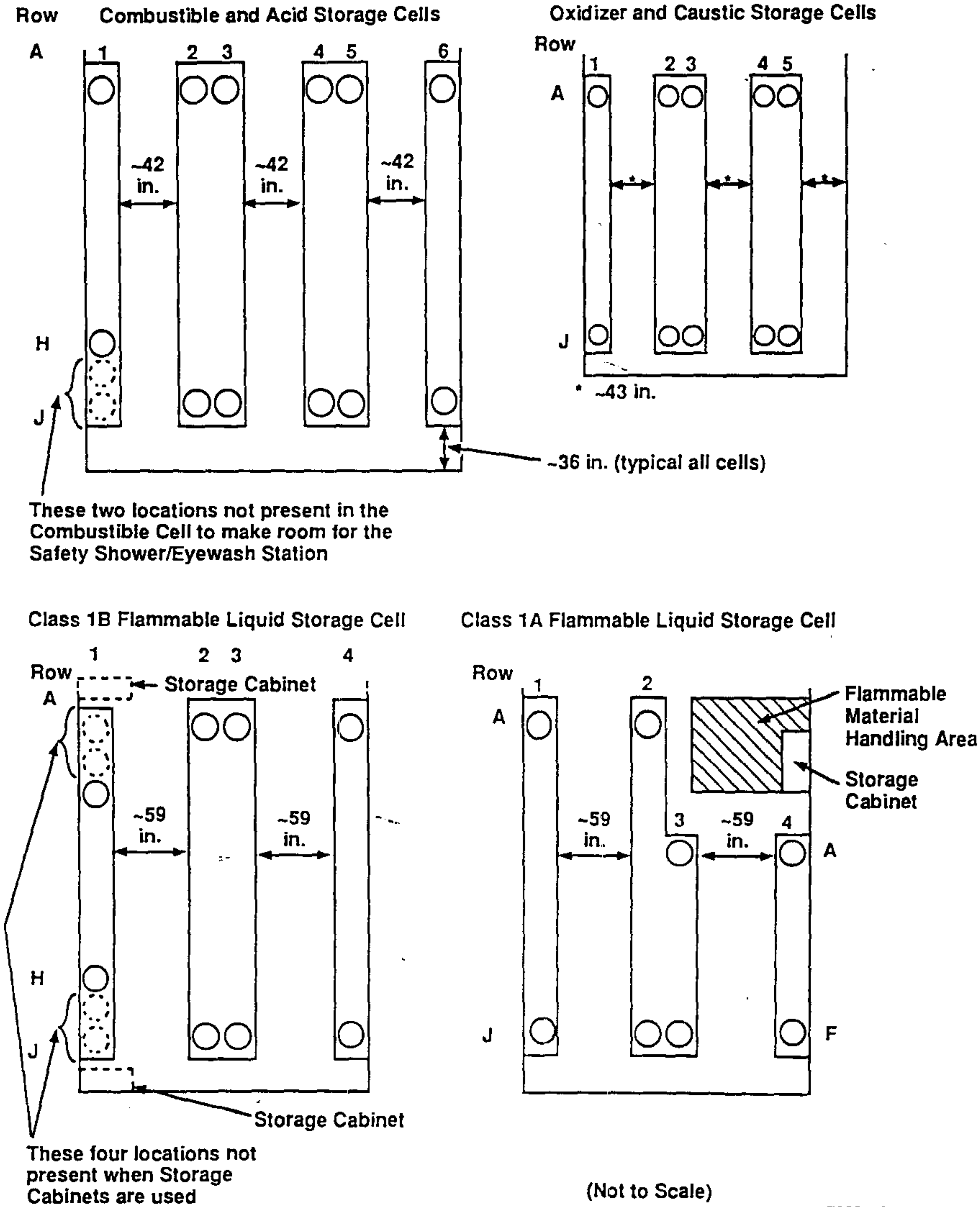

1 Figure 11-1. Configuration and Layout of a Typical Cell.

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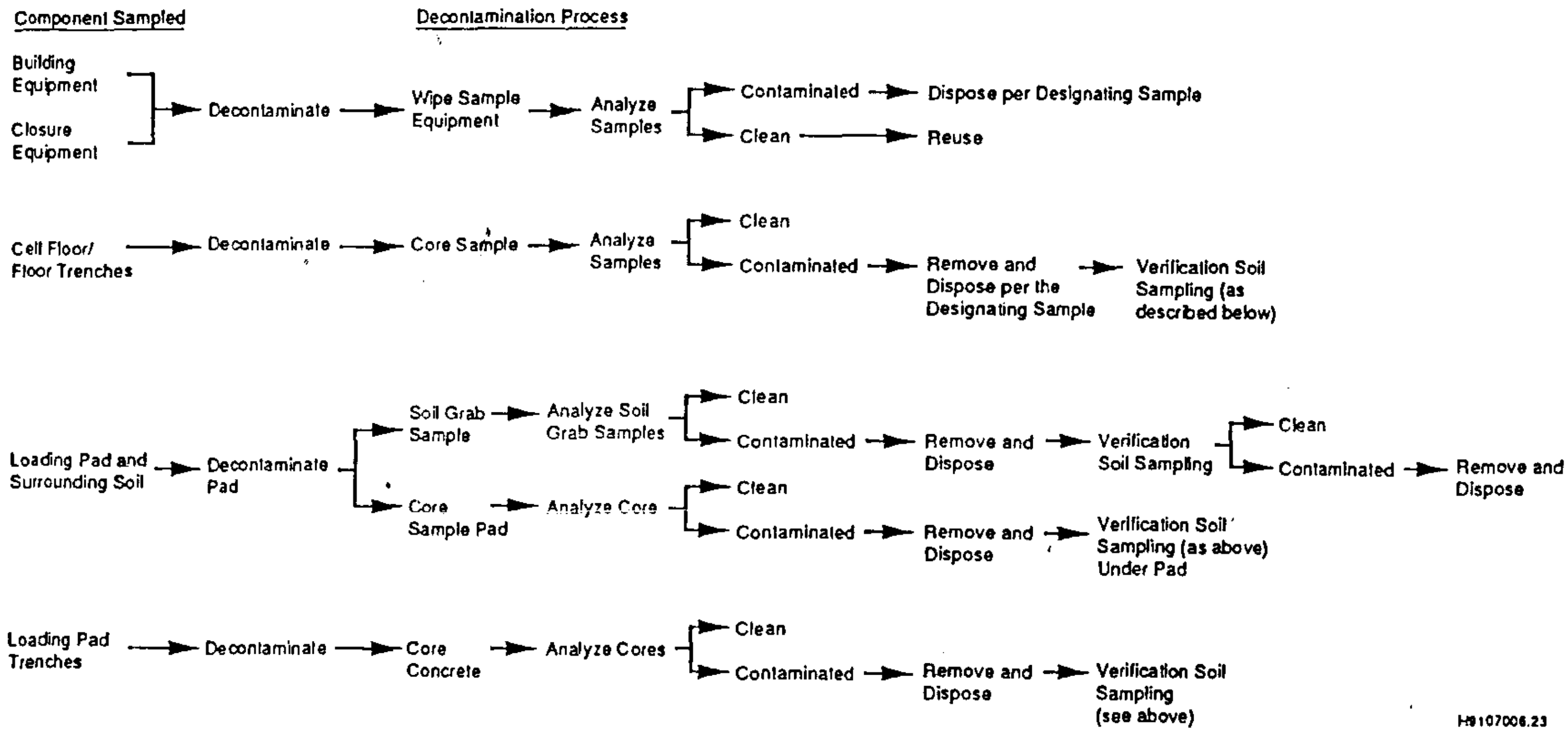

Figure 11-2. Sampling Flow Path.

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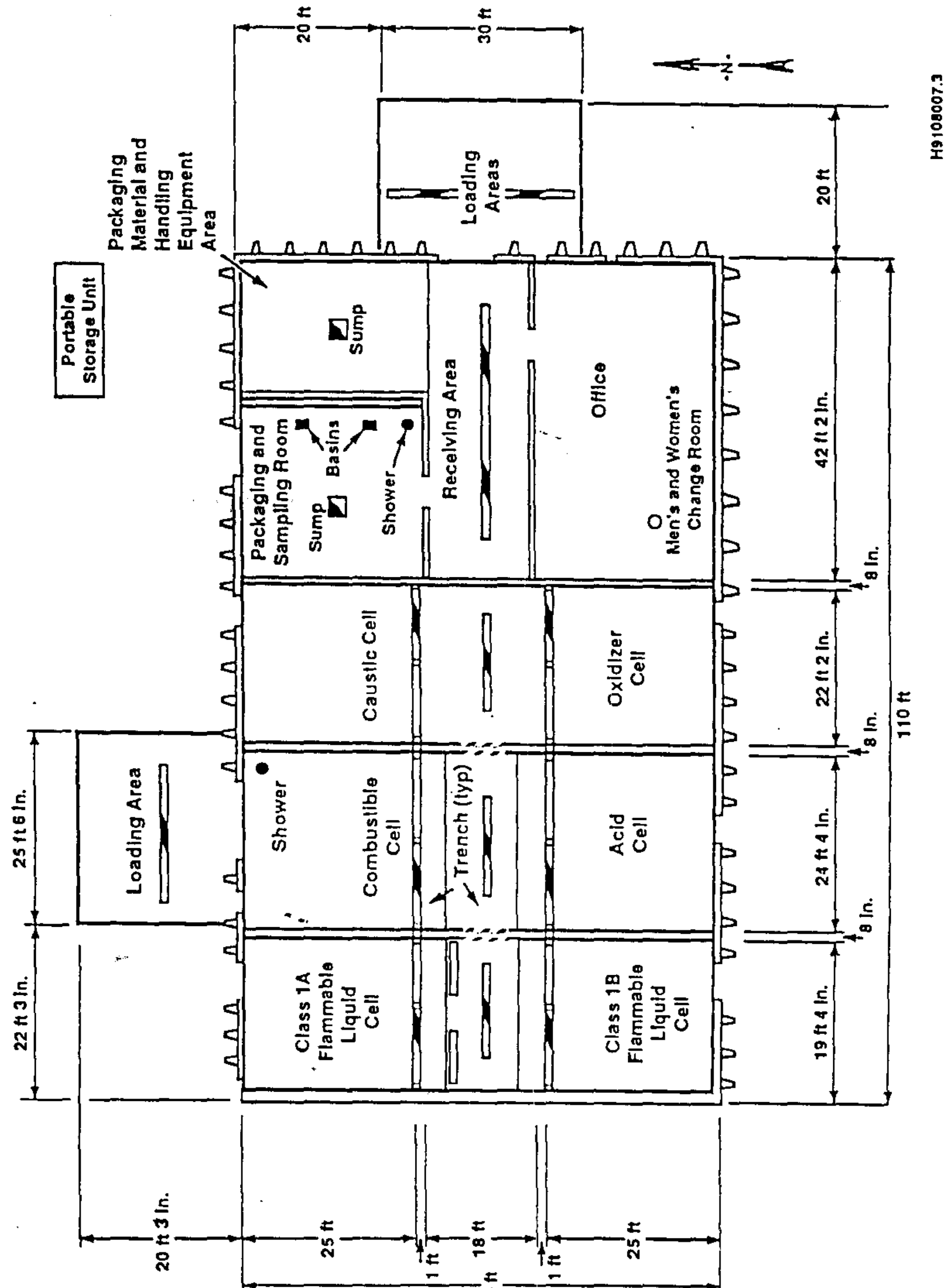

Figure 11-3. Floor Plan of the 616 Nonradioactive Dangerous Waste Storage Facility Showing Locations of the Trenches, Sumps, Water Lines, Basins, and Safety Showers.

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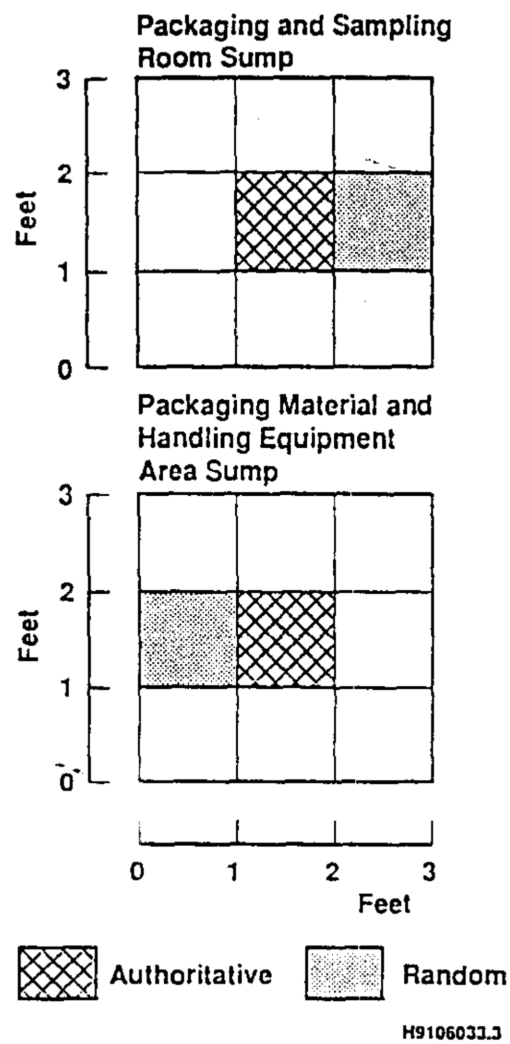

1 Figure 11-4. Trench and Sump Sample Locations. (sheet 1 of 3)

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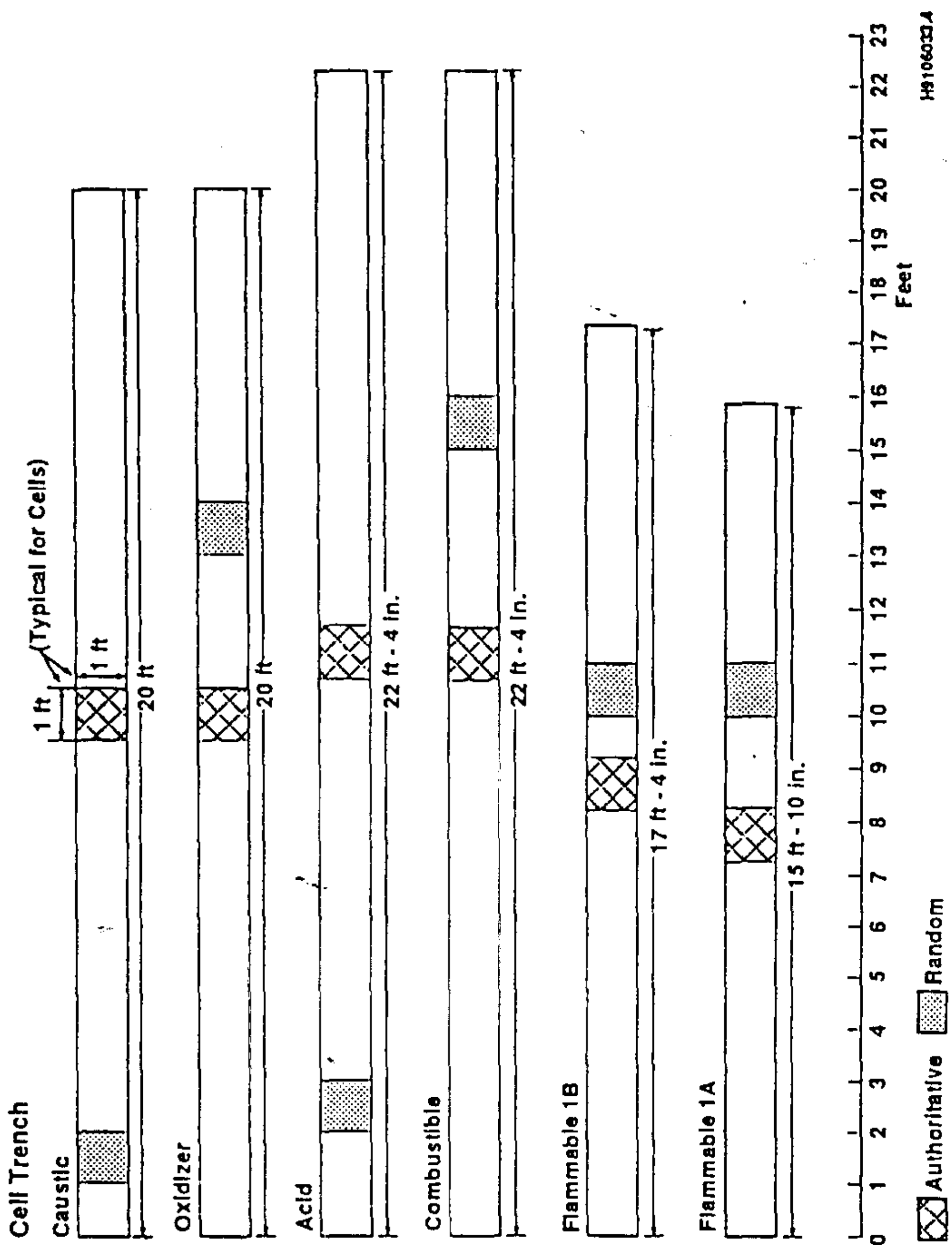

1 Figure 11-4. Trench and Sump Sample Locations. (sheet 2 of 3)

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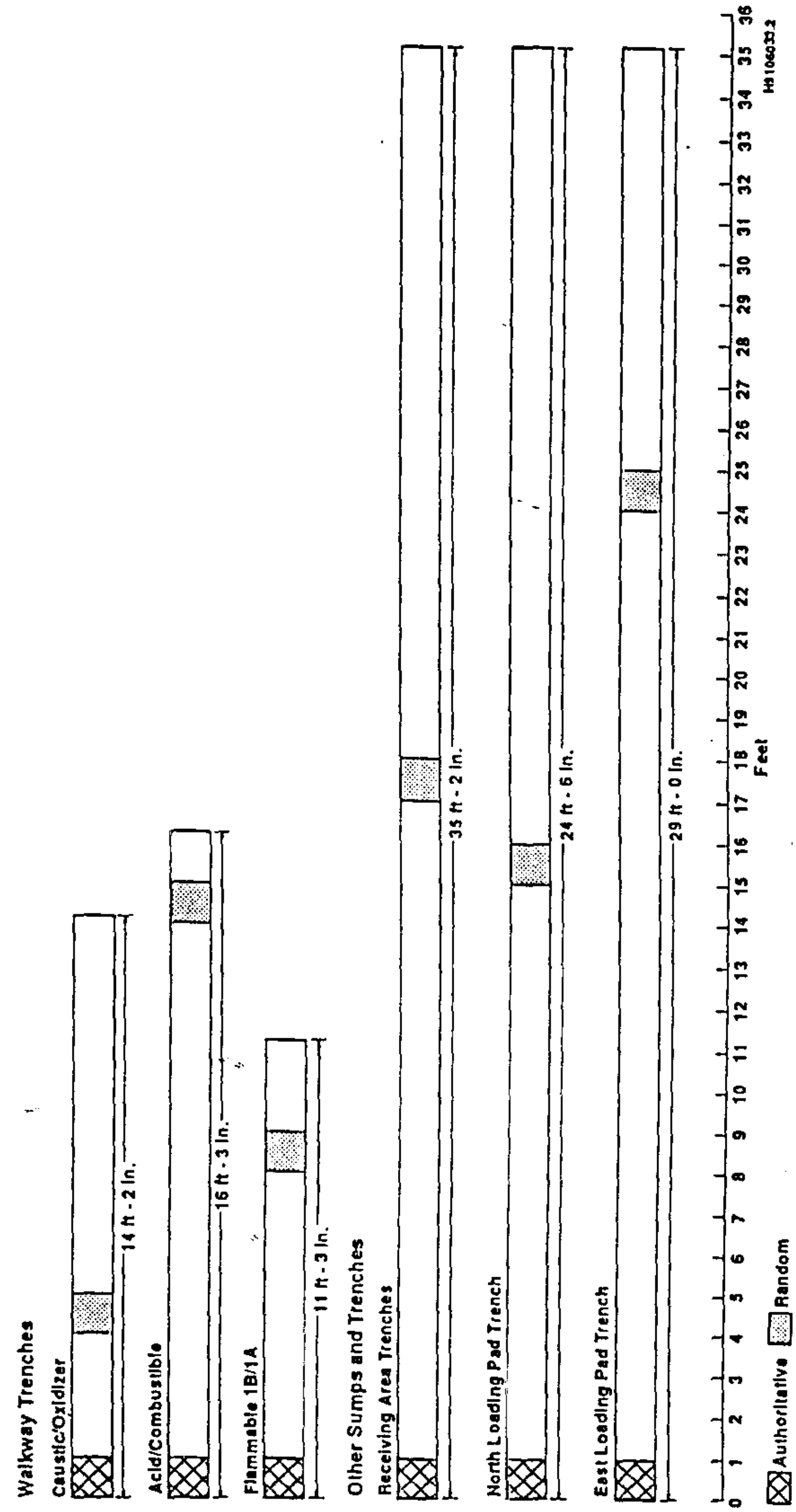

1 Figure 11-4. Trench and Sump Sample Locations. (sheet 3 of 3)

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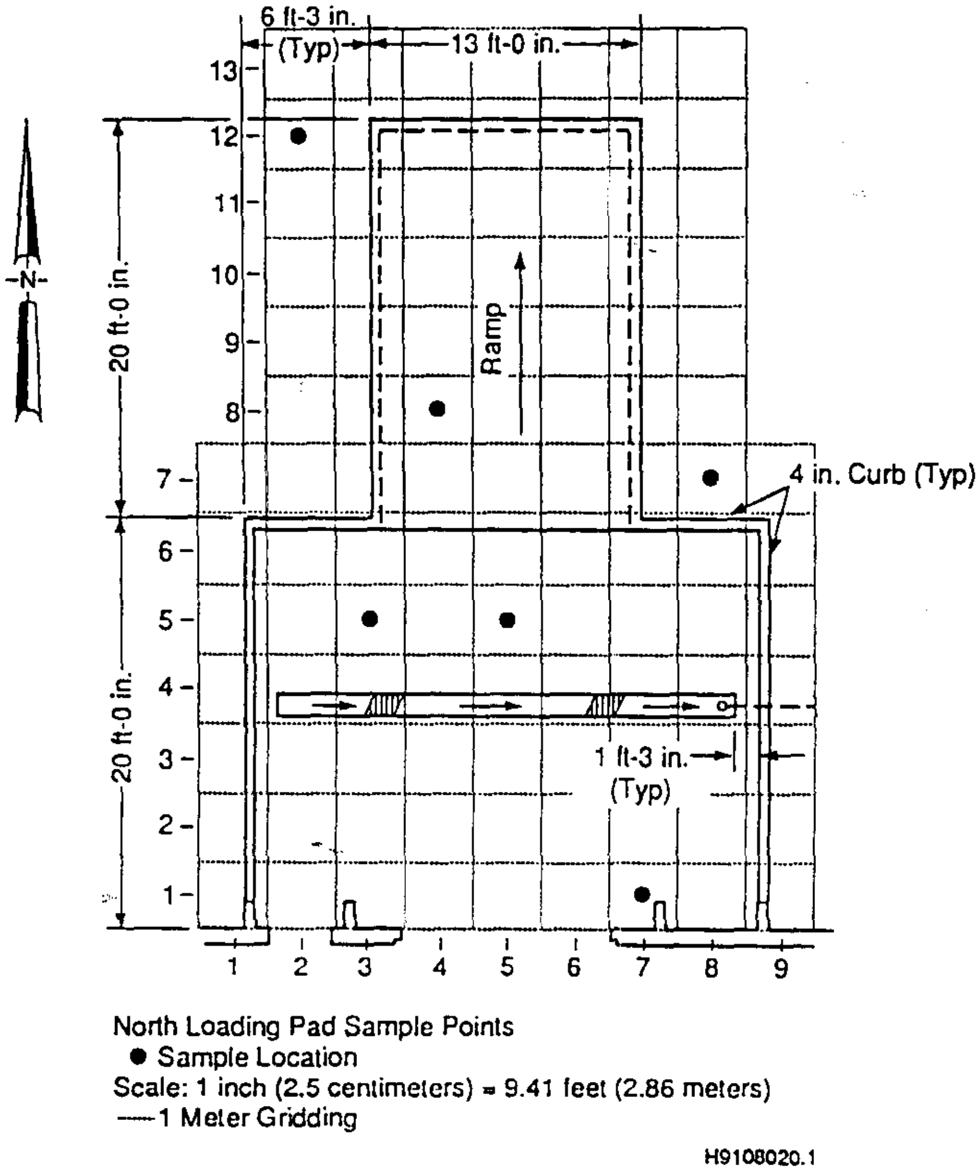

1 Figure 11-5. Loading Pad Sample Locations. (sheet 1 of 2)

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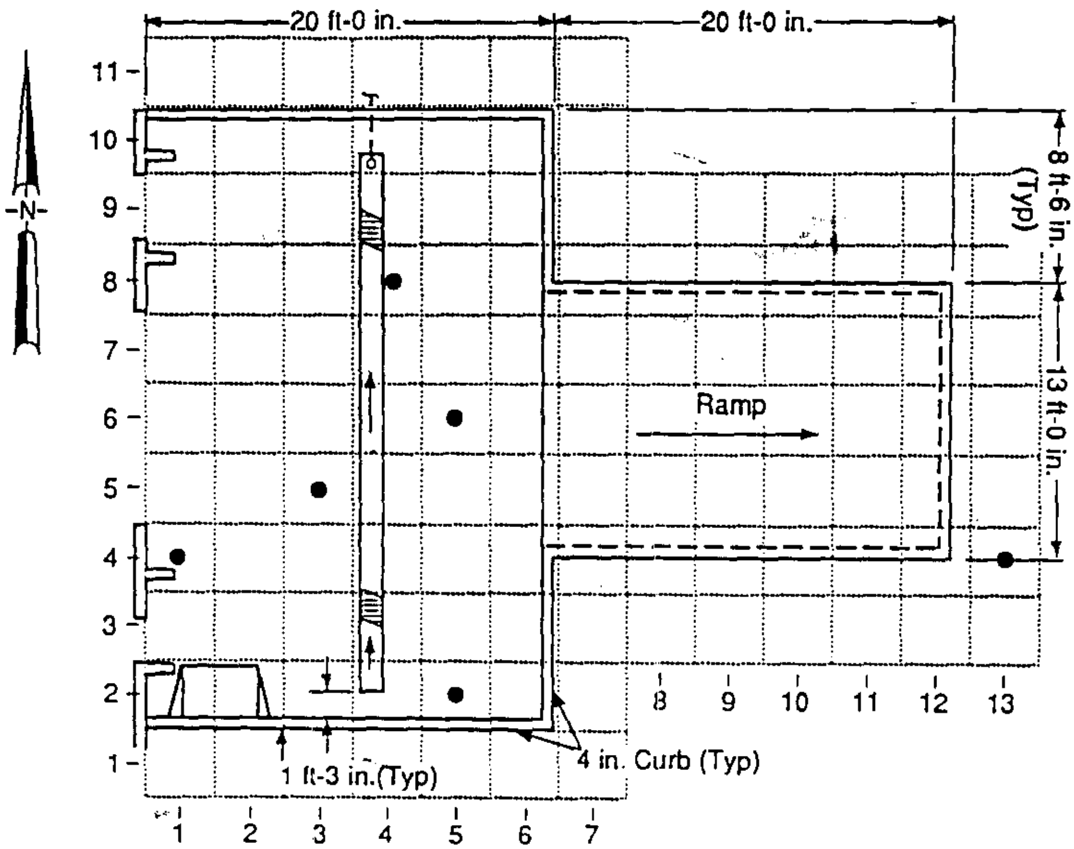

East Loading Pad Sample Points
● Sample Location
Scale: 1 inch (2.5 centimeters) = 9.41 feet (2.86 meters)
—1 Meter Gridding

H9100020.2

1 Figure 11-5. Loading Pad Sample Locations. (sheet 2 of 2)

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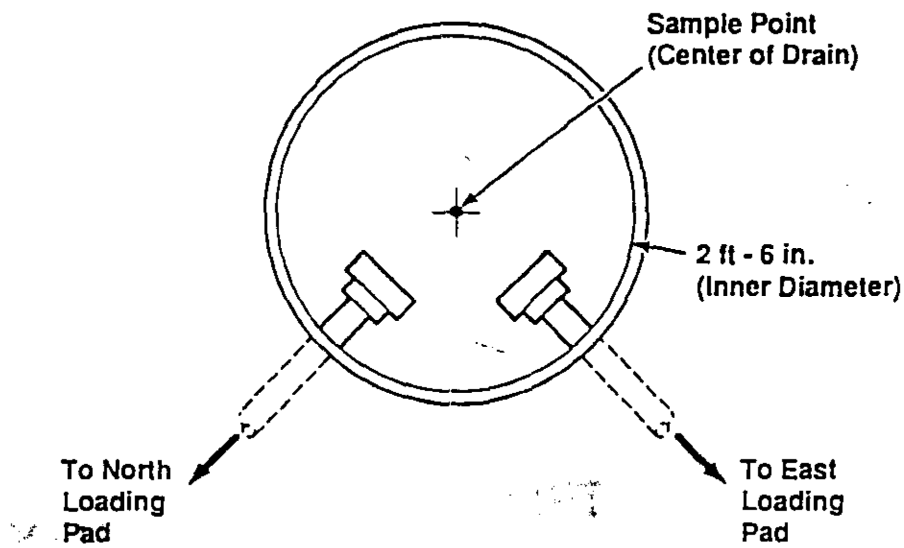
A. French Drain Sample Location



B. Tile Field Sample Location

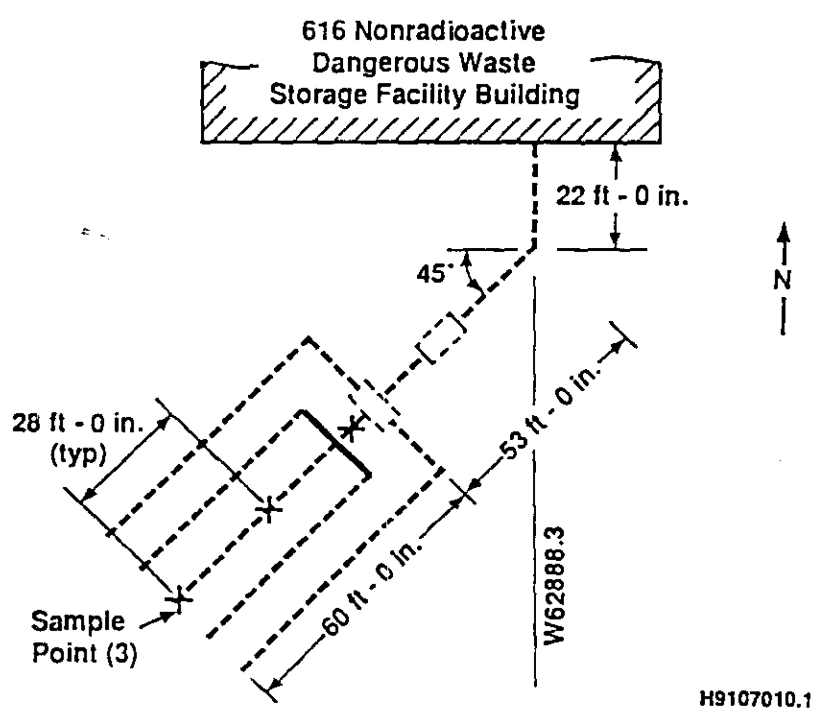


Figure 11-6. Tile Field and French Drain Sample Location.

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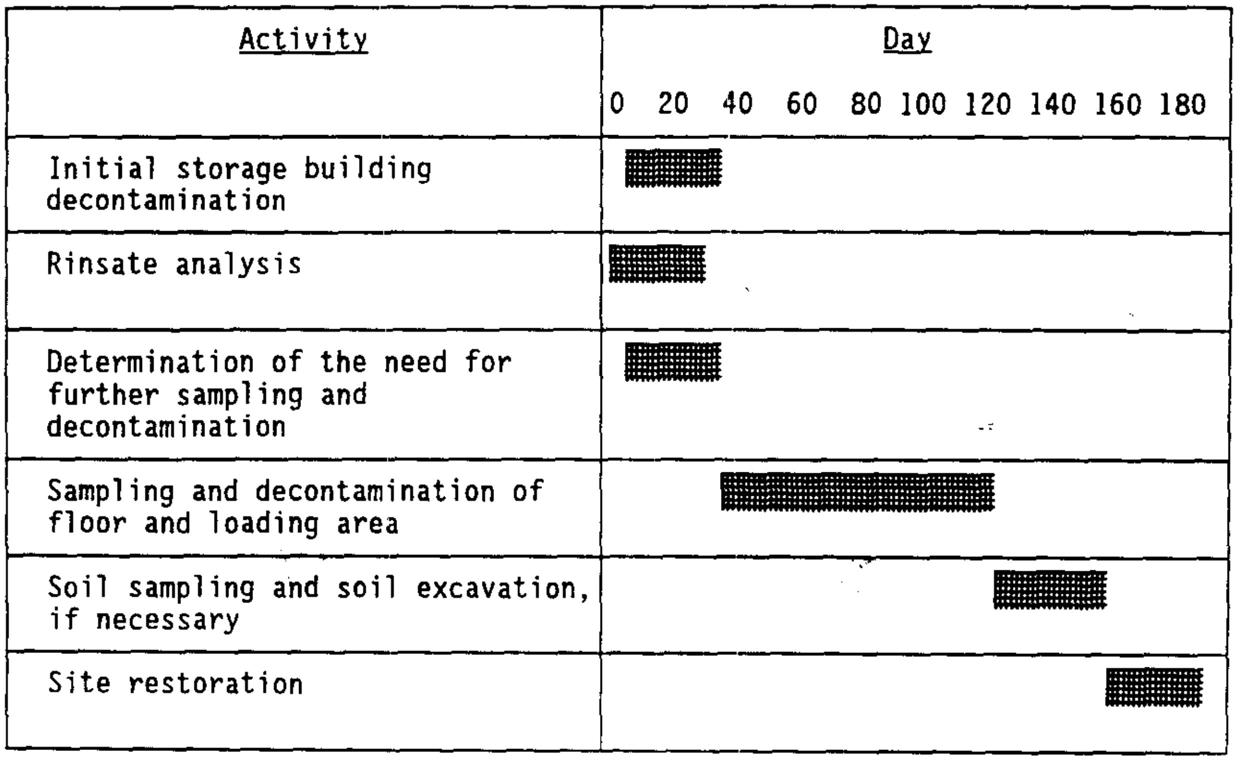

Figure 11-7. Schedule for Closure Activities.

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CLOSURE CERTIFICATION
FOR

____

Hanford Facility
U.S. Department of Energy Field Office, Richland

We, the undersigned, hereby certify that all ______________________ ______________________ closure activities were performed in accordance with the specifications in the approved closure plan.

____
Owner/Operator Signature DOE-RL Representative Date
(Typed Name)

______________________________ P.E.# ______________________________
Signature Independent Registered Professional Engineer Date
(Typed Name and Washington State Professional Engineer License Number)

Figure 11-8. Typical Closure Certification Document.

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Table 11-1. Concrete Analysis.

Possible contaminant	Preparation method	Extract method	Analysis method	Initial action level	Second action level
Inorganic	None	TCLP[a] (3050)	SW 846 6010 AA	Level of quantitation	HB[b]
Organic		Thermal desorption	Gas chromatograph	Level of quantitation	HB[b]

[a]TCLP = toxicity characteristics leaching procedure.
[b]HB = health based.

[Amendment III.1.B.bb.] In addition to the analyses in Table 11-1, the concrete samples shall also be analyzed for all dangerous waste constituents documented to have been spilled at the 616 NRDWSF during its operating life. These analyses shall be performed in accordance with WAC 173-303-110 including the quality assurance and quality control requirements delineated in SW-846. Action levels shall be based on the level of quantitation for each analyte. Final decisions based on health based standards shall be subject to approval or rejection by the Department.

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Table 11-2. 616 Nonradioactive Dangerous Waste Storage Facility Sample Location Summary.

Location	Number of sampling locations
Local background samples	
Soil samples	
Random	5
Sump samples	
Authoritative	2
Random	2
Cell trench samples	
Authoritative	6
Random	6
Walkway trench samples	
Authoritative	3
Random	3
Other trench samples	
Receiving walkway trench	
Authoritative	1
Random	1
North loading pad trench	
Authoritative	1
Random	1
East loading pad trench	
Authoritative	1
Random	1
Tile field	
Authoritative	3
French drain	
Authoritative	1
North loading pad	
Random	6
East loading pad	
Random	6

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ATTACHMENT 8

CHAPTER 12.0

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CONTENTS

TABLE

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12.0 REPORTING AND RECORDKEEPING

This chapter summarizes the 616 NRDWSF reporting and recordkeeping requirements. The reports are submitted to Ecology and/or the EPA as required by applicable regulations.~~, and required records are maintained by the 616 NRDWSF or other Hanford Facility organizations as appropriate. Required reports and records will be accessible through a centralized Hanford Facility Regulatory File index, currently under development. This index, once fully developed, can be used to provide regulatory agency access to the 616 NRDWSF regulatory compliance required by WAC 173-303.~~

~~The Regulatory File is maintained by the Environmental Data Management Center. Each TSD unit will undergo a periodic review by an Environmental Data Management Center Regulatory File Custodian to ensure standardized collection and maintenance of unit specific reports and records (operating records) (DOE-RL 1991b). A general reporting requirement applicable to all dangerous waste treatment, storage, and/or disposal units (notification) is described, as well as reporting and recordkeeping requirements for generators, transporters, and treatment, storage, and/or disposal facilities. Reports and records applicable to the 616 NRDWSF are summarized in Table 12-1.~~

12.1 NOTIFICATION OF DANGEROUS WASTE ACTIVITIES

Regulations require that facilities involved in the generation or transportation of dangerous waste, or the owner or operator of a TSD facility, have a current EPA/State identification number. The Hanford Facility is a single RCRA facility operating under EPA/State Identification Number WA7890008967. The 616 NRDWSF, a storage unit within the Hanford Facility, operates under this same EPA/State identification number.

12.2 GENERATOR REQUIREMENTS

The Hanford Facility complies with the generator reporting and recordkeeping regulations. The 616 NRDWSF generates only minor amounts of waste during the cleanup of container spills or leaks and this waste is handled together with other waste generated on the Hanford Facility. Hanford Facility waste generation records and required reports (e.g., annual reports) are compiled and issued as single records or reports for the entire Hanford Facility; information on waste generated by the 616 NRDWSF is compiled and provided together with other Hanford Facility generator records and reports. The regulations governing recordkeeping and reporting are discussed in the following sections.

12.2.1 Recordkeeping

Generator records maintained by the Hanford Facility include the following:

- Records of waste generated onsite

- Records of waste packaged to be shipped offsite

- A copy of each annual report

- Land disposal restriction records.

Waste generation records are retained as required by 40 CFR 262.40 and WAC 173-303-210.

12.2.2 Reporting

Generator reports required by 40 CFR 262, Subpart D, and WAC 173-303-220 submitted by the Hanford Facility include the annual report, exception reports, and any required additional reports.

The Hanford Facility submits an annual report of waste generation activities to Ecology. The annual report is submitted on the "Generator Annual Dangerous Waste Report--Form 4." All nonradioactive dangerous waste generated at the 616 NRDWSF is included in the annual report.

If a copy of a manifest is not returned within 45 days with the signature of the owner/operator of a permitted offsite TSD facility designated to receive nonradioactive dangerous waste, ~~Solid Waste Management~~ solid waste management prepares and submits an exception report to Ecology. The report includes the following:

- A legible copy of the manifest for which delivery was not confirmed

- A cover letter explaining the efforts to locate the waste and the results of those efforts.

Copies of waste analysis reports or other documentation relating to the composition of dangerous waste shipped from the 616 NRDWSF are retained at the 616 NRDWSF. Documents relating to land disposal restrictions are discussed in Section 12.4.2.2.7.

Any additional reports deemed necessary by the EPA or Ecology will be furnished by the Hanford Facility upon request.

12.3 TRANSPORTER REQUIREMENTS

The Hanford Facility does not transport dangerous waste offsite. Transporters having their own EPA/State identification numbers are used to transport dangerous waste from the 616 NRDWSF to a permitted offsite TSD facility. Waste transfers onsite, including waste to the 616 NRDWSF, are recorded and tracked in accordance with Hanford Facility procedures (Section 12.4.1.1.1). Therefore, transporter records required by 40 CFR 263.22 and WAC 173-303-260 are not maintained by either the 616 NRDWSF or by the Hanford Facility. Reports such as discharge reports required by 40 CFR 263.30 and WAC 173-303-270 are not applicable.

12.4 TREATMENT, STORAGE, AND/OR DISPOSAL REQUIREMENTS

The reporting and recordkeeping procedures for TSD units are discussed in this section. The TSD reports are described, the operating records and miscellaneous support records contents are described, and plans maintained at the 616 NRDWSF and submitted with this permit application are described.

12.4.1 Reports

This section discusses the reporting requirements of WAC 173-303 and applicable parts of Title 40, Code of Federal Regulations relating to aspects of dangerous waste. The following are included in reporting requirements:

- Waste manifest reports
- Annual reports
- Biennial reports
- Groundwater monitoring reports
- Contingency plan incident reports
- Spills, discharges, and leaks reports
- Closure reports
- Postclosure reports.

Additional details of these reports are provided in the following sections. Copies of these reports are maintained by the 616 NRDWSF or other Hanford Facility organizations as appropriate.

12.4.1.1 Waste Manifest Reports. The waste manifest is the source of two possible reports, the manifest discrepancy report and the unmanifested waste report.

12.4.1.1.1 Manifest Discrepancy. Each nonradioactive dangerous waste transfer to the 616 NRDWSF from generating units must have a waste tracking form for the transfer to be approved (Chapter 2.0, Section 2.8). The onsite waste tracking forms are checked to verify that the forms are properly filled out and that the waste received is identical to the waste described on the manifest. Every effort is made to resolve manifest discrepancies with the generating unit. ~~Because the 616 NRDWSF only receives waste generated onsite, the manifest~~ Manifest discrepancy reports ~~to~~ will be submitted to the EPA and Ecology as required by 40 CFR 264.72 and WAC 173-303-370~~, respectively, are not required~~.

12.4.1.1.2 **Unmanifested Waste**. ~~Because the 616 NRDWSF only receives waste generated onsite, the~~ The unmanifested waste reports ~~to~~ will be submitted to the EPA and Ecology as required by 40 CFR 264.76 and WAC 173-303-390~~, respectively, are not required~~. ~~However, care~~ Care is taken to ensure that any waste transfer is recorded as required in the Hanford Facility waste tracking system and that the waste is accompanied by the appropriate EPA Uniform Hazardous Waste Manifest before the transfer is approved (Chapter 2.0, Section 2.8). No waste is accepted at the 616 NRDWSF without a proper manifest.

12.4.1.2 Annual Report. The state of Washington, pursuant to WAC 173-303-390, requires an annual overall report for each facility that holds an active EPA/State identification number. The report is due to Ecology on March 1 of each year. The report contents for the 616 NRDWSF include the following:

- EPA/State identification number
- Name and address of the Hanford Facility
- Calendar year covered by the report
- Sources of the waste stored at the 616 NRDWSF
- Description and quantity of the waste received at the 616 NRDWSF
- TSD methods
- Certification statement signed by an authorized representative.

The report forms and instructions in the "Treatment, Storage, or Disposal Facility Annual Dangerous Waste Report--Forms 4 and 5" are used for this report.

~~A report updating projections of anticipated closure and postclosure costs for the Hanford Facility is due to Ecology by October 30 (beginning in 1992)~~

12.4.1.3 Biennial Report. The EPA requires, pursuant to 40 CFR 264.75, that an overall report describing each dangerous waste facility activity be submitted on March 1 of each even-numbered year. Ecology has been extended administrative responsibilities for biennial reporting as required by 40 CFR 264.75. A specific biennial report is not prepared and submitted as all reporting requirements are satisfied by submittal of the annual report to Ecology.

12.4.1.4 Groundwater Monitoring Reports. The 616 NRDWSF is not operated as a dangerous waste surface impoundment, waste pile, land treatment unit, or landfill as defined in WAC 173-303-645-(1)(a). Therefore, no groundwater monitoring or reporting is required for this storage unit.

12.4.1.5 Contingency Plan Incident Notifications. The building emergency director~~,~~ and the 616 NRDWSF line management~~, and the contractor's environmental protection organization~~ are responsible for making notifications (Chapter 2.0, Section 2.7.1 and Appendix 7A). Notifications of all emergency situations requiring contingency plan implementation are made as required by 40 CFR 264.56, WAC 173-303-360, and U.S. Department of Energy Order 5000.3A.

In the event of a fire or an explosion, the building emergency director or the 616 NRDWSF line management immediately must notify the Patrol Operations Center by telephone at ~~811~~ 911. All emergency incident calls to the emergency number (~~811~~911) are reported by the Patrol Operations Center to the Hanford Fire Department and the Occurrence Notification Center. In the event of an unplanned release of hazardous or dangerous waste or material, the building emergency director immediately notifies the contractor's environmental protection organization who notifies the DOE-RL and the Occurrence Notification Center. The DOE-RL must be notified by telephone as soon as possible on the day of the incident. The building emergency director or the 616 NRDWSF line management must document the incident on an Occurrence Report to the DOE-RL within 24 hours of categorization of the incident. A copy of the occurrence reports is retained at the 616 NRDWSF as part of the operating record.

[Amendment III.1.B.cc.] If the 616 NRDWSF stops operations in response to a fire, an explosion, or a release that could present a hazard to human health or the environment, the building emergency director notifies DOE-RL, via line management, when the 616 NRDWSF is operational and emergency cleanup is complete.

The DOE-RL is responsible for three types of notifications: an immediate notification, the incident assessment report, and the unit restart notification. Details of these notifications are provided in the following sections.

12.4.1.5.1 Immediate Notification. [Amendment III.1.B.dd.] The Occurrence Notification Center (509-376-2900) immediately will notify affected county emergency management, Ecology, and the individual designated as the on-scene coordinator for the southeastern Washington area of the National Response Center (800-424-8802) if the 616 NRDWSF has had a fire, an explosion, or a release that could threaten human health or the environment.

The report will contain the following information:

- Name and telephone number of reporter
- Name and address of the 616 NRDWSF
- Time and type of incident
- Name and quantity of material(s) involved to the extent known
- Extent of injuries if any

- Possible hazards to human health or the environment outside the 616 NRDWSF

- Actions already taken to mitigate the situation.

12.4.1.5.2 Incident Assessment Report. The DOE-RL will provide a written report to Ecology within 15 days of any incident that requires implementation of the contingency plan. This report will include the following information:

- Name, address, and telephone number of the owner or operator

- Name, address, and telephone number of the TSD unit

- Date, time, and type of incident

- Name and quantity of material(s) involved

- Extent of injuries if any

- Assessment of actual or potential hazards to human health or the environment where this is applicable

- Estimated quantity and disposition of recovered material that resulted from the incident

- Cause of the incident

- Description of corrective action taken to prevent recurrence of the incident.

12.4.1.5.3 Unit Restart Notification. If the 616 NRDWSF stops operations in response to a fire, an explosion, or a release that could present a hazard to human health or the environment, the DOE-RL will notify Ecology and the appropriate local authorities before operations are resumed in the affected area(s) of the storage unit. The notification will indicate that cleanup procedures are complete and that emergency equipment is clean and fit for its intended use.

12.4.1.6 Spills, Discharges, and Leaks Reports. This section discusses the reports prepared as a result of unpermitted spills and discharges to the environment.

In the event of any unplanned release of dangerous waste or hazardous substance, the building emergency director immediately notifies the contractor's environmental protection organization and the Occurrence Notification Center. The Occurrence Notification Center immediately will notify the Hanford Fire Department for appropriate action. The building emergency director documents the incident on an occurrence report. A copy of the occurrence report is retained at the 616 NRDWSF. If an unpermitted spill or discharge exceeds the threshold or reportable quantities, the contractor's environmental protection organization performs the reporting necessary to comply with the EPA and Ecology regulations. The following information is transmitted to the Occurrence Notification Center:

- Name and telephone number of reporter
- Name and address of the 616 NRDWSF
- Time and type of incident
- Name and quantities of material(s) involved to the extent known
- Extent of injuries if any
- Possible hazards to human health or the environment outside the 616 NRDWSF.

The Occurrence Notification Center immediately notifies Ecology of all reportable spills to the environment or the atmosphere in accordance with the requirements of WAC 173-303-145.

12.4.1.7 Closure Reports. Reports regarding the closure of the 616 NRDWSF will be made in accordance with the requirements of 40 CFR 264.115 and .116 and WAC 173-303-610(6) and (9). These reports include notification of beginning of closure and certification of closure.

12.4.1.7.1 Notification of Closure. Ecology will be notified in writing at least 45 days before the date on which closure of the 616 NRDWSF is expected to begin.

12.4.1.7.2 Certification of Closure. Within 60 days of completion of closure of the 616 NRDWSF, a certification signed by the DOE-RL and an independent, registered professional engineer will be submitted to the regulatory authority. The certification will be sent by registered mail or an equivalent delivery service. The certification will state that the 616 NRDWSF was closed in accordance with the approved closure plan. Documentation supporting the independent registered engineer's certification will be supplied upon request of the regulatory authority.

12.4.1.7.3 Survey Plat. The 616 NRDWSF is not a disposal unit. This determination eliminates the requirement for producing a survey plat.

12.4.1.8 Postclosure Reports. Postclosure reports required by 40 CFR 264.119 and .120 and WAC 173-303-610(9), (10), and (11) are not required because the 616 NRDWSF is not a disposal unit.

12.4.2 Recordkeeping Requirements

Records retained by the 616 NRDWSF include plans described in other portions of this permit application, operating records, miscellaneous support records, and records of reports made to the regulatory authority. These records are described in the following sections. ~~Copies of these records will~~

~~be accessible by contacting the Environmental Data Management Center Regulatory File Custodian (509-376-2530).~~

12.4.2.1 Permit Application Plans. Plans described in other portions of this permit application and retained at the 616 NRDWSF include the following:

- Waste analysis plan
- Contingency plan and amendments
- Training plan
- Closure plan
- Inspection plans.

Copies of these plans are included in this permit application. These plans are maintained at the 616 NRDWSF during the life of the storage unit. Modifications or amendments required as a result of changing regulatory or operational requirements will be submitted to the regulatory authority and added to the plans maintained at the 616 NRDWSF as required.

12.4.2.2 Operating Records. Operating records maintained at the 616 NRDWSF include the following:

- Description and the quantity of each dangerous waste received and the method(s) and date(s) of storage at the 616 NRDWSF in accordance with 40 CFR 264 Appendix I and WAC 173-303-380
- Location of each dangerous waste stored within the storage unit and the quantity at each location
- Waste analyses results
- Contingency plan incident reports
- Inspection records
- Waste minimization certification
- Land disposal restriction records.

12.4.2.2.1 Waste Description and Quantity. A description of and the quantity of each dangerous waste handled by the 616 NRDWSF are maintained in the storage unit records. Waste manifest records describing the types and quantities of waste are maintained as part of the operating record.

12.4.2.2.2 Waste Location. The location of each nonradioactive dangerous waste container stored within the 616 NRDWSF is documented and maintained. This record provides a cross-reference to associated manifest numbers.

12.4.2.2.3 Waste Analysis. Waste analysis records maintained at the 616 NRDWSF are generated only when waste resulting from a spill or leak cannot be identified. All other waste analysis is performed by, and records maintained by, onsite generating units (Chapter 3.0). Records of all the information necessary for treating or disposing of the waste are maintained. Analyses are repeated, as necessary, to ensure accuracy and validity.

12.4.2.2.4 Contingency Plan Incident Records. Records documenting the details of any incidents requiring the implementation of the contingency plan (Chapter 7.0), as described in Section 12.4.1.5, are maintained as part of the 616 NRDWSF operating record as required by 40 CFR 264.73 and WAC 173-303-380. In addition to these records, occurrence reports are generated to document incidents. Occurrence reports describe all incidents, including those that are judged too minor to require the implementation of the contingency plan but that are identified as offnormal events, unusual occurrences or emergencies.

12.4.2.2.5 Inspection Records. Records of the 616 NRDWSF general inspections are maintained at the storage unit for at least 5 years from the inspection date. The records include the following:

- The date and time of inspection
- The inspector's printed name and handwritten signature
- Notations of observations
- The date and nature of any repairs or other remedial actions.

12.4.2.2.6 Waste Minimization Certification. Annual certification by the DOE-RL that the 616 NRDWSF is in compliance with the waste minimization requirements is inserted into the operating record as required by 40 CFR 264.73(b)(9).

12.4.2.2.7 Land Disposal Restriction Records. Records related to the generation or treatment and disposal of waste subject to land disposal prohibitions are maintained by the Hanford Facility as required by 40 CFR 264.73(b)(10) and (16). Possible records for waste shipped offsite include the following:

- Waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to 40 CFR 268.5
- Waste placed in land disposal units under a petition granted pursuant to 40 CFR 268.6
- The applicable notice and certification required by 40 CFR 268.7(a) or 40 CFR 268.7(b)
- The demonstration and certification required by 40 CFR 268.8, if applicable, for waste subject to land disposal prohibitions or restriction.

Additional discussion of land disposal records is provided in the following sections.

12.4.2.2.7.1 Date Extension. The 616 NRDWSF will not apply for an extension to the effective date of a land disposal restriction. The onsite generating unit or the permitted offsite TSD facility will apply for an extension if required. If such an extension is approved by the regulatory authority, the generating unit or permitted offsite TSD facility, as appropriate, will provide a copy of the approval indicating the waste subject to the extension. Copies of these records, as well as the quantities and the date of placement (information the permitted offsite TSD facility is requested to provide to the 616 NRDWSF following disposal) for each shipment of waste subject to the date of the extension, will be maintained at the Hanford Facility.

12.4.2.2.7.2 Petition. The 616 NRDWSF will not petition to allow land disposal of a waste subject to a land disposal restriction under 40 CFR 268, Subpart C. The permitted offsite TSD facility will petition to the regulatory authority for a variance to allow disposal of a restricted or prohibited waste if required. If such a petition is approved by the regulatory authority for waste shipped by the 616 NRDWSF, the permitted TSD facility will be requested to provide information related to the petition so that ~~Solid Waste Engineering~~ solid waste management can ensure that the waste shipped complies with the petition. Copies of the records of the petition, as well as the waste quantities and date of placement (information the permitted offsite TSD facility is requested to provide to ~~Solid Waste Engineering~~ solid waste management following disposal) for each waste shipment covered by the petition, will be maintained at the Hanford Facility.

12.4.2.2.7.3 Notice. Solid ~~Waste Engineering~~ waste management determines if waste is subject to land disposal restrictions (Chapter 3.0, Section 3.2). Based on the information provided by the onsite generating unit, ~~Solid Waste Engineering~~ solid waste management prepares the necessary notices and certifications that accompany the associated waste shipments to the permitted offsite TSD facility. The notices and certifications are required for the following cases:

- The waste does not meet the applicable treatment standards

- The waste meets the applicable treatment standards.

Copies of records detailing the waste quantities, and date of placement in the land disposal units (information the permitted offsite TSD facility is requested to provide to ~~Solid Waste Engineering~~ solid waste management following disposal), as well as the appropriate notice, certification, and supporting documentation for each shipment of a waste subject to a land disposal restriction or prohibition, are maintained at the Hanford Facility.

Waste Does Not Meet the Applicable Treatment Standards--If ~~Solid Waste Engineering~~ solid waste management determines that the waste does not meet the applicable treatment standards or exceeds an applicable prohibition level set forth in 40 CFR 268.32 or Section 3004(d) of RCRA, ~~Solid Waste Engineering~~

solid waste management will prepare a notice that is provided to the offsite permitted TSD facility with each shipment of waste. This notice contains the following information:

- The EPA hazardous waste number

- Corresponding treatment standards and all applicable prohibitions set forth in 40 CFR 268.32 or Section 3004(d) of RCRA

- Waste analysis data where available or a statement of the basis of the determination with supporting data.

- The appropriate certification will be signed by an authorized representative.

Solid ~~Waste Engineering~~ waste management submits the notice to the permitted offsite TSD facility with each shipment of waste subject to the restriction or prohibition.

Waste Meets the Applicable Treatment Standards--If ~~Solid Waste Engineering~~ solid waste management determines that the waste meets the applicable treatment standards and can be land disposed without further treatment, ~~Solid Waste Engineering~~ solid waste management will prepare a notice and certification that are provided to the permitted offsite TSD facility with each shipment of waste. The notice contains the following information:

- The EPA hazardous waste number

- Corresponding treatment standards and all applicable prohibitions set forth in 40 CFR 268.32 or Section 3004(d) of RCRA

- Waste analysis data where available or a statement of the basis of determination with supporting data

The appropriate certification will be signed by an authorized representative.

Solid ~~Waste Engineering~~ waste management submits the notice and the certification to the permitted offsite TSD facility with each shipment of the waste subject to the restriction or prohibition.

12.4.2.2.7.4 **Demonstration.** Because the demonstration and certification records required in 40 CFR 268.8 apply to waste that was disposed of before May 8, 1990, demonstration and certification records required by 40 CFR 268.8 are not applicable to the 616 NRDWSF.

12.4.2.3 Miscellaneous Support Records. Miscellaneous support records include the following:

- Training documentation

- Liability coverage documentation

- Closure and postclosure cost estimates

- Report records.

12.4.2.3.1 Training Documentation. The name of each employee and the waste management position held are maintained by the 616 NRDWSF. Training records will document that employees have received the training or have the job experience required for that position. Training records on current employees are kept until closure of the unit. Training records on former employees are kept for 3 years from the date the employee last worked at the 616 NRDWSF. Auditable copies of these records are maintained by the contractor's training organizations. **[Amendment III.1.B.ee.]**

12.4.2.3.2 Liability Coverage Documentation. In accordance with 40 CFR 264.140(c) and WAC 173-303, this documentation is not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator and this documentation is therefore not applicable to the 616 NRDWSF.

12.4.2.3.3 Closure and Postclosure Cost Estimates. In accordance with 40 CFR 264.140(c) and WAC 173-303, these estimates are not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator and these estimates are therefore not applicable to the 616 NRDWSF.

An annual report updating projections of anticipated closure and postclosure costs for ~~the Hanford Facility TSD units having final status~~ final status TSD units will be submitted in accordance with WAC 173-303-390 to Ecology by October 30 ~~(beginning in 1992)~~.

12.4.2.3.4 Report Records. The reports described in Sections 12.1, 12.2.2, and 12.4.1 are contained in records maintained either by the 616 NRDWSF or by other Hanford Facility organizations as noted in Table 12-1. Copies of the reports will be made available on the request of the EPA or Ecology.

Table 12-1. Reports and Records. (sheet 1 of 3)

Item	Storage	
	Retention time	Location
Notification of dangerous waste activities	Life of 616 NRDWSF	Hanford Facility
GENERATOR REPORTS AND RECORDS:		
Annual report	Life of 616 NRDWSF	Hanford Facility
Exception report	Life of 616 NRDWSF	Hanford Facility
Additional reports and records as required (e.g., inspection logs)	Life of 616 NRDWSF	Hanford Facility
<u>Test and Waste Analysis Results</u>:		
Waste generated onsite	Life of 616 NRDWSF	Hanford Facility
Waste packaged for offsite shipment	Life of 616 NRDWSF	Hanford Facility
<u>Waste Manifest Reports and Records</u>:		
Manifests	Life of 616 NRDWSF	Hanford Facility
Manifest discrepancy	Not required	NA
Unmanifested waste	Not required	NA
<u>Land Disposal Restriction Records</u>:		
Extension to an effective date	Life of 616 NRDWSF	Hanford Facility
Petition for a variance	Life of 616 NRDWSF	Hanford Facility
Notice and certification of treatment standards	Life of 616 NRDWSF	Hanford Facility
Demonstration and certification for a temporary extension to the effective date	Life of 616 NRDWSF	Hanford Facility
TRANSPORTER REPORTS AND RECORDS:		
None required	NA	NA

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Table 12-1. Reports and Records. (sheet 2 of 3)

Item	Storage	
	Retention time	Location
TREATMENT, STORAGE, AND/OR DISPOSAL REPORTS AND RECORDS:		
Permit Application Plans:		
Waste analysis plan	Life of 616 NRDWSF	616 NRDWSF
Contingency plan and amendments	Life of 616 NRDWSF	616 NRDWSF
Training plan	Life of 616 NRDWSF	616 NRDWSF
Closure plan	Life of 616 NRDWSF	616 NRDWSF
Postclosure plan	Not required	NA
Inspection plans	Life of 616 NRDWSF	616 NRDWSF
Operating Reports and Records:		
Waste description and quantity	Life of 616 NRDWSF	616 NRDWSF
Waste location	Until closure	616 NRDWSF
Waste analysis data	Life of 616 NRDWSF	Hanford Facility
Inspection records	Varies from 5 years from inspection date to life of 616 NRDWSF	616 NRDWSF
Certification of waste minimization efforts	Life of 616 NRDWSF	616 NRDWSF
Land Disposal Restriction Records:		
Extension to an effective date	Life of 616 NRDWSF	Hanford Facility
Petition for a variance	Life of 616 NRDWSF	Hanford Facility
Notice and certification of treatment standards	Life of 616 NRDWSF	Hanford Facility
Demonstration and certification for a temporary extension to the effective date	Life of 616 NRDWSF	Hanford Facility

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Table 12-1. Reports and Records. (sheet 3 of 3)

Item	Storage	
	Retention time	Location
Waste Manifest Reports and Records:		
Manifests	Until closure	Hanford Facility
Manifest discrepancy	Not required	NA
Unmanifested waste	Not required	NA
Groundwater Monitoring Reports and Records:		
None required	Not required	NA
Contingency Plan Incident Reports and Records:		
Immediate notification-- Occurrence Report	Life of 616 NRDWSF	616 NRDWSF
Assessment report	Life of 616 NRDWSF	616 NRDWSF
616 NRDWSF restart notification	Life of 616 NRDWSF	616 NRDWSF
Spills, Discharges, and Leaks Reports and Records:		
Immediate notification	Life of 616 NRDWSF	616 NRDWSF
Closure Reports and Records:		
Certification of closure	Life of 616 NRDWSF	Hanford Facility
Survey plat	Not required	NA
Closure cost estimates (latest)	Life of 616 NRDWSF	Hanford Facility
Postclosure Reports and Records:		
None required	Not required	NA
Miscellaneous Support Reports and Records:		
Annual report	Life of 616 NRDWSF	Hanford Facility
Biennial report	Not required	NA
Training documentation	Life of 616 NRDWSF	616 NRDWSF
Liability coverage documentation	Not required	NA

NA = not applicable.

Note: At the time of closure, all 616 NRDWSF environmental records will be transferred to a Hanford Facility central retention area.

[Amendment III.1.B.ff.] [a] Hanford Facility means the reports and records are available through the Facility Regulatory File index pursuant to Section 12.0. Until the index is implemented, reports and records will be available at the Facility, but not necessarily at the 616 NRDWSF.

616 NRDWSF means the reports and records are available at the 616 NRDWSF office.

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ATTACHMENT 8

APPENDIX 2A

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APPENDIX 2A

HANFORD SITE MAPS

APPENDIX 2A

HANFORD SITE MAPS

H-6-958	Overall Hanford Facilities
H-13-000014	616 NRDWSF Topographic Map

~~Legal Description of the 616 Nonradioactive Dangerous Waste Storage Facility~~

ATTACHMENT 8

APPENDIX 4B

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APPENDIX 4B

DESIGN DRAWINGS

This appendix contains the following design drawings:

H-6-1552	CIVIL/DWG LIST SITE PLAN, SECTIONS & DETAILS	REV. 3
H-6-1553	ARCHITECTURAL PLAN, ELEVATIONS & SECTIONS	REV. 3
H-6-1554	ARCHITECTURAL PLAN, ELEVATIONS AND DETAILS	REV. 1
H-6-1555	ARCH PLAN, SCHED, DETAILS & SECTIONS	REV. 2
H-6-1556	**[Amendment III.1.B.bbb.]** STRUCTURAL PLAN & SECTIONS ECN 191786 (10/28/93) ECN 176589 (11/16/93) ECN 605639 (01/17/94) ECN 605649 (08/01/94)	REV. 4
H-6-1557	STRUCTURAL ELEVATION, DETAILS & SECTIONS	REV. 1
H-6-1558	STRUCTURAL PLAN, SECTIONS, EL & DETAILS	REV. 1
H-6-1559	HVAC/PIPING PLANS, ELEVATION & SECTIONS (SHEET 1 OF 2)	REV. 2
H-6-1559	HVAC/PIPING PLANS, ELEVATION & SECTIONS (SHEET 2 OF 2)	REV. 0
H-6-1560	ELEC/PIPING EL, SECT, DIAG, SCHED & DET	REV. 2
H-6-1561	ELECTRICAL PLANS, EL, DIAG & DET	REV. 2
H-6-1608	ELECTRICAL RADIO FIRE ALARM PLAN AND DIAGRAM	REV. 1

Note: Revised design drawings currently are being prepared to address the 616 NRDWSF changes. These changes include the following:

- Installation of a blind flange on the sink in the packaging and sampling room
- Installation of locking mechanisms on the drain plugs in the trenches of the loading areas
- Revision of the floor plan to reflect the switching of the acid cell and combustible cell
- General revision of the drawings to address current operation.

On completion, the revised drawings will be included in the permit application.

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ATTACHMENT 8

APPENDIX 11B

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APPENDIX 11B

DESCRIPTION OF PROCEDURES*

11B-1	PROCEDURE FOR PREPARING HEALTH AND SAFETY PLAN
11B-2	PROCEDURE FOR DECONTAMINATING SAMPLING EQUIPMENT
11B-3	PROCEDURE FOR EVALUATING DATA
11B-4	PROCEDURE FOR PACKAGING SAMPLES
11B-5	PROCEDURE FOR SOIL AND SEDIMENT SAMPLE CONTAINERS
11B-6	PROCEDURE FOR ENSURING QUALITY CONTROL OF RECORDS AND DOCUMENTATION
11B-7	PROCEDURE FOR MAINTAINING A FIELD LOGBOOK
11B-8	PROCEDURE FOR CHAIN-OF-CUSTODY
11B-9	PROCEDURE FOR CONTROLLING UNKNOWN SUSPECTED WASTE
11B-10	PROCEDURE FOR DEVIATING FROM PROCEDURES USED DURING CLOSURE

[Amendment III.1.B.hh.] The description of procedures as referenced in Appendix 11B are provided in various sections of *Procedure Description*, January 13, 1991 (Attachment 10). The specific sections of Attachment 10 which are incorporated into the Permit are listed in Table III-1, below, by procedure. No part of Attachment 10 shall supersede any part of Attachment 8.

~~*Procedure descriptions will be provided by November 29, 1991.~~

Number	Procedure	Pages	Sections
11B-1	Preparing Health and Safety Plan	1-4	1.0, 2.0, 3.0, 4.2, 5.0, 5.1, 5.2, 6.0, 6.1, 6.2
11B-2	Decontaminating Sampling Equipment	23-24	1.0, 2.0, 3.0, 5.2, 5.3, 6.1, 6.2, 6.3
11B-3	Evaluating Data	25-26, 28-29	1.0, 2.0, 3.0, 4.7, 5.0
11B-4	Packaging Samples	32-35	1.0, 4.0, 4.1, 5.0, 5.1, 5.2
11B-5	Soil and Sediment Sample Containers	6-11	1.0, 3.0, 4.2, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8
11B-6	Ensuring Quality Control of Records and Documentation	70-77	1.0, 3.0, 4.0, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 6.0, 6.2, 6.3, 6.4, 6.5, 6.6
11B-7	Maintaining a Field Logbook	44-48	1.0, 3.0, 5.0, 5.1, 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.1.5, 6.0, 6.1, 6.2, 7.0
11B-8	Chain-of-Custody	39-43	1.0, 3.0, 4.0, 4.1, 4.2, 4.3, 4.4, 4.5, 5.0, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.7
11B-9	Controlling Unknown Suspected Waste	49-59	1.0, 3.0, 4.1, 4.2, 4.3, 4.4, 4.5, 5.0, 5.1, 5.2, 6.0, 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11
11B-10	Deviating from Procedures Used During Closure	60-64	1.0, 2.0, 4.0, 4.2, 5.0, 5.1, 5.2, 5.2.1, 5.2.2, 5.3

Table III-1: Procedures from Attachment 10.

HANFORD FACILITY CONTINGENCY PLAN

CONTENTS

CONTENTS (continued)

LIST OF FIGURES

LIST OF TABLES

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1.0 GENERAL INFORMATION

The Hanford Facility is defined as a single *Resource Conservation and Recovery Act* (RCRA) *of 1976* facility, identified by the ~~U.S. Environmental Protection Agency~~EPA/State Identification Number WA7890008967, that consists of over 60 treatment, storage, and/or disposal (TSD) units conducting dangerous waste management activities. The Hanford Facility consists of the contiguous portion of the Hanford Site that contains these TSD units and, for the purposes of RCRA, is owned ~~by the U.S. Government~~ and operated by the U.S. Department of ~~Energy, Richland Operations Office~~ Energy (excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to the Washington Public Power Supply System, and lands owned by or leased to the state of Washington).

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2.0 PURPOSE

The Hanford Facility Contingency Plan~~ (Plan)~~, together with each TSD unit-specific contingency plan, meets the WAC 173- 303 requirements for a contingency plan. This ~~Plan~~ plan includes descriptions of responses to a nonradiological hazardous materials spill or release at Hanford Facility locations not covered by TSD unit-specific contingency plans or building emergency plans. This ~~Plan~~ plan includes descriptions of responses for spills or releases as a result of transportation activities, movement of materials, packaging, and storage of hazardous materials.

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3.0 EMERGENCY COORDINATORS

The overall responsibility for implementation of this Hanford Facility Contingency Plan (Plan) lies with the building emergency director (BED) or their designated alternates. The BED has the responsibilities of the Emergency Coordinator as discussed in WAC 173-303-360 and is also the Event Commander for facility related events. A list of all BEDs and alternates is maintained at various locations throughout the Hanford Facility, and these individuals can be reached 24 hours ~~a~~ per day. The BEDs have the authority to commit all necessary resources (both equipment and personnel) to respond to any emergency. Additional responsibilities have been delegated to the Hanford Fire Department personnel who are authorized to act for the BED when the BED is absent. These Hanford Fire Department personnel have the authority to commit all necessary resources (both equipment and personnel) to respond to any emergency.

Response by a BED (or an Emergency Coordinator) usually is obtained through the DOE-RL single point-of-contact* by dialing telephone number ~~811~~ 911 or 373-3800 or 375-2400. The single point-of-contact has been designated as the contact point to mobilize a response to any Hanford Facility emergency. The single point-of-contact is available at all times and has the responsibility to initiate notifications to the BED or alternate to begin responses to emergencies, as well as to dispatch emergency responders (Hanford Fire Department, Hanford Patrol, or ambulance services). All emergency notifications to the BED, building managers, etc., can be made directly from the affected TSD unit or through the single point-of-contact.

The unit-specific DOE-RL technical contact responds to regulatory agency inquiries regarding this Plan. The unit-specific DOE-RL technical contact is accessed by contacting 373-3800 or 375-2400.

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*The single point-of-contact is the Hanford Patrol Operations Center (911 or 373-3800) and/or the Pacific Northwest Laboratory Security Center (375-2400).

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4.0 IMPLEMENTATION OF THE CONTINGENCY PLAN

This ~~Plan~~ contingency plan describes parallel decision flow paths for evaluating and classifying an incident. ~~The U.S. Department of Energy (DOE) Orders~~ DOE orders and WAC 173-303-360 require incident classification. The definition of emergencies according to DOE ~~Orders~~ orders differs from the definition contained in WAC 173-303. Because of this, a dual incident classification decision path is necessary to meet both DOE ~~Orders~~ order and WAC 173-303 requirements. Incident classification according to DOE ~~Orders~~ orders is described in this ~~Plan~~ contingency plan for completeness only. ~~The DOE Orders~~ DOE orders will not be used to evaluate whether an incident requires implementation of a contingency plan.

Implementation of a contingency plan will occur when a BED has determined that a release, ~~a~~ fire, or ~~an~~ explosion has occurred at the ~~Hanford Facility that~~ facility which could threaten human health ~~and~~ or the environment. A release is defined in WAC 173-303-040 within the definition of "discharge". An incident requiring evacuation of personnel or the summoning of emergency response units will not necessarily indicate that a contingency plan has been ~~or will be~~ implemented.

Any incident that poses a potential threat to human health ~~and~~ or the environment discovered by TSD unit personnel requires immediate notification of the BED and the single~~,~~ point-of-contact who then notifies the Hanford Fire Department. Personnel may respond, in accordance with the procedures described in TSD unit-specific contingency plans, before the arrival of the BED, as long as such response is within their level of training. The Hanford Fire Department is contacted through the single point-of-contact on all incidents involving dangerous materials or mixed waste.

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5.0 INCIDENT RESPONSE

Incident response procedures have been established for each specific TSD unit. The initial response to any emergency will be to immediately protect the health and safety of persons in the immediate area. Identification of released material is essential to determine appropriate protective actions. Containment, treatment, and disposal assessment will be the secondary responses.

The following sections describe actions for personnel for several different types of incidents, including a generic response, that might occur on the Hanford Facility. Regardless of how an incident is classified, minimum ~~onsite~~ on-site notification requirements exist to ~~ensure that~~ assure the appropriate organizations are contacted and that the incident ~~is classified~~ correctly classified.

5.1 INCIDENT GENERIC RESPONSES

~~Responses made by the discoverer, single point of contact, and the BED are discussed in the following sections. Identification of hazardous materials and dangerous waste and the assessment of hazards also are discussed.~~

5.1.1 Discoverer

1. The discoverer ~~performs the following actions: 1. Immediately notifies~~ makes immediate notifications immediately to potentially affected personnel (including the BED~~, if present,~~ for a TSD unit incident, if on site) of the incident.

2. Immediately notifies the single point-of-contact ~~(811~~ (911* or 375-2400) and provides all known information, if the information can be obtained without jeopardizing personnel safety, including the following:

   - Name(s) of chemical(s) involved and amount(s) spilled, on fire, or otherwise involved, or threatened by, the incident
   - Name and callback telephone number of person reporting the incident
   - Location of incident (identify as closely as possible)
   - Time incident began or was discovered

---

*The DOE-RL and other contractor personnel are trained to notify the Hanford Emergency number (911 from onsite telephones and 375-2400 from 375 prefix telephones) for immediate dispatch of the Hanford Fire Department for fire, ambulance services, hazardous materials/mixed waste response, and for the Hanford Patrol. Hanford Patrol, who operates the 911 number, and Pacific Northwest Laboratory Security, who operates the 375-2400 number, notify other organizations and contractors to ensure appropriate actions are taken.

- Where the materials involved are going or might go, such as into secondary containment, under doors, through air ducts, etc.
- Source and cause, if known, of spill or discharge
- Name(s) of anyone contaminated or injured in connection with the incident
- Any corrective actions in progress
- Anyone else who the discoverer has contacted.

5.1.2 Single Point-of-Contact

~~The single point of contact performs the following actions:~~

1. Initiates notification to the BED, or one of the alternates if the BED cannot be reached immediately, to arrange immediate response to the incident
2. Requests immediate response from the Hanford Fire Department for fire, ambulance service, and/or hazardous material/mixed waste incidents ~~as needed~~
3. Contacts the Hanford Patrol for traffic control and security measures, as needed, based on the report of the discoverer
4. Initiates notification to appropriate management of the spill or release incident
5. Supports the BED in providing further notification and coordination of response activities if needed
6. Activates or requests activation of the appropriate alarm signals (as required) for the affected building or affected 200, 300, ~~400, or 600~~ or 400 Areas, when the BED determines that protective actions are necessary
7. Notifies the emergency response organizations
8. Prompts activation of the affected area emergency control centers (ECC) ~~to activate~~ if requested by the BED or other authorized persons
9. Prompts activation of the DOE-RL Emergency ~~Action and Coordinating~~ Management Team ~~(EACT),~~ (EMT), if necessary, to recommend protective actions for areas outside the Hanford Facility.

5.1.3 Building Emergency Director (or alternate)

~~The BED (or alternate) performs the following actions:~~

1. Sounds appropriate alarms to notify occupants

2. Notifies the single point-of-contact if additional support or an area evacuation is needed

3. Activates the building emergency response organization as necessary

4. Arranges for care of any injured employees

5. Requests the single point-of-contact to activate the ~~appropriate~~ affected ECC, if required. Activation of the ECC should be done whenever technical assistance is required in evaluating a spill, when the emergency might affect neighboring buildings, or when otherwise deemed necessary by the BED.

6. Provides for event notification in accordance with DOE Order 5000.3B and other established Hanford Facility procedures

7. Provides details of the event to appropriate management as the details become available.

5.1.4 Identification of Hazardous Materials and Dangerous Waste and Assessment of Hazards

The BED ensures that trained personnel identify the character, source, amount, and areal extent of the hazardous material or dangerous waste involved in the incident to the extent possible. Identification of waste can be made by visual inspection of involved containers; by sampling; by reference to inventory records, shipping manifests, or waste tracking forms; or by consulting with TSD unit operations personnel. Samples of materials involved in an emergency might be taken by qualified personnel and analyzed as appropriate.

Concurrently, the hazards that the incident poses to human health and the environment must also ~~must~~ be assessed. The assessment must take into consideration the direct, indirect, immediate, and long-term effects of the incident. In addition to the information sources identified ~~previously,~~ above, the hazard assessment should include other sources such as ~~material safety data sheet~~ Material Safety Data Sheet toxicity and health information, and results from any personnel monitoring examinations conducted at medical facilities. These are the types of tools ~~that~~ which will aid in ascertaining the extent ~~to~~ in which human health and the environment ~~is~~ were threatened.

Upon activation, the ECC is available to assist the BED if needed. Possible assistance could include determining the extent of an emergency, identifying the hazards associated with the materials or waste involved in the incident, assisting in response to the incident, or coordinating the mobilization of special equipment or supplies to the incident site.

If assessment of all available information does not yield a positive assessment of the danger posed by the incident, a worst-case condition will be presumed and appropriate protective actions will be initiated. The BED is responsible to initiate any protective actions.

5.1.5 Incident Classification

After the assessment has been completed in Section 5.1.4, the incident should be ready for classification. If not, the BED ~~will~~ shall take whatever means are necessary to obtain the information to complete the classification. The BED must classify the incident according to the DOE ~~Order~~ order and contingency plan implementation criteria in this section.

1. DOE Order Incident Classification

   There are three categories of incidents on the Hanford Facility: offnormal event, unusual occurrence, and emergency as described in DOE Orders. Incidents are categorized based on degradation of TSD-unit safety systems and impact to other TSD units, employees, structures, public safety, and the environment. Incidents categorized as offnormal events and unusual occurrences are communicated as described in Section 9.0. Incidents categorized as an emergency are further classified into one of three emergency classes as required by DOE ~~Orders.~~ orders. Incidents categorized as emergencies will prompt automatic activation of the appropriate ECCs.

2. WAC 173-303 Incident Classification

   ~~If~~ Based upon the evaluation and hazard assessment in Section 5.1.4, the BED ~~determines~~ may determine that the incident ~~meets the criteria for~~ is classified as a release, ~~a~~ fire, or ~~an~~ explosion that threatens human health ~~and the environment, the BED notifies the ECC (if activated) or the Occurrence Notification Center (ONC) for notification~~ or the environment. When this occurs, the BED must report his assessment to the ECC, if activated, or to the ONC for dissemination to local authorities for ~~evaluation and/or action.~~ evacuation of local areas, if applicable. In addition, the BED, with assistance from the ONC and environmental compliance/protection personnel, must immediately (within 2 hours) notify Ecology, and either the government official designated as the on-scene coordinator, or the National Response Center. The information included in the assessment report to these agencies is described in Section 9.0.

5.1.6 Protective Actions

~~Evacuation and take cover alarms and procedures are discussed as follows:~~

1. Evacuation (**Signal: Steady siren**). Each TSD unit has a building emergency procedure~~s~~ that includes an evacuation plan identifying emergency signals and staging area location~~s~~. In the event a ~~Hanford~~ Facility-wide evacuation is required, TSD unit personnel evacuate to their designated staging area, are accounted for, and receive directions on routes to take to safely evacuate the area. If the primary route is blocked by the emergency, personnel use alternate evacuation routes determined at the time of the event.

   Evacuation routes for the Hanford Facility are shown on Figure 1. Specific routes will be determined at the time of the event based on event magnitude, location, and meteorology.

2. Take Cover (**Signal: Wavering siren**). In the event of a take cover alarm, personnel ~~should go inside the nearest building, or~~ remain inside, close all exterior doors, and ~~regulate ventilation to meet building specific requirements.~~ turn off all intake ventilation. Personnel secure all waste and classified documents.

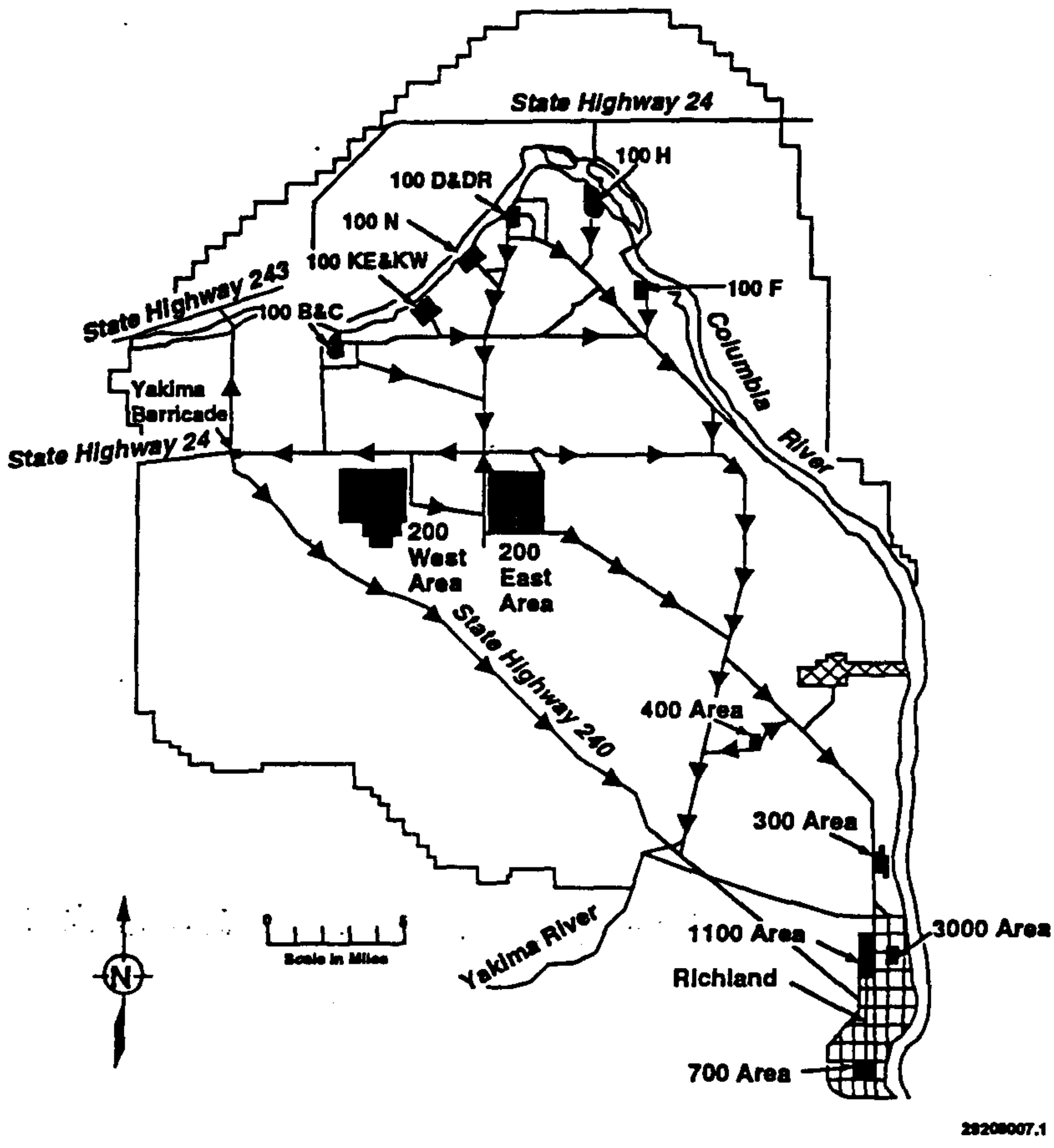

Figure 1. Hanford Facility Evacuation Routes.

5.2 RESPONSE TO MINOR SPILLS OR RELEASES

(Signal: None) The TSD unit personnel generally perform immediate cleanup of minor spills or releases using sorbents and emergency equipment. Personnel detecting such spills or releases contact the single point-of-contact to notify of the detection of such ~~spills or releases~~ release and to ensure notification of the BED and the Hanford Fire Department. Responses to spills or releases occurring within individual storage cells, structures, modules, etc., during routine handling and storage are contained in TSD unit-specific contingency plans. Response to minor spills generally does not require the implementation of the contingency plan.

A spill or release of hazardous material or dangerous waste is considered 'minor' if all of the following are true:

- The spill does not threaten the health and safety of ~~personnel at the TSD unit,~~ occupants of the building, i.e., an evacuation is not necessary
- The spill is small in size ~~(generally less than half of the immediately dangerous to life and health quantities identified in material safety data sheets)~~
- The composition of the material or waste is known or can be quickly determined from label, manifest, material safety data sheets, or disposal request information.

If one or more of the foregoing conditions are not met, responses are performed as outlined in Section 5.3. Notification of the spill ~~or release is made~~ takes place as outlined in Section 5.1.

5.3 MAJOR DANGEROUS WASTE AND/OR MIXED WASTE SPILL OR MATERIAL RELEASE

(Signal: None) The following actions are taken in the event of a major release.

5.3.1 Discoverer

The discover performs the following:

1. If within the TSD unit, ~~notifies~~ notify personnel (including BED) of discovery of spill or release by sounding the appropriate alarm, using the public address (PA) system, etc.
2. Initiate~~s~~ notifications to the Hanford Fire Department (and BED if necessary) by contacting the single-point~~-of-~~ contact and provide~~s~~ all known information, in accordance with Section 5.1.
3. Takes action to contain and/or to stop the spill if all of the following are true:

- The identity of the substance(s) involved is known

- Appropriate protective equipment and control/cleanup supplies are readily available

~~• Action(s) can be performed~~ • Discoverer can safely perform the action(s) without assistance, or assistance is readily available from other trained TSD unit personnel.

If any of the above conditions are not met, or there is any doubt, the discoverer evacuates the area and remains outside, upwind of the TSD unit, pending the arrival of the BED. The discoverer remains available for consultation with the BED, Hanford Fire Department, or other emergency response personnel.

5.3.2 Single Point-of-Contact

The single point-of-contact performs the following:

1. Notifies the Hanford Fire Department and relays information received from the event scene

2. Initiates notification to the BED if ~~the BED is~~ not at the TSD unit

3. Remains available to support further notification and response activities if needed.

5.3.3 Building Emergency Director

The BED performs or arranges for the following:

1. Proceeds directly to the TSD unit to coordinate further activity and to establish a command post at a safe location

2. Obtains all available information pertaining to the incident and determines if the incident requires implementation of the contingency plan

3. Determines need for assistance from agencies listed in Section 8.0 and arranges for their mobilization and response through the single point-of-contact

4. Initiates the appropriate alarm, if building or area evacuation is necessary,

5. Arranges for care of any injured persons

6. Requests activation of the affected area ECC via the ~~single point of contact~~ single-point of contact, if a threat to surrounding buildings or structures exists

7. Provides for event notification in accordance with Section 5.1

8. Maintains access control at the incident site by keeping unauthorized personnel and vehicles away from the area. Security personnel can be used to assist in site control if control of the boundary is difficult (e.g., repeated incursions). In determining controlled access areas, considers environmental factors such as wind velocity and direction

9. Arranges for proper remediation of the incident after evaluation

10. Remains available for fire, patrol, and other authorities on the scene and provides all required information

11. Enlists the assistance of alternate BED(s), if around-the-clock work is anticipated

12. Refers media inquiries to the Media Relations/Communications offices of the contractors or ~~the~~ DOE-RL

13. Ensures the use of proper protective equipment, remedial techniques (including ignition source control for flammable spills), and decontamination procedures by all involved personnel, if remediation is performed by TSD unit personnel. Areas of expertise are available in determining necessary equipment or procedures

14. Remains at the scene to oversee activities and to provide information, if remediation is performed by the Hanford Fire Department Hazardous Materials Response Team or other response teams

15. Ensures proper containerization, packaging, and labeling of recovered spill materials and overpacked containers

16. Ensures decontamination (or restocking) and restoration of emergency equipment used in the spill remediation before resuming TSD unit operations

17. Provides required reports after the incident in accordance with Section 9.0.

5.3.4 Hanford Fire Department Response to Major or Unknown Spills

The Hanford Fire Department response to unknown spills is as follows.

1. Initial Hanford Fire Department response includes one engine company, one hazardous materials unit, one ambulance unit, and one battalion commander.

2. The Hanford Fire Department, as the Hazardous Materials Incident Command Agency, establishes command and control of the situation. The first arriving unit assumes incident command and determines location of the command post, and evacuates personnel from a red zone consisting of a minimum of 100 feet (30.5 meters) in all directions. The red zone could be adjusted as deemed necessary by the hazardous materials team leader.

3. The Incident Commander evacuates all personnel within the red zone area.

4. The hazardous materials team leader establishes ~~a~~ yellow zone and decontamination corridor.

5. The hazardous materials team leader assigns fully trained and qualified team members specific tasks~~,~~ i.e.,

Team Safety Officer	Decontamination Team Leader
Entry Team	Resource Leader
Backup Team	Science Leader

6. The hazardous materials team safety leader controls and directs the medical evaluations for personnel working in the red and the yellow zones.

7. Team members performing entry, back up, and decontamination, suit up in level "A" protection.

8. ~~The e~~Entry team members make entry to obtain samples of unknown hazardous material, and observe for other pertinent information.

9. Entry team collects sample and exits area going through decontamination by decontamination team.

10. The hazardous materials sample is analyzed on scene by hazardous materials team personnel using available testing equipment. This testing is to determine hazard group classification~~,~~ i.e., poison, acid, flammable, oxidizer, etc.

11. Once ~~the~~ hazard classification has been identified, ~~the~~ hazardous materials entry team makes re-entry to stabilize and control hazardous material~~s~~ to the point that the emergency no longer exists.

12. The entry team exits the area going through decontamination by ~~the~~ decontamination team.

13. The spill site is turned over to cleanup personnel for cleanup and disposal.

14. The hazardous materials response command is dissolved; all units return to stations.

15. A critique of the hazardous materials incident is held with team members as soon as possible after Hanford Fire Department units have returned to ~~their~~ stations.

5.4 RESPONSE TO FIRE

(Signal: Gong) In the event of a fire, the discoverer activates a fire alarm and calls the single point-of-contact. Automatic initiation of a fire alarm (through the smoke detectors and sprinkler systems) also is possible. The TSD unit personnel are trained in the use of portable fire extinguishers for incipient fires. Personnel use their best judgment whether to fight a fire or to evacuate. Under no circumstances do personnel remain to fight a fire if unusual hazards exist.

The following actions are taken in the event of a fire or explosion.

1. On actuation of the fire alarm, personnel shut down equipment, secure waste~~,~~ (especially mixed waste), and lock up classified documents (or carry the documents with them), ONLY if time permits. The alarm automatically signals the Hanford Fire Department and the Hanford Patrol Operations Center.

2. Personnel leave the area/building by the nearest safe exit and proceed to the designated staging area for accounting.*

3. The single point-of-contact is notified immediately, who in turn initiates notifications to the BED (or alternate) if necessary.

4. The BED proceeds directly to the scene (if not already there).

5. The BED obtains all necessary information pertaining to the incident.

6. Depending on the severity of the event, the BED (or lead ~~TSD unit manager)~~ Facility Manager) contacts the ~~ONC~~ Occurrence Notification Center and requests additional notifications to offsite agencies (e.g., Ecology, local counties, and DOE-Headquarters), informing them as to the extent of the emergency (including estimates of dangerous waste or mixed waste quantities released to the environment) and any actions necessary to protect nearby buildings and/or structures.

7. Depending on ~~the~~ severity, the BED requests activation of the affected area ECC to establish organizations to provide assistance from the DOE-RL, other Hanford Facility contractors, and outside agencies.

8. The Hanford Patrol establishes roadblocks within the area to route traffic away from the emergency scene.

9. Hanford Fire Department medical personnel remove injured personnel to a safe location, apply first aid, and prepare the injured for transport to medical aid stations or to local hospitals in accordance with established memoranda of understanding (MOUs) (copies of the MOUs are maintained by the Hanford Fire Department). Medical personnel are on standby at the fire stations 24 hours ~~a~~ per day.

10. Hanford Fire Department fire fighters extinguish the fire.

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*During a fire alarm condition, all building occupants are required to evacuate unless otherwise stated in their specific building emergency plan.

11. All emergency equipment is cleaned and fit for its intended use following completion of cleanup procedures.

5.5 UNUSUAL, IRRITATING, OR STRONG ODORS

(**Signal: None**) If an unusual, irritating, or strong odor is detected, and the discoverer has reason to believe that the odor might be the result of an uncontrolled release of a toxic or dangerous material, the discoverer performs the following:

- Activates the building evacuation alarm or fire alarm system to evacuate the building
- Notifies the single point-of-contact, the building manager, and cognizant line management.

If the discoverer knows of the source and scope of the release, this information is reported quickly to the BED. Measures are taken to contain the release and ventilate the area, if safe and advisable to do so.

If an unusual odor is detected within the building or structure, and the source of the odor is unknown, the BED considers additional protective actions.

5.6 RESPONSE TO CONTAINER SPILLS OR LEAKS

In addition to the foregoing Plan provisions, the following specific actions could be taken for leaks or spills from containers at TSD units. These actions may be taken only by appropriately trained personnel.

- Container leaks are stopped as soon as possible using appropriate procedures. Appropriate personnel protective equipment is used.
- If it is inadvisable to approach the container, absorbent materials are used, and access is restricted pending notification of the BED and implementation of the Plan.
- Contents of leaking containers could be transferred to appropriate nonleaking containers. Transfer procedures for fire safety are followed for ignitable or reactive waste (e.g., use of nonsparking tools, bonding and grounding of containers, isolation of ignition sources, and use of explosion-proof electrical equipment).
- Overpacked containers are marked and labeled in the same manner as the contents. All containers of spill debris, recovered product, etc., are managed in the same manner as waste containers received from outside the TSD unit. Overpacks in use at the TSD unit are marked with information pertaining to their contents and noted as to whether the container inside the overpack is leaking or is in good condition.

5.7 RESPONSE TO TRANSPORTATION AND/OR PACKAGING INCIDENTS

This section describes the actions taken in the event of an unplanned sudden or nonsudden release of dangerous waste or dangerous waste constituents to air, soil, surface water, or groundwater during onsite transportation activities, or at locations not covered by a unit-specific contingency plan. This includes spills or releases as a result of transportation activities, movement of materials, packaging, and storage of hazardous materials.

The following ~~actions~~ steps are performed by those individuals responding to a hazardous materials transportation incident at the Hanford Facility.

5.7.1 Initial Responder Actions

The initial responder or discoverer of a hazardous materials spill or release resulting from onsite transportation activities initiates the following response actions, if the actions can be performed without jeopardizing personnel safety, as appropriate~~:~~.

- Determines the nature of incident
  - Personnel injuries
  - Hazardous material spill with fire
  - Hazardous material spill without fire.
- Assists injured personnel.
- Initiates notifications to the single point-of-contact by any means available (telephone, radio, passing motorist, etc.) to request assistance from the Hanford Fire Department (Emergency Coordinator for these type of events), Hanford Patrol~~,~~ and medical personnel.
- Remains in a safe location and attempt~~s~~ to isolate the area to prevent inadvertent personnel access.

5.7.2 Event Commander--Outside Treatment, Storage, and/or Disposal Units

~~If the emergency event is located within the responsibility of a BED, the BED will establish event command.~~

The Hanford Fire Department will establish and maintain incident command on arrival at the emergency event. The Incident Commander will perform or coordinate the event command actions for locations not controlled by a BED.

The Event Commander will ensure~~s~~ that the cause of the incident and its possible effects are investigated and evaluated as soon as possible. The Event Commander, with input from the Incident Commander, assesses possible hazards to human health and the environment (considering direct, indirect, immediate, and long-term effects) that might result from the release, fire, or explosion and takes the following actions as appropriate:

- Isolate event from employees:
  - Cordon off access
  - Place apparatus to block roadways
  - Use Hanford Patrol roadblocks
  - Use TSD unit/vehicle ~~public address~~ PA systems
  - Sound appropriate alarms.

- Determine type of hazardous materials involved:
  - Occupancy/location
  - Container shapes
  - Markings and colors
  - Placards and labels
  - Shipping papers
  - Consult reference materials ~~[~~(U.S. Department of Transportation, National Institute of Occupational Safety and Health *Pocket Guide to Chemical* ~~Hazards (NIOSH 1993)]~~ *Hazards*)
  - Unit managers/employees.

- Notify the appropriate manager of the incident and ensure that the incident is reported properly in accordance with Section 9.0 of this Plan

- If the TSD unit stops operations in response to a fire, an explosion, or a release, the BED will monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate

- Coordinate with emergency response organizations to establish a command post, upwind and uphill of the incident:
  - Ensure command post is located so as to minimize the need for relocation
  - Direct incoming response vehicles to a safe staging area
  - Coordinate tasks with other responders
  - Activate required emergency centers
  - Dispatch radiological and nonradiological field teams to help define and locate the plume.

- Ensure that all personnel who enter the area are equipped with proper protective clothing and respiratory protection
  - Rescue should only be attempted when the risks have been evaluated and are considered acceptable acceptable.

- If the risks are unknown, or considered unacceptable, wait for the Hazardous Materials Response Team.

Rescue/evacuation can be performed by trained personnel, other than the Hanford Fire Department, if the victim's location could present an immediate life-threatening situation or further injuries to the victim.

- Complete other actions necessary to effect control of the scene, including but not limited to the following:

  NOTE: The following steps normally are conducted and/or directed by a Hanford Fire Department Hazardous Materials Response Team leader~~:~~.

  - Secure the scene
  - Use absorbents
  - Use covering (blankets, polyethylene, etc.)
  - Overpack
  - Plug/patch
  - Transfer to new container
  - Venting/vapor suppression.

- Initiate other measures as needed, including but not limited to, the following:

  - Place hose streams and unmanned monitors
  - Establish confinement dikes to prevent run-off
  - Perform first aid.

- Obtain additional information:

  - Who is operating the equipment
  - What and how much hazardous material is involved
  - Manufacturer, shipper, receiver
  - Weather conditions.

- Set up resource areas:

  - Command post location
  - Logistics area
  - Triage area
  - Decontamination area (personnel and equipment)
  - Staging area
  - Planning.

- Reevaluate evacuation boundaries and identify containment zones to adequately protect responding personnel

- Take any additional actions to mitigate the incident, possibly ~~including~~ include the following:

  - Cool tanks involved in a fire or exposed to heat to reduce the potential for explosion

  - Remove all available ignition sources

- Divert liquid and run-off water to prevent contamination spread
- Dike and retain liquids from a leak or spill
- Limit property damage as much as possible
- Provide on-scene emergency medical services.

- Document the response to the incident and provide a report to appropriate management
- Conduct a critique, including cause(s), impact(s), and lesson(s) learned from an incident, following the emergency incident and on completion of the emergency response to that incident. The Emergency Coordinator and/or BED ensures that all appropriate parties are aware of, and participate in, decisions on the best course(s) of action to take to prevent or minimize the possibility of future occurrences. ~~Steps are listed in Section 5.9.~~

5.8 DAMAGED, UNACCEPTABLE SHIPMENTS

(Signal: None) When a damaged shipment of hazardous material or dangerous waste arrives at a TSD unit and the shipment is unacceptable for receipt, the damaged shipment should not be moved. The TSD unit personnel instead perform the following steps.

- If the release from ~~the~~ damaged package is a 'minor' spill under the criteria of Section 5.2, the following actions are performed~~:~~.
  - Notify the BED, the Hanford Fire Department, and the single point-of-contact to advise of the situation. The BED responds and assists in the evaluation of, and response to, the incident.
  - Notify the generating unit of the damaged shipment and provide any chemical information necessary to assist in responding to the 'minor' spill.
  - Proceed with remedial action, including overpacking damaged containers, cleanup of spilled material, or other necessary actions to contain the spill.
- Implement the TSD unit contingency plan, if the release does not meet the criteria of a 'minor' spill as noted previously, or the extent of the spill cannot be determined.

5.9 PREVENTION OF RECURRENCE OR SPREAD OF FIRES, EXPLOSIONS, OR RELEASES

The BED, in coordination with emergency response organizations, takes the steps necessary to ensure that a secondary release, fire, or explosion does not occur. The following actions are taken:

- Isolate the area of the initial incident by shutting off power, closing off ventilation systems, etc., to minimize the spread of a release and/or the potential for a fire or explosion
- Inspect containment for leaks, cracks, or other damage
- Inspect for toxic vapor generation
- Remove released material and waste remaining inside of containment structures as soon as possible
- Contain and isolate residual waste material using dikes and adsorbents
- Cover or otherwise stabilize areas where residual released materials remain to prevent migration or spread from wind or precipitation run-off
- Install new structures, systems, or equipment to enable better management of hazardous materials or dangerous waste
- Reactivate adjacent operations in affected areas only after cleanup of residual waste materials is achieved.

6.0 TERMINATION OF EVENT, INCIDENT RECOVERY, AND RESTART OF OPERATIONS

~~Information concerning termination of event, incident recovery, and restart of operations is provided in the following sections.~~

6.1 TERMINATION OF EVENT

It is a function of the BED (Emergency Coordinator) to declare the termination of an event. However, in an event where additional emergency centers are activated only the highest activated level of the emergency organization, in conjunction with the BED, will declare that an event has ended. If the ~~DOE-RL EACT~~ RL-EMT is activated, only the ~~DOE-RL director~~ RL-EMT Emergency Manager officially terminates the event. In all cases, however, the BED or Emergency Coordinator must be consulted before reentry is initiated.

6.2 INCIDENT RECOVERY AND RESTART OF OPERATIONS

A recovery plan is developed when necessary. A recovery plan is needed following an event when further risk could be introduced to personnel, a TSD unit, or the environment through recovery action and/or to maximize the preservation of evidence. If a recovery plan is required, it is reviewed by appropriate personnel and approved before restart. Restart of operations is performed in accordance with the approved plan.

If the contingency plan was implemented, notification must be made to Ecology before operations can ~~be~~ resume~~d~~. Section 9.0 discusses different reports to outside agencies. This notification is in addition to the required reports in Section 9.0. This notification must include ~~assurances~~ that there are no incompatibility issues with the waste and released materials from the incident, and that all the equipment has been cleaned, is fit for its intended use~~,~~ and placed back into service. The notification ~~can~~ may be made via telephone conference. Any additional information that Ecology requests regarding these restart conditions ~~could~~ may be included in the required 15-day report identified in Section ~~9.2.~~ 9.0.

For emergencies not involving activation of the ECC, the BED ensures that conditions are restored to normal before operations are resumed. If the ECC was activated and the emergency phase is complete, a special recovery organization could be appointed at the discretion of the BED to restore conditions to normal. The makeup of this organization depends on the extent of the damage and its effects. The recovery organization will be appointed by the appropriate contractors' emergency director.

6.3 INCOMPATIBLE WASTE

After an event, the BED or the recovery organization ensures that no waste that might be incompatible with the released material is treated, stored, and/or disposed of until cleanup is completed. Cleanup actions are taken by TSD unit operations personnel or other assigned personnel. Actions to be taken might include, but are not limited to, any of the following:

- Neutralization of corrosive spills
- Chemical treatment of reactive materials to reduce hazards
- Overpacking or transfer of contents from leaking containers
- Use of sorbents to contain and/or absorb leaking liquids for containerization and disposal
- Decontamination of solid surfaces impacted by released material, e.g., intact containers, equipment, floors, containment systems, etc.
- Disposal of contaminated porous materials that cannot be decontaminated and any contaminated soil
- Containerization and sampling of recovered materials for classification and determination of proper disposal technique
- Follow up sampling of decontaminated surfaces to determine adequacy of cleanup techniques as appropriate.

Waste from cleanup activities is designated and managed as newly generated waste. A field check for compatibility before storage is performed as necessary. Incompatible ~~waste is~~ wastes are not placed in the same container. Containers of waste are placed in storage areas appropriate for their compatibility class.

If it is determined that incompatibility of waste was a factor in the incident, the BED or the recovery organization ensures that the cause is corrected. Examples would be modification of an incompatibility chart or increased scrutiny of waste from a generating unit when incorrectly designated waste caused or contributed to an incident.

6.4 POST-EMERGENCY EQUIPMENT MAINTENANCE AND DECONTAMINATION

All equipment used during an incident is decontaminated (if practicable) or disposed of as spill debris. Decontaminated equipment is checked for proper operation before storage for subsequent use. Consumables and disposed materials are restocked. Fire extinguishers are recharged or replaced.

The BED ensures that all equipment is cleaned and fit for its intended use before operations are resumed. Depleted stocks of neutralizing and absorbing materials are replenished, self-contained breathing apparatus are cleaned and refilled, ~~and~~ protective clothing are cleaned or disposed of and restocked, etc.

Equipment and personnel decontamination stations are established established considering the following information and techniques.

Items to consider when establishing a decontamination station are as follows:

- Water supplies
- Containment/catch basins and/or systems
- Staff necessary to accomplish proper decontamination
- Protective clothing
- Decontamination supplies (buckets, brushes, soap, chemicals as needed)
- Risk to personnel
- Weather conditions; i.e., severe heat, cold (current and forecasted)
- Toxicity of material
- Porosity of equipment to be decontaminated
- Disposal requirements of decontamination rinse
- Use of controlled zones to maintain contamination control.

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7.0 EMERGENCY EQUIPMENT AND RESOURCES ~~CONTROL CENTERS, EMERGENCY EQUIPMENT, AND EMERGENCY ORGANIZATIONS~~

~~Hanford Facility ECCs, emergency equipment, and emergency organizations are discussed in the following sections.~~

7.1 HANFORD FACILITY EMERGENCY ~~CONTROL~~ CENTERS

The ~~ECCs~~ emergency centers (ECs) are those locations staffed to provide assistance to building emergency organizations in an emergency situation. The ~~ECCs~~ ECs are established to support and to provide overall direction of emergency events occurring at locations within their geographic area of responsibility, within the Hanford Facility. This includes acquisition of and assignment of resources to respond to emergency events. Responsibilities also include personnel protection (employee and public), TSD unit safety, and environmental protection. The establishment of ECCs ensures that notification and communication of emergency conditions are communicated properly.

There are ~~five ECCs~~ several ECs located throughout the Hanford Facility and Hanford Site (Table 1).

7.2 COMMUNICATIONS EQUIPMENT

The Hanford Facility has alarm systems that are monitored by the Hanford Fire Department and the Hanford Patrol Operations Center. The alarm signals that exist at the Hanford Facility are identified in Table 2. The TSD unit operations personnel also ~~can~~ may use telephones, building ~~public address~~ PA systems, portable radios, and cellular telephones to summon assistance.

7.3 FIRE CONTROL EQUIPMENT

Many Hanford Facility buildings are equipped with automatic fire-suppression (sprinkler) systems. Portable fire extinguishers are located in working areas in compliance with National Fire Protection Association safety codes. Each Class ABC extinguisher is capable of suppressing fires involving ordinary combustible materials, flammable liquids, oils, paints, flammable gases, and electrical equipment. All extinguishers comply with the National Fire Code standards for portable extinguishers and are inspected monthly. The inspections are recorded on tags attached to each extinguisher.

7.4 PERSONAL PROTECTIVE EQUIPMENT

The TSD units have safety showers and eyewash stations, located as necessary, for personnel protection. Drainage from these stations is contained. In addition to these stations, portable eyewash equipment is maintained at protective storage areas as necessary. These eyewash/shower stations are inspected regularly.

Protective clothing and respiratory protective equipment are maintained for use during both routine and emergency operations. This equipment is identified in the unit-specific contingency plans.

Table 1. Emergency Control Centers.

Emergency Control Center	Responsibility
Northern Area Emergency Control Center Location: 2750-E, 200 East Area	Geographic area of responsibility: All 100 and 200 Areas plus the 600 Area north of the WYE Barricade bounded by the Columbia River and Highway 240.
300 Area Emergency Control Center Location: 3701-D, 300 Area	Geographic area of responsibility: RCHS, RCHC, RCHN, 1100 and 3000 Areas plus the 600 Area south of the WYE Barricade bounded by the Columbia River and Highway 240.
400 Area Emergency Control Center Location: Fast Flux Test Facility, 400 Area	Geographic area of responsibility: 400 Area.
~~Emergency Management Center~~ ~~Location: 1170 Building~~	~~Area of responsibility: Responsible for the remaining 600 Area not covered by the area ECCs, assisting area ECCs, coordinating the Facility wide response to emergencies, and serving as the focal point for other Hanford Site contractors and DOE RL during emergencies.~~
North Richland Emergency Control Center Location: Pacific Northwest Laboratory Materials Reliability Center Building	Battelle, Pacific Northwest Laboratories operated facilities located in the RCHN area.
DOE-RL Emergency ~~Control~~ Operations Center Location: Federal Building, Richland	Area of responsibility: Responsible for the remaining 600 Area not covered by the area ECCs, assisting area ECCs, coordinating the Facility-wide response to emergencies, serving as the focal point for other Hanford Site contractors and DOE-RL during emergencies and for providing overall direction for all Hanford Facility emergency situations involving the DOE-RL and/or contractor personnel, ensuring direct interface with all offsite agencies for mitigation and protection of offsite populations, facilities, and the environment.

RCHS = Richland South.
RCHC = Richland Central.
RCHN = Richland North.

Table 2. Hanford Facility Alarm Systems.

Signal	Meaning	Response
Crash Alarm Telephones ~~(steady ringing phone)~~ (red telephone)	Emergency message	Lift receiver, do not speak, listen to caller and relay message(s) to building occupants and BED or alternate.
Gong (2 gongs/second)	Fire	Evacuate building. Move upwind. Keep clear of emergency vehicles.
Siren (steady blast)	Area evacuation	Proceed promptly to accountability area. Follow instructions.
Wavering Siren	Take cover	Close all exterior doors, turn off all intake ventilation and notify manager of whereabouts. Request call back for status and monitor portable radios.
Howler (AA-OO-GAH)	Criticality	Immediately run to the nearest exit and move and remain at least 100 feet (30.5 meters) from the building.

7.5 SPILL CONTROL AND CONTAINMENT SUPPLIES

Supplies of absorbent pillows are located in operating areas as necessary. These pillows absorb organic or inorganic materials and have a rated absorption capacity of approximately 0.26 gallon (1 liter) of waste each. Absorbents might be used for barriers to contain liquid spills as well as for absorbent purposes. Diatomaceous earth for absorption of liquid waste spills is available. Neutralizing absorbent is available for response to acid or caustic spills. A supply of empty containers (U.S. Department of Transportation 17E tight head and U.S. Department of Transportation 17H open head) and salvage containers (overpacks) also are maintained~~,~~ as well as brooms, shovels, and miscellaneous spill response supplies.

7.6 HANFORD SITE EMERGENCY ORGANIZATIONS

The Hanford Facility has fire and patrol personnel trained and equipped to respond in emergency situations. The Hanford Fire Department is the Hazardous Materials Incident Command Agency for the Hanford Site and has a Hazardous Materials Response Team that is trained to stabilize and control hazardous materials emergencies. A description of equipment for hazardous materials responses available through the Hazardous Materials Response Team is given in Table 3. Locations of the four fire stations on the Hanford Facility are shown on Figure ~~1.~~ 2.

The Hanford Patrol provides support to the Hanford Fire Department during an incident, including such activities as activation of area crash alarm telephone systems or area sirens (for evacuation or take cover), access control, traffic control, and assistance in emergency notifications.

Table 3. Fire Department Equipment List. (sheet 1 of 3)

Equipment	Description	*Normally Located
Engines 4 Ladders 4 Pumpers	Examples of equipment contained on engines: • 1,500-2,000 gal/min (5,678.1-7,570.8 L/min) pump • 300-500 gal (1,135.6-1,892.7 L) portable tank • Telescoping nozzle • Jaws of Life.	1 at each station
Tankers 6 Each	Examples of equipment contained on tankers and pumpers: • 500 gal/min (1,892.7 L/min) pump • 1,500 gal (5,678.1 L) tank • 6x6 with 2,000 gal (7,570.8 L) porti-tank • Hose, nozzles, fittings, and tools.	1 at Station 1 2 at Station 2 1 at Station 4 2 at Station 3
Water Tenders 1 Each	Examples of equipment contained on water tenders: • 450 gal/min (1,703.4 L/min) pump • 4,500 gal (17,034.3 L) tank • Hose, nozzles, fittings, and tools.	Station 1
Grass Fire Units 4 Each	Examples of equipment contained on grass fire units: • 100 gal/min (378.5 L/min) pump • 250 gal (946.3 L) tank • 4-wheel drive • Hose, nozzles, fittings, and tools.	1 at each station
Ambulances 5 Each	Examples of equipment contained on ambulances: • Life support systems • Medical supplies and emergency response supplies.	1 at Station 1 2 at Station 2 1 at Station 3 1 at Station 4
Command Vehicles 3 Each	Contains communications equipment and protective equipment for commander.	Station 2

Table 3. Fire Department Equipment List. (sheet 2 of 3)

Equipment	Description	*Normally Located
Attack Vehicles 1 Each	Examples of equipment contained on attack vehicles: • 450 lb (204.1 kg) of purple-K • 300 gal (1,1335.6 L) aqueous film-forming foam concentrate • 300 gal (1,135.6 L) of aqueous film-forming foam pre-mix solution • Hose, nozzles, fittings, and tools.	Station 2
Hazardous Materials Vehicle 2 Each	Examples of equipment contained on hazardous materials vehicle: • Protective clothing for Hazardous Materials Response Team • Breathing apparatus for Hazardous Materials Response Team • Diking, plugging, and damming equipment • Detection instruments for Hazardous Materials Response Team • Tools for plugging and repairing leaking containers • Overpack containers for leaking containers • Command module with material safety data sheets, software, and portable meteorological station • Tools and communications devices necessary to provide communications during emergency response activities.	1 at Station 2 1 at Station 3
Metal Fire Response Vehicle 1 Each	Examples of equipment contained on metal fire response vehicle: • Equipment for response to special metals fire • 500 lb (226.8 kg) of extinguishing powder • 1,000 lb (453.6 kg) of carbon microspheroids.	Station 4

Table 3. Fire Department Equipment List. (sheet 3 of 3)

Equipment	Description	*Normally Located
Mobile Air Vehicle 1 Each	Examples of equipment contained on mobile air vehicle: • Mobile air compressor, recharges self-contained breathing apparatus cylinders • Tools and fittings for operation of vehicle and spare cylinders.	Station 4

*The Hanford Fire Department Chief has the authority to direct the placement of Fire Department equipment as needed to control emergency events. The Hanford Fire Department Chief also has the authority to take pro-active action and assign different vehicle locations based on such conditions as fuel moisture content, area fire history, work in progress, or other conditions that could arise.

gal = gallon(s)
gal/min = gallon(s) per minute
kg = kilogram(s)
L = liter(s)
L/min = liter(s) per minute
lb = pound(s)

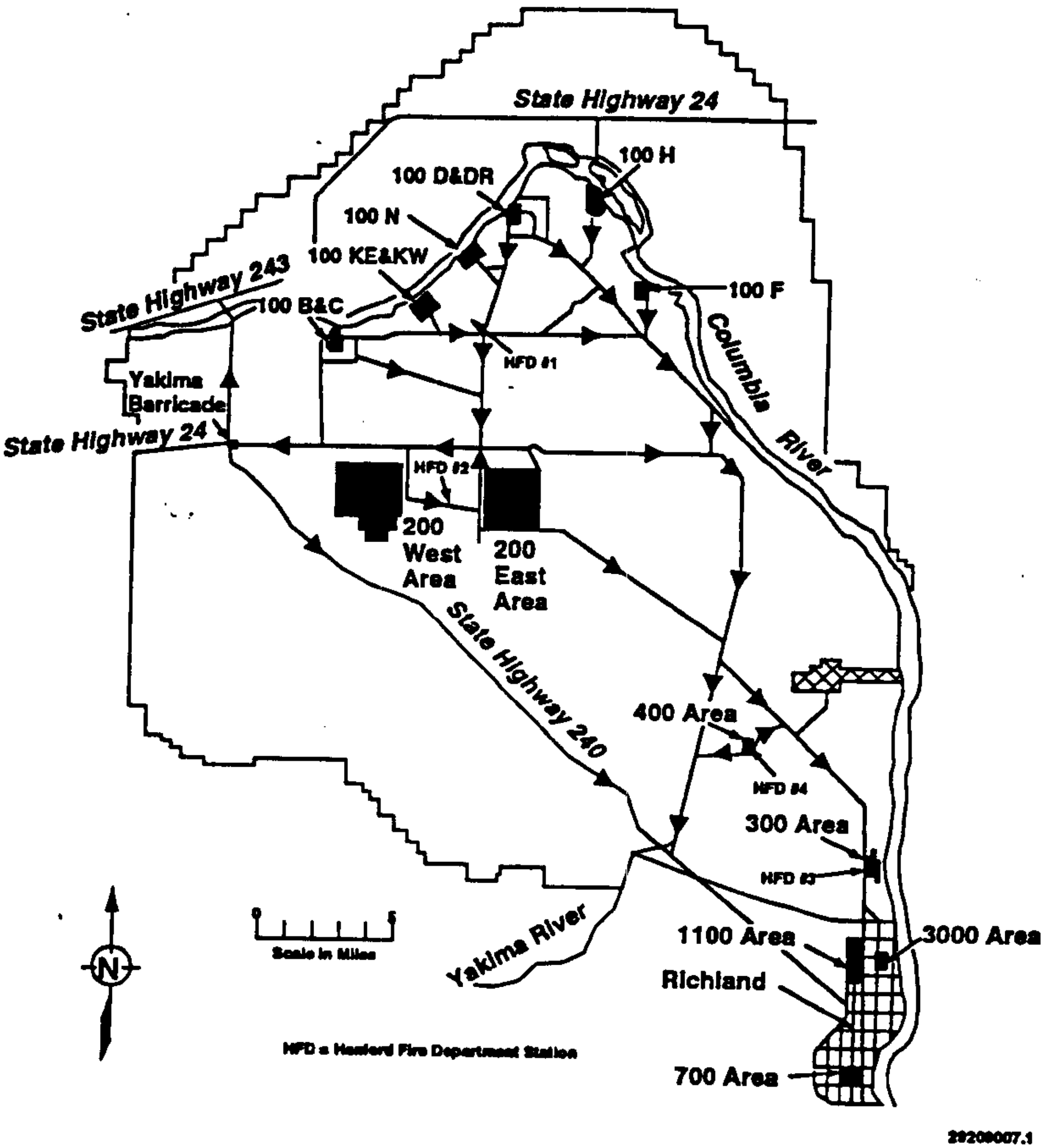

Figure 2. Locations of the Fire Stations on the Hanford Facility.

8.0 COORDINATION AGREEMENTS

This section describes a number of coordination agreements (MOUs) ~~, or memoranda of understanding (MOU)~~ established by and through the DOE-RL to ensure proper response resource availability for incidents involving the Hanford Facility.

An agreement among the ~~four~~ major Hanford Site contractors (an operations, ~~and~~ engineering and construction contractor, an environmental restoration contractor, a research and development ~~contractor, an engineer and constructor~~ contractor, and a medical and health services contractor) defines the interfaces and notifications required during an emergency. The DOE-RL has the overall responsibility for emergency preparedness. Per the agreements, the operations and engineering contractor has responsibility for Site-wide emergency preparedness while each contractor retains responsibility for emergency preparedness at individual units. Agreements have been established with a number of offsite authorities to reduce the impact to human health and/or the environment in the event that an incident has offsite public health implications, or if an onsite emergency warrants offsite assistance. These agreements are activated through the emergency notification of the DOE-RL (Section 4.1).

8.1 LOCAL, STATE, AND FEDERAL AUTHORITIES

Various agreements have been established among the DOE-RL and Benton, Franklin, and Grant Counties and the states of Washington and Oregon. These agreements describe the cooperative arrangements among these agencies for any onsite emergency that warrants offsite assistance. These agreements describe the planning for, communication of, and response to emergencies at the Hanford Facility that might have offsite consequences.

8.2 HANFORD FIRE DEPARTMENT MUTUAL AID

The Hanford Fire Department provides fire department services for the Hanford Site and Hanford Facility. Mutual aid agreements have been established with ~~the~~ Richland, Kennewick, and Pasco fire departments; with Benton County Fire Districts 1 through 6, Franklin County Fire District 3, and Walla Walla Fire District 5.

8.3 MEDICAL AND FIRST AID

Professional medical help is provided onsite by the DOE-RL through the Hanford Environmental Health Foundation. Doctors and nurses are available for emergency assistance at all times. These medical personnel are trained in procedures to assist personnel contaminated with hazardous and/or radioactive material. Emergency call lists are maintained to provide professional medical consultation at all times.

Referral to offsite hospital facilities is made by the Hanford Environmental Health Foundation physician providing emergency assistance by telephone or in person. The primary hospital used in emergencies is Kadlec Hospital, Richland. Kennewick General Hospital, Kennewick, and Our Lady of Lourdes Hospital, Pasco, are used as backup facilities. Agreements have been established among these hospitals and the DOE-RL.

8.4 AMBULANCE SERVICE

Ambulance service is provided by the Hanford Fire Department, which uses paramedics and emergency medical technicians as attendants. This service is available from area fire stations on a 24-hour, 7-day basis. Additional ambulance service is available from other local city fire departments through the mutual aid agreements (Section 8.2).

8.5 UNIFIED DOSE ASSESSMENT CENTER

The Unified Dose Assessment Center (UDAC) is the technical extension of the ~~DOE-RL EACT,~~ DOE-RL-EMT, providing services to both the ~~DOE-RL-EACT~~ DOE-RL-EMT and the ECCs. The primary mission of the UDAC is to provide recommendations for protective actions, dose calculations and projections, and consultation in the area of industrial hygiene for hazardous materials, biology, environmental monitoring, and meteorology to support the ~~DOE-RL EACT~~ DOE-RL-EMT and the ECCs.

Industrial hygiene and biological consultants at the UDAC advise and assist in determining proper response procedures for spills or releases of toxic, flammable, carcinogenic, and pathogenic materials. The UDAC personnel are responsible to provide a central unified assessment of the dispersion and impact of environmental releases from the Hanford Facility. In communication with the ECC, ~~the~~ UDAC coordinates the assessment of impacts and assists in the determination of actual and potential release scenarios.

8.6 HANFORD PATROL/BENTON COUNTY SHERIFF

The Hanford Patrol serves as the security agency for the Hanford Facility. The Benton County Sheriff's Department provides law enforcement for the Hanford Facility. In the event of an emergency, the Hanford Patrol provides services such as activating the crash alarm systems or area sirens, coordinating the movement of emergency responders through security gates, assisting evacuation, establishing barricades, and making necessary notifications through the single point-of-contacts. Benton County Deputies will assist with traffic control activities. Agreements also have been established with the Richland, Kennewick, and Pasco police departments to provide additional backup capabilities if required.

8.7 ALERTING OF PERSONNEL ON THE COLUMBIA RIVER

An agreement exists among the DOE-RL, the Washington Public Power Supply System, Benton and Franklin Counties, and the Thirteenth Coast Guard District to ensure safety on the Columbia River during an emergency at the Hanford Facility and to coordinate response activities for alerting personnel on the Columbia River.

8.8 METEOROLOGICAL INFORMATION

An agreement is in place between the DOE-RL and the National Weather Service to define mutual responsibilities for providing meteorological information in an emergency situation. Additional meteorological information can be obtained from the Hanford Site ~~Meteorological Station.~~ weather station.

8.9 WASHINGTON PUBLIC POWER SUPPLY SYSTEM

An agreement has been established between the DOE-RL and Washington Public Power Supply System for providing mutual assistance as needed. This assistance is available in the use of facilities and equipment for personnel decontamination, first aid, evacuation and reassembly areas, respiratory protective equipment, protective clothing, radiological survey equipment, resources for river evacuation, and radiological assistance response.

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9.0 REQUIRED REPORTS

Three types of written post-incident reports are required for incidents at the Hanford Facility. These reports are summarized in the following sections.

9.1 ASSESSMENT REPORT TO ECOLOGY AND GOVERNMENT OFFICIAL OR NATIONAL RESPONSE CENTER

Immediately following classification of an incident as a WAC 173-303 emergency, as assessment report must be transmitted when the regulatory agencies are notified. This initial assessment report will be submitted by DOE-RL and must include:

- Name and telephone number of reporter
- Name and ~~address of the Hanford Facility/TSD unit~~ Address of facility
- Time and type of incident (e.g., release, fire)
- Name and quantity of material(s) involved, to the extent known

~~—Extent of injuries if any~~

- The extent of injuries, if any; and
- The possible hazards to human health and the environment outside the ~~Hanford Facility.~~ facility

9.2 WRITTEN REPORT TO ECOLOGY

Following an incident that requires implementation of the contingency plan, the BED must ensure that the time, date, and details of the incident are recorded in the TSD units operating record. Within 15 day of the incident, a written report must be submitted to Ecology. The report generated through the DOE-RL reporting system may be used to supplement this written report, but will not be used as a substitute. The 15 day report will be submitted by DOE-RL and must include~~:~~;

- Name, address, and telephone number of RL contact~~the owner or operator~~
- Name, address, and telephone number of the ~~Hanford Facility/TSD~~ affected TSD unit
- Date, time, and type of incident (e.g., fire, explosion)
- Name and quantity of material(s) involved
- The extent of any injuries if any

- Assessment of any actual or potential hazards to human health ~~and~~ or the environment caused by the incident, where this is applicable;
- Estimated quantity and disposition of recovered material that resulted from the incident
- Cause of the incident
- Description of corrective action taken to prevent ~~recurrence~~ reoccurrence of the incident.

9.3 OCCURRENCE REPORTING

Under DOE Order 5000.3B, an occurrence report is required for incidents occurring at the Hanford Facility involving hazardous materials release, fire, ~~or explosion.~~ etc. Specific details of this reporting system are found in the DOE Order. To summarize, the event is categorized within 2 hours and proper notifications are completed to onsite and offsite agencies to include contractor, DOE, county, and state organizations.

These occurrences are investigated, reported, and analyzed promptly to ensure that effective corrective actions are taken in compliance with contractual and statutory requirements. All such occurrences are recorded in the building manager's log book, and the log book is audited to ensure that incidents were reported and handled properly. In the DOE reporting system, three levels of incidents are described, in descending order of severity: emergency, unusual occurrence, and offnormal occurrences.

9.3.1 Emergency Event Reporting

An emergency event involves an incident in progress~~,~~ or having occurred~~,~~ that is the most serious occurrence and requires an increased alert status for onsite and, in specified cases, for offsite authorities. There are three classifications associated with emergency events: Alert, Site Area Emergency, and General Emergency. Occurrences are classified into one of the three levels based on real or potential consequences to personnel, facilities, or the environment, both on and off of the Hanford Facility. Current MOUs between the state of Washington and the Hanford Site identify events that would be classified at the stated levels. Emergency events require notification of classification to affected populations.

9.3.2 Unusual Occurrence Reporting

An unusual occurrence is a nonemergency occurrence that has significant impact or potential for impact on safety, environment, health, security, or operations. Generally, these types of events result in release of radioactive or hazardous materials in minor amounts, involve degradation of unit safety systems, ~~; and/or~~ result in fatalities, exposures to hazardous or radioactive materials, or significant contamination incidents.

9.3.3 Offnormal Event Reporting

An offnormal event is a significant deviation from normal operations that requires categorization and reporting. Hanford Facility management is required to evaluate an event to determine the depth of investigation and level of reporting required.

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10.0 CONTINGENCY PLAN LOCATION

Copies of this Plan are maintained at the following locations:

- Each specific TSD unit
- Hanford Fire Department (area fire stations)
- Area ECCs
- Occurrence Notification Center~~ONC~~
- The DOE-RL ~~ECC,~~ Emergency Operations Center, Federal Building, Richland.

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11.0 REFERENCES

DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*

DOE Order 5500.1B, *Emergency Management Systems*

NIOSH, 1985, *Pocket Guide to Chemical Hazards*, National Institute of Occupational Safety and Health, U.S. Department of Health and Human Resources, Public Health Service, Centers for Disease Control, Washington, D.C.

WAC 173-303, *Dangerous Waste Regulations*, Washington State Department of Ecology, Olympia, Washington.

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