



Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

0049743

98-EAP-543

OCT 06 1998

Ms. Laura J. Cusack
Hanford Facility RCRA Permit Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336-6018



Dear Ms. Cusack:

QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT, DANGEROUS WASTE PORTION (DW PORTION) (QUARTER ENDING SEPTEMBER 30, 1998 - CONDITION I.C.3)

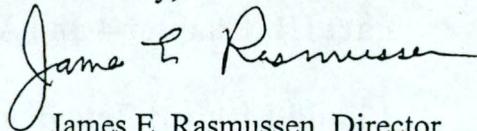
Condition I.C.3. of the Hanford Facility RCRA Permit, DW Portion, addresses Class 1 modifications as defined in Washington Administrative Code (WAC) 173-303-830(4)(a)(i)(A). This condition allows for quarterly notification of Class 1 modifications to be made to the State of Washington Department of Ecology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

Enclosed for your notification is the Class 1 modification to the Hanford Facility RCRA Permit, DW Portion. Modifications this quarter included updating information in Part III and Part VI (Enclosure). The Part III Class 1 modifications pertain to the Liquid Effluent Treatment Facility and 200 Area Effluent Treatment Facility, and the 305-B Storage Facility. The Part VI Class 1 modifications pertain to the 300 Area Process Trenches. The Class 1 modifications are being made to ensure that all activities conducted are in compliance with the RCRA Permit, DW Portion.

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Should you have any questions regarding this information, please contact Ellen M. Mattlin, U.S. Department of Energy, Richland Operations Office, on (509) 376-2385; Susan M. Price, Fluor Daniel Hanford, Inc., on (509) 376-1653; Harold T. Tilden II, Pacific Northwest National Laboratory, on (509) 376-0499; or Roger J. Landon, Bechtel Hanford, Inc., on (509) 372-9209.

Sincerely,

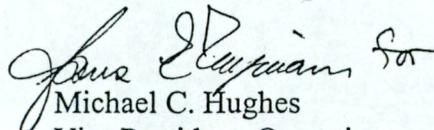


James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division
DOE Richland Operations Office

EAP:EMM



William D. Adair, Director
Environmental Protection
Responsible Party for
Fluor Daniel Hanford, Inc.



Michael C. Hughes
Vice President, Operations
Bechtel Hanford, Inc.



Richard S. Watkins, Director
Environment, Safety, and Health
Pacific Northwest National Laboratory

Enclosure:

Quarterly Notification of Class 1
Modifications to the Hanford Facility
RCRA Permit, (DW Portion)
Quarter Ending September 30, 1998

cc w/encl:

Administrative Record H6-08

L. M. Johnson, BHI
R. J. Landon, BHI
J. R. Wilkinson, CTUIR
S. M. Price, FDH
S. A. Thompson, FDH
Donna L. Powaukee, NPT
H. T. Tilden, PNNL
Russell Jim, YIN

cc w/o encl:

M. C. Hughes, BHI
E. R. Skinnarland, Ecology
D. R. Sherwood, EPA
W. D. Adair, FDH
R. S. Watkins, PNNL

**Hanford Facility RCRA Permit Modification Notification Forms
for
Part III, Chapter 4 and Attachment 34**

**Liquid Effluent Retention Facility and
200 Area Effluent Treatment Facility**

Page 1 of 2

Index

Page 2 of 2: Section 6.2.2.3.3, page 6-4, lines 28-50

Hanford Facility RCRA Permit Modification Notification Form

Unit:
Liquid Effluent Retention Facility and
200 Area Effluent Treatment Facility

Permit Part & Chapter:
Part III, Chapter 4 and Attachment 34
[Section III.4.A, 6.2.2.3.3]

Description of Modification:

Section 6.2.2.3.3, page 6-4, lines 28-50:

6.2.2.3.3 Leak Detection [F-2d(6)(a)(3)]. The leachate detection, collection and removal system is described in Chapter 4.0. The leachate collection sump pump is activated automatically when the liquid level in the leachate sump reaches a preset level. A flowmeter and totalizer measure the amount of leachate removed. An inspection is performed weekly where the totalizer reading and basin level reading are used to determine the leak rate per wetted surface area. The leak rate is compared to previous rates to see if leakage has increased.

The LERF employs a double-walled transfer piping between 242-A Evaporator and LERF and between LERF and ETF. The WAC 173-303-650 regulations do not require a discussion of piping for surface impoundments. However, for the purposes of comprehensive coverage of the LERF, inspections and integrity assessments are performed on the piping system. Aqueous waste (e.g., process condensate) is transferred from the 242-A Evaporator to the LERF via a buried pipeline. Likewise, aqueous waste is transferred to the ETF via buried pipelines. At the LERF dikes, aboveground piping serves to transfer waste from one basin to another.

The buried pipelines are normally inspected continuously monitored during transfers by a leak detection system (Chapter 4.0). The alarms on the leak detection system are monitored in the 242-A Evaporator and ETF control rooms. As an alternative to continuous leak detection, the transfer lines from the LERF to the ETF also can be inspected daily during transfers by opening the secondary containment drain lines at the LERF catch basins (for 242-A Evaporator transfers to LERF) and the surge tank (for LERF transfers to ETF) to inspect for leakage. During the routine inspections at LERF, the aboveground piping system is inspected for signs of leakage and for general structural integrity. During the visual inspection, particular attention is paid to valves and fittings for signs of cracking, deformation, and leakage.

Reason for change: This modification eliminates an inconsistency between the text in Section 6.2.2.3.3 and Table 6-2.

Modification Class: ¹²³	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

1. Administrative and Informational changes.

Submitted by Co-Operator: <i>Kenneth J. Swoboda</i> for C. G. Mattsson	Reviewed by RL Program Office: <i>Julian E. Bilson</i> H. E. Bilson	Reviewed by Ecology: M. N. Jaraysi
<i>9/21/98</i> Date	<i>10/6/98</i> Date	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

**Hanford Facility RCRA Permit
Part III, Chapter 4 and Attachment 34**

**Liquid Effluent Retention Facility and
200 Area Effluent Treatment Facility**

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6.0 PROCEDURES TO PREVENT HAZARDS [F]

This chapter discusses security; inspection schedules; preparedness and prevention requirements; preventive procedures, structures, and equipment; and prevention of reaction of ignitable, reactive, and incompatible waste at LERF and ETF.

6.1 SECURITY [F-1]

The following sections describe the security measures, equipment, and warning signs used to control entry to LERF and ETF. Hanford Facility security measures are discussed in the General Information Portion (DOE/RL-91-28).

6.1.1 Security Procedures and Equipment [F-1a]

The following sections describe the 24-hour surveillance system, barriers, and warning signs used to provide security and to control access to LERF and ETF.

6.1.1.1 24-Hour Surveillance System

The entire Hanford Facility is a controlled-access area. For surveillance information, refer to General Information Portion (DOE/RL-91-28).

6.1.1.2 Barrier and Means to Control Entry

The LERF and ETF are protected by the 200 East Area fence. Visitors are required to be escorted. The LERF is surrounded in its entirety by a separate 2.1 meter chain link fence topped with 3 strands of barbed wire extended outward at a 45 degree angle (referred to as the operational security fence). Access to the LERF is gained through two locked vehicular gates off the perimeter road. Gate keys are retained at the 242-A Evaporator and ETF shift offices.

Persons desiring entry to ETF process area must notify the control room. These persons also must have the appropriate facility-specific training, as defined in the Dangerous Waste Training Plan (Appendix 8A). The ETF personnel monitor all persons entering ETF and notify the Hanford Patrol of any attempted unauthorized entry. Immediate response by protective force personnel maintains the necessary security at the LERF and ETF.

6.1.1.3 Warning Signs

Signs bearing the legend "DANGER--UNAUTHORIZED PERSONNEL KEEP OUT," or an equivalent legend, are posted around the perimeter of LERF and ETF. The signs are in English, legible from a distance of 7.6 meters, and are visible from all angles of approach. In addition to these signs, the fences around the 200 East Area are posted with signs, printed in English, warning against unauthorized entry. These signs also are visible from all angles of approach.

6.1.2 Waiver [F-1b]

Waiver of the security procedures and equipment requirements for LERF and ETF are not requested. Therefore, WAC 173-303-310(1)(a) and (b) are not applicable to LERF and ETF.

6.2 INSPECTION PLAN [F-2]

This section describes the method and schedule for inspections of LERF and ETF. The purpose of inspections is to help ensure that situations do not exist that might cause or lead to the release of dangerous and/or mixed waste that could pose a threat to human health and the environment. Abnormal conditions identified by an inspection will be corrected on a schedule that prevents hazards to workers, the public, and the environment.

6.2.1 General Inspection Requirements [F-2a and F-2a(4)]

The content and frequency of inspections are described in this section. Inspection records are retained at the ETF, or other approved locations, for a minimum of 5 years.

In radioactive areas of the ETF, many inspections are performed remotely. Monitoring instruments are connected to audible alarms and visual indicators track alarm status. The monitoring system provides trending of selected monitoring data, graphics, and equipment summary displays.

A preventive maintenance recall system is employed to direct preventive maintenance activities at the LERF and the ETF. Equipment requiring maintenance is checked as indicated by the maintenance history and the manufacturer's recommendations. The preventive maintenance of certain equipment might not be possible if the LERF or the ETF is in an operational mode. Thus, the preventive maintenance could be performed slightly earlier or later than planned to minimize impact on operations.

Instrumentation at ETF is calibrated regularly to ensure accuracy and reliability. All process control instrumentation is calibrated on a schedule depending on previous calibration experience. An instrument calibration and recall system is employed to manage calibrations.

6.2.1.1 Types of Problems

Key components of the LERF inspection program include the following areas:

- Structural integrity of the basins
- Catch basin secondary containment system integrity
- Evidence of release from basins
- Safety, communications, and emergency equipment.

Key components of the ETF inspection program include the following areas:

- Condition of tanks and ancillary piping
- Condition of containers
- Condition of the process control equipment
- Condition of emergency equipment
- Condition of secondary containment.

Tables 6-1 and 6-2 provide a description of ETF items to be inspected.

6.2.1.2 Frequency of Inspections [F-2a(3)]

The frequency of inspections is based on the rate of possible deterioration of equipment and the probability of a threat to human health or the environment.

1 While in operation, the LERF is inspected weekly. The LERF also is inspected for run-on, run-off, cover
2 integrity, and erosion problems after significant precipitation events. The ETF is inspected as indicated in
3 Tables 6-1 and 6-2.

4 5 **6.2.2 Specific Process Inspection Requirements [F-2d]**

6
7 The following sections describe the specific process inspections performed at LERF and ETF.

8 9 **6.2.2.1 Container Inspections [F-2d(1)]**

10
11 Containers are used at the ETF to store solidified secondary waste, such as the powder waste from the thin film
12 dryer and maintenance and operations waste. When containers are being held in the container storage area, the
13 following inspection schedule is maintained:

- 14
- 15 • Daily visual inspection of container storage area for leaks, spills, accumulated liquids, and open or
16 improperly sealed containers
- 17 • Weekly visual inspection of container labels to ensure labels are not obscured, removed, or otherwise
18 unreadable
- 19 • Weekly visual inspection for deterioration of containers, containment systems, or cracks in protective
20 coating or foundations caused by corrosion, mishandling, or other factors.

21
22 Following the inspections, an inspection datasheet is signed and dated by the inspector and supervisor.

23 24 **6.2.2.2 Tank Inspections [F-2d(2)]**

25
26 A description of the tank systems and ancillary equipment at the ETF is given in Chapter 4.0. Inspections and
27 frequencies are given in Tables 6-1 and 6-2. This section includes a brief discussion of the inspections.

28
29 **6.2.2.2.1 Overfill Protection.** Tanks that have the possibility of being overfilled have level
30 instrumentation that alarms before the tanks reach overflow. High tank level alarms annunciate in the
31 control room, allowing operating personnel to take immediate action to stop the vessels from overflowing.
32 These alarms are monitored continuously in the control room during solution transfers.

33
34 **6.2.2.2.2 Visual Inspections.** Visual inspections of tanks and secondary containments are performed to
35 check for leaks, signs of corrosion or damage, and malfunctioning equipment. Inspections are performed
36 on tanks and the secondary containment within the ETF and the surge tank and verification tank and
37 associated secondary containment.

38
39 **6.2.2.2.3 Secondary Containment Leak Detectors.** The surge tank and verification tank secondary
40 containment systems have sloped floors that drain solution to sumps equipped with leak detectors that
41 alarms in the control room. These alarms are monitored continuously in the control room. If an alarm is
42 activated, further investigation is performed to determine if the source is a tank leak or other solution (i.e.,
43 precipitation).

44
45 **6.2.2.2.4 Integrity Assessments.** The initial integrity assessment was issued in 1995 (Chapter 4.0).
46 Consistent with the recommendations of the integrity assessment, a periodic integrity assessment program
47 was developed for the ETF tanks and is discussed in detail in section 4.4.2 of Chapter 4.0.

1 **6.2.2.2.5 Effluent Treatment Facility Piping.** The ETF employs an extensive piping system. During
2 inspections at the ETF, any aboveground piping is inspected visually for signs of leakage and for general
3 structural integrity. During the visual inspection, particular attention is paid to valves and fittings for signs
4 of cracking, deformation, and leakage.

5
6 **6.2.2.3 Surface Impoundments [F-2d(6)] and Condition Assessment [F-2d(6)(a)]**

7
8 The following describes the surface impoundment inspections performed at LERF.

9
10 **6.2.2.3.1 Overtopping Control [F-2d(6)(a)(1)].** Under current operating conditions, 1.34 meters of
11 freeboard is maintained at each LERF basin, which corresponds to a normal operating level of 6.1 meters,
12 or 24.6 million liters. Level indicators at each basin are monitored to confirm that this level is not
13 exceeded.

14
15 Before an aqueous waste is transferred into a basin, administrative controls are implemented to ensure
16 overtopping will not occur during the transfer. The volume of feed to be transferred is compared to the
17 available volume in the receiving basin. The transfer is not initiated unless there is sufficient volume
18 available in the receiving basin or a cut-off level is established. The transfer into the basin would be
19 stopped when this cut-off level is reached.

20
21 The LERF basins also are provided with floating very low-density polyethylene covers that are designed
22 and constructed to prevent overtopping by the introduction of precipitation and dust into the basins.
23 Overtopping and flow control also are discussed in Chapter 4.0.

24
25 **6.2.2.3.2 Impoundment Contents [F-2d(6)(a)(2)].** The LERF basins are inspected weekly to assess
26 whether the contents are escaping from a basin. Level indicators are inspected weekly to check for
27 unaccountable change in the level of the basins.

28
29 **6.2.2.3.3 Leak Detection [F-2d(6)(a)(3)].** The leachate detection, collection and removal system is
30 described in Chapter 4.0. The leachate collection sump pump is activated automatically when the liquid
31 level in the leachate sump reaches a preset level. A flowmeter and totalizer measure the amount of leachate
32 removed. An inspection is performed weekly where the totalizer reading and basin level reading are used to
33 determine the leak rate per wetted surface area. The leak rate is compared to previous rates to see if
34 leakage has increased.

35
36 The LERF employs a double-walled transfer piping between 242-A Evaporator and LERF and between
37 LERF and ETF. The WAC 173-303-650 regulations do not require a discussion of piping for surface
38 impoundments. However, for the purposes of comprehensive coverage of the LERF, inspections and
39 integrity assessments are performed on the piping system. Aqueous waste (e.g., process condensate) is
40 transferred from the 242-A Evaporator to the LERF via a buried pipeline. Likewise, aqueous waste is
41 transferred to the ETF via buried pipelines. At the LERF dikes, aboveground piping serves to transfer
42 waste from one basin to another.

43
44 The buried pipelines are normally continuously monitored during transfers by a leak detection system
45 (Chapter 4.0). The alarms on the leak detection system are monitored in the 242-A Evaporator and ETF
46 control rooms. As an alternative to continuous leak detection, the transfer lines can be inspected daily
47 during transfers by opening the secondary containment drain lines at the LERF catch basins (for
48 242-A Evaporator transfers to LERF) and the surge tank (for LERF transfers to ETF) to inspect for
49 leakage. During the routine inspections at LERF, the aboveground piping system is inspected for signs of

1 leakage and for general structural integrity. During the visual inspection, particular attention is paid to
2 valves and fittings for signs of cracking, deformation, and leakage.

3 **6.2.2.3.4 Dike Erosion [F-2d(6)(a)(4)].** The LERF basins and dikes are visually inspected weekly and
4 after storms for severe erosion or other signs of deterioration in the dikes from precipitation, wind,
5 burrowing mammals, or vegetation.

6
7 **6.2.2.3.5 Structural Integrity [F-2d(6)(b)].** A written certification attesting to the structural integrity of
8 the basin dikes, signed by a qualified, registered professional engineer, is provided in Chapter 4.0.

9
10 **6.2.2.3.6 Container Inspection [F-2b(1)].** Normal operation of the LERF does not involve the storage of
11 dangerous waste in containers. Therefore, the inspection requirements of this section normally are not
12 applicable to the LERF. Any containerized RCRA-regulated waste that might be generated at LERF will
13 be brought to the ETF and managed in accordance with WAC 173-303-200(1) and is discussed in
14 Section 6.2.2.1.

15 16 **6.2.3 Inspection Log [F-2b and 2c]**

17
18 Observations made and deficiencies noted during an inspection are recorded on inspection log sheets (also
19 called turnover sheets). On completion, the log sheet includes the inspector's printed name, signature, date,
20 and time; the log sheet is submitted for review and approval by ETF/LERF management or their designee,
21 as required by operating procedures. Once approved, the log sheet is kept in LERF and ETF files.
22 Inspection records are retained at the ETF, or other approved locations, for a minimum of 5 years. The
23 inspection records are used to help determine any necessary corrective actions. Problems identified during
24 the inspections are prioritized and addressed in a timely fashion to mitigate health risks to workers,
25 maintain integrity of the TSD units, and prevent hazards to public health and the environment.

26
27 If while performing an inspection, a leak or spill is discovered, facility management responds per the
28 building emergency plan (Appendix 7A). Action is taken to stop the leak and determine the cause. The
29 waste is removed from the secondary containment in a timely manner that prevents harm to human health
30 and the environment.

31 32 **6.2.4 Storage of Ignitable or Reactive Wastes [F-2d(3)]**

33
34 The LERF could receive an aqueous waste that is designated reactive or ignitable. Any aqueous waste
35 exhibiting these characteristics is managed (e.g., through blending in LERF) such that the waste no longer
36 exhibits the reactive or ignitable characteristics.

37
38 Though unlikely, the ETF secondary waste might have the characteristics of being reactive or ignitable.
39 The Hanford Fire Department performs annual fire inspections of the ETF using a checklist developed
40 specifically for facilities that handle dangerous and/or mixed waste.

41 42 **6.3 PREPAREDNESS AND PREVENTION REQUIREMENTS [F-3]**

43
44 The following sections document the preparedness and prevention measures taken at LERF and ETF.

45 46 **6.3.1 Equipment Requirements [F-3a]**

47
48 The following sections describe the internal and external communications systems and the emergency
49 equipment required.

1 **6.3.1.1 Internal Communications**
2

3 When operators are present at the LERF, the operators carry mobile (hand-held) two-way radios to
4 maintain contact with 242-A Evaporator and ETF personnel. The operators at LERF are informed of
5 emergency situations (e.g., building and/or area evacuations, take-cover events, high airborne
6 contamination, fire, and/or explosion), and are provided with emergency instructions by several systems.
7 These systems include the mobile two-way radios, and the telephone in the LERF instrument building.
8

9 The ETF is equipped with an internal communication system to provide immediate emergency instruction
10 to personnel. The onsite communication system at the ETF includes telephones, mobile two-way radios, a
11 public address system, and alarm systems. The telephone and radio systems provide for intraplant
12 communication as well as external communication. Provisions are made to appropriately respond to
13 various emergencies, including the following alarm-activated emergency situations: building evacuations,
14 fire and/or explosion, loss of essential services, loss of ventilation, radioactive discharges, and high
15 airborne contamination. Chapter 7.0 provides additional information on the response activities.
16

17 Immediate emergency instruction to personnel is provided by a public address system via speaker horns and
18 ceiling-mounted speakers located throughout the building. The public address system is coupled to
19 building telephone systems to provide telephone accessed voice paging. The ETF alarms are annunciated
20 via elements of the public address system. The general telephone system, which carries various
21 communication signals (e.g., telephone, crash alarm), is linked to the Hanford Site integrated voice data
22 telecommunications system.
23

24 **6.3.1.2 External Communications [F-3a(2)]**
25

26 The LERF and its operators are equipped with devices for summoning emergency assistance from the
27 Hanford Fire Department, the Hazardous Materials Response Team, and/or local emergency response
28 teams, as necessary. External communication is made by either a telephone communication system or
29 mobile two-way radios. The LERF telephone is available in the instrumentation building. Personnel
30 assigned to emergency response organizations are reached in the following ways:
31

- 32 • Telephone number 911--is the contact point for the Hanford Site; on notification, the Hanford Patrol
33 Operations Center notifies and/or dispatches required emergency responders
34
- 35 • Telephone number 373-3800--single point of contact for the emergency duty officer; this number can
36 be dialed from any Hanford Site telephone
37
- 38 • Two-way radio system--consists of hand-held; the system accesses the Hanford Site emergency
39 network and can summon the Hanford Fire Department, Hanford Patrol, and/or any other assistance
40 needed to deal with emergencies.
41
- 42 • The ETF is equipped with devices for summoning emergency assistance from the Hanford Fire
43 Department and/or local emergency response teams as necessary. External communication is made via
44 a telephone communication system or two-way radios.
45

46 Telephones are provided at numerous locations throughout the ETF. In addition, the following external
47 communication systems are available for notifying persons assigned to emergency response organizations:
48

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

- 1 • Telephone number 911--contact point for the Hanford Site; on notification, the Hanford Patrol
2 Operations Center notifies and/or dispatches required emergency responders
3
- 4 • Telephone number 373-3800--single point of contact for the emergency duty officer; this number can
5 be dialed from any Hanford Facility telephone
6
- 7 • Crash alarm telephone system--consists of selected telephones that automatically are disassociated
8 from the regular system and connected to control stations
9
- 10 • Priority message system (Management Bulletin)--a network of telefax machines used to disseminate
11 information to personnel
12
- 13 • The DOE-RL radio system--radio systems and frequencies available for emergency communications.
14

15 6.3.1.3 Emergency Equipment [F-3a(3)] 16

17 The LERF and ETF rely primarily on the Hanford Fire Department to respond to fires and other
18 emergencies. The Hanford Fire Department is capable of providing rapid response to fires within the 200
19 East Area. All LERF and ETF operators are familiar with the LERF and ETF contingency plans
20 (Chapter 7.0) and are trained in the use of emergency pumping, fire, and communications equipment. The
21 Hanford Site maintains a sufficient inventory of heavy equipment (i.e., bulldozers, cranes, road graders) for
22 emergency response.
23

24 Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment
25 are available at various locations in the ETF.
26

27 Fire control equipment is available at the ETF and could include the following:
28

- 29 • Fire extinguishers (all-utility use, dry chemical), good for use on small fires
- 30 • Automatic fire suppression systems installed in the ETF control room and electrical room
- 31 • Fire alarm pull boxes
- 32 • A water spray system is installed in the operating and administrative portions of the ETF.
33

34 Respirators, hazardous material protective gear, and special work procedure clothing for ETF personnel
35 are kept in the change room at the ETF. Safety showers are located in convenient locations in the ETF.
36 Portable emergency eye washes are used at the ETF. Water for these devices is supplied from the ETF
37 sanitary water system.
38

39 6.3.1.4 Water for Fire Control [F-3a(4)] 40

41 A water main is not provided to the LERF. Water for fire control is supplied by the Hanford Fire
42 Department trucks for fires requiring high water volume and pressure. Each fire station normally has a
43 truck equipped with a hydraulically operated aerial ladder, and one pumper (backup fire engine, without a
44 boom, that is used if the aerial ladder is inoperable). Fire engines have a pumping capacity of at least
45 5,600 liters of water per minute. Other fire protection equipment uses chemicals rather than water as an
46 extinguishing media.
47

48 The ETF is serviced by two 12-inch raw water lines that are tied into the 200 East Area raw water
49 distribution grid. These lines provide a looped configuration that supplies two independent sources of raw

1 water for fire protection and raw water uses. Connections from the ETF raw water system supply fire
2 hydrants and the wet-pipe sprinkler system.

3
4 In the event that water pressure is lost, the Hanford Fire Department is equipped with fire engines to
5 provide needed water.

6 **6.3.2 Aisle Space Requirement [F-3b]**

7
8
9 The operation of the LERF does not involve aisle space. Nevertheless, the LERF and the individual basins
10 are easily accessible to emergency response personnel and vehicles. A 6.1-meter-wide service road runs
11 along the base of the basin area on the east, south, and west sides within the operational security fence.

12
13 Aisle spacing at ETF is sufficient to allow the movement of personnel and fire protection equipment in and
14 around the containers. This storage arrangement also meets the requirements of the National Fire
15 Protection Association and the Life Safety Code (NFPA 1996) for the protection of personnel and the
16 environment. A minimum 0.76-meter aisle space is maintained between rows of containers as required by
17 WAC 173-303-630(5)(c).

18 **6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]**

19
20
21 The following sections describe preventive procedures, structures, and equipment.

22 **6.4.1 Unloading Operations, Spill Prevention, and Control [F-4a]**

23
24
25 Underground pipelines that transfer aqueous waste to and from the LERF are encased in a secondary pipe.
26 If a leak is detected in a pipeline, flow in the pipeline will be stopped and the cause of the leak investigated
27 and remediated.

28
29 If it is required to transfer aqueous waste from one LERF basin to another, submersible pumps are located
30 in risers at the northwest corner of a basin. Valves are closed or opened depending on the direction of the
31 fluid transfer. Pumps are started, providing a cumulative flow of between 2,000 and 3,000 liters per
32 minute into another basin.

33
34 The ETF Load-In Station is monitored continuously during tank-filling operations and filling is stopped
35 immediately if leaks occur. Care is taken to ensure that even minor leaks are cleaned up immediately and
36 disposed of in accordance with approved management procedures. Any spill that is determined to be a
37 dangerous waste will be managed according to the requirements of WAC 173-303.

38 **6.4.2 Run-Off [F-4b]**

39
40
41 The LERF is constructed and operated to ensure that all aqueous waste is contained within the basins. The
42 basins are designed and operated to prevent overtopping (Section 6.2.2.3.1). Furthermore, the basins are
43 provided with very low-density polyethylene floating covers to prevent the introduction of precipitation into
44 the basins. The basins also are graded to ensure that all precipitation outside the basins is directed away
45 from the surface impoundments.

46
47 The basins are constructed so that the top of the basin dikes are approximately 3 meters abovegrade. The
48 exterior side slopes of the basins have a 2.25 (horizontal) to 1 (vertical) slope. Run-on of precipitation to
49 the basins from the surrounding area is not possible because the surrounding area slopes away from the
50 LERF.

1 Dangerous waste and hazardous chemical handling areas at the ETF are designed to contain spills, leaks,
2 and wash water, thereby preventing run-off and subsequent releases. All dangerous and/or mixed waste
3 loading and unloading areas are provided with secondary containment structures as described in
4 Chapter 4.0.

6.4.3 Water Supplies [F-4c]

8 The LERF uses operating practices, structures, and equipment to prevent the contamination of natural
9 water supplies (i.e., groundwater and surface water). The LERF is monitored closely during operation to
10 detect abnormal conditions (e.g., leaks), and regularly inspected to detect equipment and structural
11 deteriorations that could allow possible water supply contamination. The basins are provided with a
12 leachate collection system that is designed to contain any leachate generated. These systems, in conjunction
13 with the double-composite liner system and underlying low permeable clay liner, ensure that should a
14 release occur, the release will be fully contained within the basin configuration and, therefore, water
15 supplies will be protected. Appendix 7A provides information on procedures that are implemented if a
16 release is detected at the LERF.

18 There are no drinking water wells near the ETF. Therefore, a release would not immediately contaminate
19 drinking water supplies. The ETF uses operating practices, structures, and equipment to prevent the
20 contamination of natural water supplies (i.e., groundwater and surface water). The ETF is monitored
21 during operation to detect abnormal conditions, and is inspected regularly to detect equipment and
22 structural deteriorations that could allow spills to the environment. Areas in contact with dangerous and/or
23 mixed waste are monitored continuously during operation through a series of level and pressure indicators,
24 leak detection alarms, equipment failure alarms, and control panel readouts. In addition, the ETF is
25 inspected regularly for the presence of leaks or other offnormal conditions wherever possible (in all areas
26 that can be safely entered).

28 In addition to detailed operating practices, structures and equipment are used at the ETF to prevent
29 contamination of water supplies. The structures and equipment designed to prevent contamination of water
30 supplies are the same as the structures and equipment used to prevent run-off from dangerous and/or mixed
31 waste handling areas.

6.4.4 Equipment and Power Failure [F-4d]

35 The storage function of the LERF is not affected by loss of power and a temporary loss of power would not
36 pose a threat to the environment. Loss of electrical power would not cause the storage of the waste to be
37 jeopardized. For process condensate transferred from the 242-A Evaporator, appropriate valving
38 procedures are followed to ensure a smooth restart of the flow to the LERF in the event of a power failure
39 at the 242-A Evaporator. Pump equipment failure is addressed by operations personnel at the
40 242-A Evaporator.

42 The ETF does not have a standby power source. Power to selected lighting, computers, and process
43 controls is configured with an uninterruptible power supply. During partial loss of normal power, the
44 effected pumps and subsystems will be shut down. Complete loss of power to the ETF shuts down the
45 entire ETF except for the instruments in the control room connected to the uninterruptible power supply.
46 Redundant pumps allow the process to continue to operate when only one component is out of service.

48 When power at the ETF is lost, the valves assume a fail-safe position to allow the process to remain in a
49 safe shutdown mode until restoration of power. This action allows the operators to perform equipment
50 surveys during shutdown and to confirm that there are no safety issues because the ETF is shut down.

1 Because a power failure would also shutoff flow into the ETF, there will not be any increase in volume in
2 any of the holdup basins, tanks, or other systems.

3
4 A combination of reliability, redundancy, maintenance, and repair features are used in the ETF equipment
5 and systems to minimize random failure of equipment. For crucial systems such as ventilation filters,
6 redundant trains are provided to mitigate equipment and system failure. Spare parts are maintained for
7 essential production and safety equipment.

8 9 **6.4.5 Personnel Exposure [F-4e]**

10
11 At the LERF and ETF, operating practices, structures, and equipment are used to prevent undue exposure
12 of personnel to dangerous and/or mixed waste. Protective clothing and equipment are used by all personnel
13 handling waste. All operations are conducted so that exposure to dangerous and/or mixed waste, and
14 hazardous and radioactive materials are maintained ALARA.

15
16 Protective clothing and equipment are prescribed for personnel handling chemicals or dangerous waste.
17 Before the start of any operation that could expose personnel to the risk of injury or illness, a review of the
18 operation is performed to ensure that the nature of hazards that might be encountered is considered and
19 appropriate protective gear is selected. Personnel are instructed to wear personal protective equipment in
20 accordance with training, posting, and instructions.

21
22 A change trailer at LERF is located between basins 42 and 43. In addition, the change trailer has an
23 operations office for working with procedures. Exits within the change trailer are clearly marked. A
24 storage building is located within the perimeter fence, northwest of the basins. The LERF storage building
25 also is provided with separate storage areas for clean and contaminated equipment. A decontamination
26 shower and decontamination building is located at the 272-AW Building, approximately 1.6 kilometers
27 from the LERF or at the ETF.

28
29 The ETF has eyewash stations and safety showers in convenient locations for use by personnel. The
30 following structures and equipment were incorporated into the ETF design to minimize personnel exposure.

- 31
- 32 • Offices, control room, clean- and soiled-clothes storage areas, change rooms, and the lunchroom are
33 situated to minimize casual exposure of personnel.
 - 34
 - 35 • Building exit pathways are located to provide rapid egress in emergency evacuations.
 - 36
 - 37 • Emergency lighting devices are located strategically throughout the ETF.
 - 38
 - 39 • Audio and/or visual alarms are provided for all room air samplers, area alarms, and liquid monitors.
40 Visual readouts for these alarm systems are located in less contaminated areas to minimize exposure to
41 personnel.
 - 42
 - 43 • Areas for decontaminating and maintaining equipment are provided in contaminated areas to limit the
44 spread of contamination to uncontaminated areas such as the control room.
 - 45
 - 46 • Instrument interlock systems are provided that automatically return process operations to a safe
47 condition if an unsafe condition should occur.
 - 48
 - 49 • The ETF ventilation systems are designed to provide air flow from uncontaminated zones to
50 progressively more contaminated zones.

1 Whenever possible, exposures to hazards are controlled by accepted engineering and/or administrative
2 controls. Protective gear is used where effective engineering or administrative controls are not feasible.
3

4 **6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND**
5 **INCOMPATIBLE WASTE [F-5 through F-5b]**
6

7 Typically aqueous waste managed at the LERF or ETF does not display the characteristics of reactivity or
8 ignitability. Any aqueous waste streams exhibiting these characteristics are blended or mixed at LERF to a
9 concentration where the waste no longer exhibits reactive or ignitable characteristics.
10

11 No incompatible aqueous waste is expected to be stored or treated at the LERF or ETF (Chapter 3.0).
12 Therefore, the requirements of WAC 173-303-806(4)(a) are not applicable.

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Table 6-1. Visual Inspection Schedule for the ETF.

(Sheet 1 of 2)

1	Item	Inspection	Frequency	Inspected by
2	Main Treatment Train			
3	Surge tank system	Inspect area for leaks. Note any unusual noises or vibration from the system pumps. Inspect secondary containment system for signs of deterioration.	Daily	Process operator
4	Rough filter	Inspect for leaks.	Daily*	Process operator
5	Ultraviolet oxidation system	Inspect module for leaks. Inspect peroxide storage tank, ancillary equipment for leaks.	Daily*	Process operator
6	pH adjustment tank	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
7	H ₂ O ₂ decomposer	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
8	Fine filter	Inspect module for leaks.	Daily*	Process operator
9	Degasification system	Inspect module for leaks. Note any unusual noises or vibration from the degasification blower.	Daily*	Process operator
10	Reverse osmosis system	Inspect tanks and ancillary equipment for leaks. Note any unusual noises or vibration from the system pumps.	Daily*	Process operator
11	Polishers	Inspect tanks and ancillary equipment for leaks.	Daily*	Process operator
12	Effluent pH adjustment tank	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
13	Verification tanks	Inspect tanks and ancillary equipment for leaks. Note any unusual noises or vibration from the system pumps. Inspect secondary containment system for signs of deterioration.	Daily	Process operator
14	Secondary Treatment Train			
15	Secondary waste receiving tank	Inspect tank and ancillary equipment for leaks.	Daily	Process operator
16	ETF evaporator	Inspect tank and equipment for leaks. Note any unusual noises or vibration from the system pumps or compressor.	Daily*	Process operator
17	Concentrate tank	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
18	Thin film dryer	Inspect tanks and ancillary equipment for leaks (viewed through camera). Note any unusual noises or vibration from the system pumps or blower.	Daily*	Process operator
19	Container handling	Inspect area for spills, leaks, accumulated liquids.	Daily	Process operator
20	Container handling	Inspect for deterioration of containers and secondary containment, including corrosion and cracks in secondary containment foundation and coating. Inspect container labels to ensure that they are readable.	Weekly	Process operator

Table 6-1. Visual Inspection Schedule for the ETF.
(Sheet 2 of 2)

Item	Inspection	Frequency	Inspected by
Resin dewatering	Inspect module for leaks. Note any unusual noises or vibration from the system pumps or blower.	Daily*	Process operator
Support Systems			
Vessel ventilation system	Inspect filters (HEPA and pre-filters), check vessel off-gas pressures, system flow, and discharge temperatures.	Daily	Process operator
Sump tank system	Inspect sump trenches for unexpected liquids which indicate spills or leaks from process equipment.	Daily	Process operator
Safety Systems			
Eye wash stations	Check status; check for adequate pressure.	Monthly	Process operator
Safety showers	Check status; check for adequate pressure.	Monthly	Process operator
Emergency Systems			
Fire extinguishers	Check for adequate charge.	Monthly	Process operator
Emergency lighting	Test operability.	Monthly	Process operator
Processing Area			
Uninterruptible power supply	Check output voltage and visually inspect battery pack for corrosion and leakage. Check indicator lights for fault conditions.	Annually	Electrician/ process operator

15 * Stated inspection frequency to be performed only during ETF operations.

16 HEPA – High efficiency particulate air

Table 6-2. Inspection Plan for Instrumentation Monitoring

(Sheet 1 of 2)

Item	Inspection	Frequency	Inspected by
Main Treatment Train			
Leak detector LAH-20B009	Monitor for leakage in the surge tank drainage sump.	Continuously	Computer Process Operator
Level alarm LAH-60A013	Monitor surge tank level to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60C-111	Monitor liquid levels in the pH adjustment tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60F-101	Monitor liquid levels in the first RO feed tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60F-201	Monitor liquid levels in the second RO feed tank to prevent overflow.	Continuously	Computer Process Operator
Level alarms LAHL-60F-211	Monitor liquid levels in the effluent pH adjustment tank to prevent overflow.	Continuously	Computer Process Operator
Level transmitter LAHX-60H001A/B/C	Monitor liquid level in verification tanks to prevent overflow.	Continuously	Computer Process Operator
Leak detector LAH-20B010	Monitor for leakage in the verification tank drainage sump.	Continuously	Computer Process Operator
Secondary Treatment Train			
Level alarm LAHL-60I-001A/B	Monitor liquid levels in secondary waste receiver tanks A and B to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60J-001A/B	Monitor liquid levels in concentrate tanks A and B to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60I-107	Monitor liquid levels in the evaporator tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60J-036	Monitor liquid levels in the spray condenser tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60I-108	Monitor liquid levels in the distillate flash tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAH-60I-119	Monitor liquid levels in the entrainment separator tank to prevent overflow.	Continuously	Computer Process Operator
Level transmitter LAH-20B001	Monitor liquid level in sump tank No. 1 to prevent overflow.	Continuously	Computer Process Operator
Level transmitter LAH-20B002	Monitor liquid level in sump tank No. 2 to prevent overflow.	Continuously	Computer Process Operator

Table 6-2. Inspection Plan for Instrumentation Monitoring
(Sheet 2 of 2)

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Item	Inspection	Frequency	Inspected by
Leak detector LAH-20B003	Monitor for leakage to sump No. 1.	Continuously*	Computer Process Operator
Leak detector LAH-20B005	Monitor for leakage to sump No. 2.	Continuously*	Computer Process Operator
Leak detector	Monitor for leakage from pipeline between ETF and load-in station.	Continuously*	Computer Process Operator
Leak detector	Monitor for leakage from pipeline between ETF and LERF.	Continuously*	Computer Process Operator
Leak detector	Monitor for leakage from pipeline between LERF and the 242-A Evaporator.	Continuously*	Computer Process Operator

* In the event of a malfunction of one of the electronic leak detectors, daily visual inspections will be performed while the facilities are in operation.

**Hanford Facility RCRA Permit Modification Notification Forms
for
Part III, Chapter 2 and Attachment 18
305-B Storage Facility**

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.1]

Description of Modification:

Section 4.1.1.1., page 4-1, line 19-27:

Containers in poor condition or inadequate for storage are not accepted at the unit. If transport is by unit personnel, such containers are not accepted for transport. See Section 6.4.1 for inspection prior to transport performed by unit personnel. "Container in poor condition or inadequate for storage" means a container which is not intact or undamaged and which is not securely sealed to prevent leakage during storage, transport and ultimate offsite disposal. Examples of acceptable packagings include laboratory reagent bottles, DOT containers, spray cans, sealed ampules with spetums, paint cans, leaking containers which have been overpacked, etc. Unit operations personnel have the authority to determine whether a container is in poor condition or inadequate for storage, using the criteria of WAC 173-303-190 and professional judgement whether the packaging may leak during handling, storage and/or disposal.

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

A. K. Ikenberry 9-22-98
A. K. Ikenberry Date

Reviewed by RL Program Office:

R.F. Christensen 9/30/98
R.F. Christensen Date

Reviewed by Ecology:

J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.1]

Description of Modification:

Section 4.1.1.1., page 4-1, lines 39-40:

All containers utilized for offsite transport of dangerous wastes at the unit are selected and shall according to the container selection criteria found in WAC 173-303-190(1). Containers utilized for off-site shipment shall also comply with all applicable criteria found in WAC 173-303-190.(2) and (3). 305-B personnel shall comply with WAC 173-303-190(4).

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> 9-22-98	<i>R.F. Christensen</i> 9/30/98	
A. K. Ikenberry Date	R.F. Christensen Date	J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

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Hanford Facility RCRA Permit Modification Notification Form				
Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4.1.1.2]			
<u>Description of Modification:</u>				
Section 4.1.1.2., page 4-2, lines 38-43:				
Lab packs are prepared in the storage cell containing the hazard class(es) to be placed in the lab pack. The elephant trunk ventilator system may be is used to minimize respirable dusts from the absorbent material being used (usually vermiculite). Lab packs may also be prepared in the flammable liquid bulking module if appropriate; for instance, if compatible materials from more than one storage cell are being combined in a single lab pack drum. Lab packs may be prepared in the high bay storage area if storage of the completed lab pack is permitted there per Section 4.3.2.				
Modification Class: ¹²³	Class 1	Class ¹	Class 2	Class 3
Please check one of the Classes:	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u>				
A. General Permit Provisions:				
1. Administrative and informational changes.				
Submitted by Co-Operator:				
<i>Alice K. Ikenberry</i> A. K. Ikenberry	<i>9-22-98</i> Date	Reviewed by RL Program Office:	<i>R.F. Christensen</i> R.F. Christensen	<i>9/30/98</i> Date
Reviewed by Ecology:			J. J. Wallace	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.2]

Description of Modification:

Section 4.1.1.2, page 4-3, lines 11-13:

~~Compatibility of w~~Wastes to be bulked are fully characterized under the 305-B unit waste analysis plan in Section 3.2. ~~Compatibility~~ is determined using the information from generating unit designation information, process knowledge, laboratory analyses, and/or the compatibility determinations described in Section 6.5.2.

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

A. K. Ikenberry *9-22-98*
A. K. Ikenberry Date

R.F. Christensen *9/30/98*
R.F. Christensen Date

J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4.1.1.5 & 4.1.1.6]			
<u>Description of Modification:</u> Section 4.1.1.5. and 4.1.1.6, page 4-5, lines 4-14: Flammable RMW is stored within its own secondary containment devices. The description and capacity of the flammable RMW storage area is provided in 4.1.1.6.11. Small containers of flammable RMW are stored in a storage cabinet as noted in Section 4.3.1. Larger containers are stored in individual secondary containment devices (i.e., drip pans) to prevent runoff or mingling of spilled contents as described in Section 4.1.1.6.10.				
4.1.1.6 Containment System Capacity [D-1a(6)] Secondary containment is provided for all dangerous wastes stored at the 305-B unit. Storage limits for all chemicals are listed in Table 4-1 (1988 Uniform Building Code). All floors in the high bay area are sloped toward sumps which have no drains and are covered with grating to prevent safety hazards. In addition, all floors in the high bay area are coated with an epoxy based coating as described in Section 4.1.1.4. Inspection of the containment system to maintain integrity is described in Section 6.2. Individual secondary containment systems are configured as follows:				
Modification Class: ¹²³ Please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions: 1. Administrative and informational changes.				
Submitted by Co-Operator: <i>Alice K. Ikenberry</i> A. K. Ikenberry	9-22-98 Date	Reviewed by RL Program Office: <i>R.F. Christensen</i> R.F. Christensen	9/30/98 Date	Reviewed by Ecology: J. J. Wallace Date

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² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.1]

Description of Modification:

Section 4.1.1.6.1, page 4-5, lines 16-21:

4.1.1.6.1 Acids and Oxidizers Cell. The acids and oxidizers cell (cell 1) is located at the northwest corner of the 305-B unit high bay floor. The cell is constructed of epoxy-painted concrete block walls 4' high and incorporates a 1' deep sump at the west end of the cell. Six cabinets, open shelving, and a large-container storage area are provided within the cell to allow storage of various sizes of containers. ~~store containers of recyclable materials and dangerous wastes.~~ The secondary containment volume of the individual sump for this cell is 67 gallons, and the total containment volume of the cell is 774 gallons. A diagram of the cell is provided in Figures 4-1. ~~Storage capacity of the cell is limited by the UBC to not more than, 6000 cubic feet of oxidizing gases, 1000 lbs of ammonium nitrate and ammonium nitrate mixtures, and 500 lbs of solid oxidizers. A diagram of the cell is provided in Figure 4-1.~~

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>Alicia K. Ikenberry</i> A. K. Ikenberry	<i>R.F. Christensen</i> R.F. Christensen	J. J. Wallace
9/22/98 Date	9/30/98 Date	_____ Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.2 & 4.1.1.6.3]

Description of Modification:

Section 4.1.1.6.2 and 4.1.1.6.3, page 4-5, lines 23-39:

4.1.1.6.2 Poisons and Class 9 Cell. The poisons and Class 9 cell (cell 2) is located just south of the acids and oxidizers cell along the west wall of the high bay. This cell is also constructed of epoxy-painted concrete block walls 4' high and incorporates a 1' deep sump along its west end. Three storage cabinets and several sets of open shelving are positioned in the cell to allow storage of various sizes of containers. The northeast corner of the cell is sectioned off with a 6" spill retention berm to allow PCB storage for disposal complying with 40 CFR 761.65(b). The secondary containment volume of the individual sump for this cell is 117 gallons, and the total containment volume of the cell is 782 gallons. ~~Due to space limitations, no more than 800 gallons of liquid poisons and/or Class 9's will be stored at one time. There is no UBC restriction on storage of poisons or Class 9's at the 305-B unit.~~ A diagram of this cell is provided in Figure 4-2.

4.1.1.6.3. Alkaline, Caustics, Washington State Criteria-Only Wastes, Organic Peroxides, and Non-Regulated Waste Cell. The alkaline, caustics, Washington State only waste, and non-regulated waste cell (cell 3) is located adjacent to the poisons and Class 9 cell on the west wall of the high bay area. This cell is also constructed of epoxy-painted concrete block walls 4' high and incorporates a 1' deep sump along its west end. Four storage cabinets, 3 sets of open shelving, and 1 explosion proof refrigerator, are positioned in the cell to allow storage of various sizes of containers. The secondary containment volume of the individual sump for this cell is 137 gallons, and total containment volume of the cell is 764 gallons. ~~Due to space limitations, no more than 800 gallons of liquids will be stored at one time in this cell.~~ A diagram of this cell is provided in Figure 4-3.

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> 9/22/98 A. K. Ikenberry Date	<i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date	J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.4]

Description of Modification:

Section 4.1.1.6.4, page 4-5, lines 41-50; and page 4-6, lines 1-2:

4.1.1.6.4 Organics Cell. The organics cell (cell 4) This cell is located south of the alkaline caustics, Washington State-only waste, and non-regulated waste cell. As with the other three cells described above, this cell is constructed of epoxy-painted concrete block walls 4' high and incorporates a 1' deep sump along its west end. The secondary containment volume of the individual sump for this cell is 119 gallons, and total containment volume of the cell is 687 gallons. A diagram of this cell is provided in Figure 4-4.

Ignitable organic waste materials are stored in this cell that also unless they are non-ignitable and exhibit the characteristics of corrosivity, toxicity as well as or reactivity. Three Factory Mutual-approved flammable liquid storage cabinets are utilized for storage of various classes of flammable liquids as defined by the UFC. The capacities of the various cabinets are shown in Table 4-2 Section 4.3.1. The following cabinets also are used for storage in this cell: one for combustibles, one for aerosols, two for flammable solids, and one for overflow from one of the other cabinets.

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

A. K. Ikenberry 9-22-98
A. K. Ikenberry Date

R.F. Christensen 9/30/98
R.F. Christensen Date

J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.4 & 4.1.1.6.5]

Description of Modification:

Section 4.1.1.6.4 and 4.1.1.6.5, page 4-6, lines 19-26:

To maintain required aisle spaces and functional usability, the liquid capacity of the organics cell (cell 4) the hydrocarbon cell is set at 1000 gallons.

4.1.1.6.5 Flammable Liquids Bulking Module. The flammable liquids bulking module (cell 5), along with its purpose of providing a ventilated area for bulking of compatible ignitable hydrocarbon wastes, is used as an independent storage cell. Secondary containment is provided by the walls of the module, which have been sealed at the floor joint by use of grout coated with epoxy paint. Flammable gases in cylinders, liquefied flammable gases, and oxidizing gases will be stored in the bulking module.

Modification Class: ¹²³	Class 1	Class ¹	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date	<i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.5.a]

Description of Modification:

Section 4.1.1.6.5.a, page 4-6, line 31-39:

4.1.1.6.5.a. Flammable Liquids Storage Module. The flammable liquids storage module is a self-contained storage module (cell 8) that allows additional storage space for flammable wastes. Located on the southeast wall, it is connected to the buildings fire suppression system. The flammable storage module has a 2-hour fire rated containment system so that according to the UFC, an unlimited capacity is allowed. However, the flammable waste storage capacity of the flammable liquid storage module is limited by the 240 gal. capacity of the module's secondary containment system. No more than 240 gal of any combination of flammable liquid classes will be stored in the module. This flammable waste storage capacity is in addition to the flammable storage limits for the highbay. A diagram of the module is provided in Figure 4-10.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

- Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date	<i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form				
Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4, Figure 4-2]			
<u>Description of Modification:</u> Section 4, page 4-8, Figure 4-2, lines 23-27: 2A Poisons (P>G>H and III) (Large Cabinet) 2B Poisons (P>G>I) (Large Cabinet) 2C Class 9 (nonreactive) (Large and Small Shelf) 2D Class 9 (reactives) (Large Cabinet) 2E PCB's				
Modification Class: ^{1 2 3} Please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions: 1. Administrative and informational changes.				
Submitted by Co-Operator: <i>A. K. Ikenberry</i> <u>9-22-98</u> A. K. Ikenberry Date	Reviewed by RL Program Office: <i>R.F. Christensen</i> <u>9/30/98</u> R.F. Christensen Date	Reviewed by Ecology: J. J. Wallace Date		

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4, Figure 4-3]

Description of Modification:

Section 4, page 4-9, Figure 4-3, lines 1-38:

Figure 4-3. Alkaline, Washington State Criteria Waste, Organic Peroxides, ~~Washington-Only~~ and Non-Regulated Waste Cell

- ~~3A1A~~ Alkaline (liquids and solids) ~~Liquid Oxidizers~~ (Medium Cabinet)
~~3B1B~~ Alkaline/Oxidizers ~~Solid Oxidizers~~ (Small Cabinet)
~~3C1C~~ Organic Peroxides and temperature sensitive (refrigerator) ~~Inorganic Acids~~ (Medium Cabinet)
~~3D1D~~ Washington State Criteria Waste (2 large shelves) ~~Organic Acids (corrosive)~~ (Small Cabinet)
~~3E1E~~ Non-Regulated Liquids/Solids ~~Mercury/Corrosive Solids~~ (Small Shelf)

15.24cm W x 127CM H epoxy coated concrete block wall

Secondary Containment Trench

— Drum and Carboy Storage Area

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>Alice K. Ikenberry</i> 7/22-98 A. K. Ikenberry Date	<i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.6 & 4.1.1.6.7]

Description of Modification:

Sections 4.1.1.6.6 and 4.1.1.6.7, page 4-10, lines 1-19:

4.1.1.6.6 Ignitable Waste Drum Storage Area. An additional section of the high bay (cell 8) has been dedicated to storage of drum quantities of ignitable waste prior to offsite shipment. The area is bordered on the north and south sides by angle iron (3½"x6") bolted to the floor (see Plate 2, Appendix 4A for detail) and sealed to provide secondary containment. The area is approximately 15'x7'. To further enhance containment and to allow greater storage capacity, the drums stored in this area are stored in flammable liquid drum storage cabinets.

Sump containment capacity of this area is approximately 224 gallons and total containment capacity is approximately 431 gallons. Maximum storage in this area is approximately six 55-gallon drums and 12 five-gallon drums. A diagram of this area is included in Figure 4-6. Additional ignitable waste storage is provided for in cell 4, organics cell, and the in the Highbay storage area. The high bay storage area has five additional flammable liquid drum storage cabinets located along the west side of the high bay (see Figure 4-7). All of this ignitable waste storage is provided for utilizing flammable liquid storage cabinets for added safety.

4.1.1.6.7 Oxidizer Waste Drum Storage Area. A second section of the high bay (cell 12) has been dedicated to storage of drum quantities of oxidizer waste prior to offsite shipment. The area is constructed similarly to the ignitable waste drum storage area (see above) and is also 10'x7' in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>Alice K. Ikenberry</i> <i>9-22-98</i> A. K. Ikenberry Date	<i>R.F. Christensen</i> <i>9/30/98</i> R.F. Christensen Date	 J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.8 & 4.1.1.6.9]

Description of Modification:

Sections 4.1.1.6.8 and 4.1.1.6.9, page 4-10, lines 25-38:

4.1.1.6.8 Acid Waste Drum Storage Area. A third section of the high bay (cell 13) has been designated for storage of drum quantities of acid waste prior to offsite shipment. The area is approximately 10'x10' in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident. Bulked drums containing acids, with oxidizers as a secondary hazard, will be placed in the cell 1 drum area, to prevent any possibility of a reaction with surrounding hazards in the high bay drum storage area. A diagram of this area is included in Figure 4-6.

4.1.1.6.9. Caustic Waste Drum Storage Area. A fourth section of the high bay (cell 14) has been designated for storage of drum quantities of caustic waste prior to offsite shipment. The area is approximately 22'x15' in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident. Sump containment capacity in this area is approximately 110 gallons and total containment capacity is approximately 380 gallons. Maximum storage in this area is thirty-two 55-gallon drums. The location of the area is shown on the High Bay Storage Area diagram Figure 4-7.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> <i>9-22-98</i> A. K. Ikenberry Date	<i>R.F. Christensen</i> <i>9/30/98</i> R.F. Christensen Date	 J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4.1.1.6.10]			
<u>Description of Modification:</u> Section 4.1.1.6.10, page 4-10, lines 45-46: Due to space limitations in the individual cells, and for ease of mechanical handling, the high bay floor is typically used for storage of nonradioactive chemicals in drums. There is also capacity for six drums of ignitable waste storage inside of four flammable liquid drum storage cabinets located along the west side of the high bay (see Figure 4-7).				
Modification Class: ¹²³ Please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions: 1. Administrative and informational changes.				
Submitted by Co-Operator: <i>Alice K. Ikenberry</i> <u>9-22-98</u> A. K. Ikenberry Date	Reviewed by RL Program Office: <i>RF Christensen</i> <u>9/30/98</u> R.F. Christensen Date	Reviewed by Ecology: J. J. Wallace Date		

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4.1.1.6.11]			
<u>Description of Modification:</u> 4.1.1.6.11, page 4-16, lines 19-29: <i>4.1.1.6.11 Flammable RMW Storage Area.</i> Due to UBC restrictions, flammable radioactive mixed waste cannot be stored in the basement of 305-B with the other radioactive mixed waste. The flammable RMW received by 305-B for storage prior to disposal is stored in a separate area above grade in the east portion of the building in a 7'x 7'x 7' flammable liquid storage module (cell 7). The module is Factory Mutual approved and has four-hour fire rated walls and doors. The module has a self-contained internal dry chemical fire suppressant system. The module has a 90-gallon polyethylene coated sump. The module is lag bolted to the concrete floor in the flammable RMW storage area indicated in Figure 4-8. The module has a storage capacity of four 55-gallon drums, or up to 250 gallons of total capacity of all containers stored, whichever is greater. This storage area meets the requirements of a one year PCB storage area as defined in 40 CFR 761.65, so flammable mixed waste, also regulated as PCB waste, may be stored in this location. A diagram of this cell is provided in Figure 4-8.				
Modification Class: ¹²³ Please check one of the Classes:	Class 1	Class ¹	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions: 1. Administrative and informational changes.				
Submitted by Co-Operator: <i>A. K. Ikenberry</i> A. K. Ikenberry	9-22-98 Date	Reviewed by RL Program Office: <i>R.F. Christensen</i> R.F. Christensen	9/30/98 Date	Reviewed by Ecology: J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4, Figure 4-8]

Description of Modification:

Section 4, page 4-17, Figure 4-8, lines 29-36:

LEGEND

- 1 Flammable RMW Storage Module
- 2 Removable hatch cover for basement access (surrounded by railing)
- 3 Nonhazardous supplies storage

All PCB waste stored in Cell 9 shall be stored in trays, or drum overpacks that meet all the requirements of 40 CFR 761.65(b).

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

- 1. Administrative and informational changes.

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

A. K. Ikenberry 9-22-98
A. K. Ikenberry Date

R.F. Christensen 9/22/98
R.F. Christensen Date

J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4, Figure 4-9]

Description of Modification:

Section 4, page 4-19, Figure 4-9, lines 17-35:

Cell 7 Legend

7A Poisons
 7B Oxidizers
 7C Class 9/Combustible
 7D Washington Only/Combustible
 7E Flammable Solids
 7F Corrosive Base/Combustible
 7G Corrosive Acid/Combustible
 7H Corrosive/PCB's/Combustible
 7I Corrosive Acid/PCB's/Combustible
 7J PCB's/Combustible
 7K Washington Only/Class 9/PCB's/Combustible
 7L Non-Regulated/Combustible
 7M Washington State Waste/ Class9/ Non-Regulated/ Combustible/ Compatibles
 HOOD 121.9cm L x 54.2cm D x 228.6cm H

All PCB waste stored in Cell 7 will be segregated according to chemical compatibility, and stored in any of the four stainless steel container pans complying with 40 CFR 761.65(b)

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

A. K. Ikenberry 9-22-98
A. K. Ikenberry Date

R.F. Christensen 9/30/98
R.F. Christensen Date

J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4, Table 4-1]			
<u>Description of Modification:</u> Section 4, page 4-20 and 4-21, Table 4-1: Replace Table 4-1, with revised Table 4-1. Reason: Table 4-1 contained a complete version of the Uniform Building Code Limits for the 305-B Storage Unit.				
Modification Class: ¹²³ Please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions: 1. Administrative and informational changes.				
Submitted by Co-Operator: <i>A. K. Ikenberry</i> <i>9-22-98</i> A. K. Ikenberry Date	Reviewed by RL Program Office: <i>R.F. Christensen</i> <i>9/30/98</i> R.F. Christensen Date	Reviewed by Ecology: J. J. Wallace Date		

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 6.1]			
<u>Description of Modification:</u> Section 6.1, page 6-1, lines 9-29: 6.1 SECURITY [F-1] Security for 305-B is provided by a combination of the overall security system for the 300 Area, and a specific security system for the waste storage unit. The former controls access to the 300 Area proper, while the latter controls access to 305-B. The 305-B Storage Unit is located within the Hanford 300 Area. As part of the Hanford Site, the 300 Area is subject to a restricted access and personnel security system for the protection of Government property, classified information, and special nuclear materials. The 300 Area is a controlled access area with access limited to persons authorized to enter and having appropriate security clearances or escorts. The security program for 305-B, in addition to 300 Area access, is designed to limit building access to those personnel within the 300 Area authorized to enter the unit. Access to 305-B can be gained through five walk-in doors, and two large roll up doors which facilitate loading and unloading activities. All doors to 305-B are kept locked at all times except when in use. All requests for keys are reviewed and approved by the unit operating supervisor and the building manager, and a record of the personnel issued keys is kept in the Operating Record at all times. Keys to the unit are issued only to unit personnel, security personnel, and emergency response personnel. Any additions to this list are approved by the unit operating supervisor, the line manager, and the building manager and are noted in the operating record of the unit. Specific aspects of the security programs for both the 300 Area and 305-B Storage Unit are described in more detail below.				
Modification Class: ¹²³ Please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions: 1. Administrative and informational changes.				
Submitted by Co-Operator: Reviewed by RL Program Office: Reviewed by Ecology:				
<i>A. K. Ikenberry</i> A. K. Ikenberry	<i>9-22-98</i> Date	<i>R.F. Christensen</i> R.F. Christensen	<i>9/30/98</i> Date	J. J. Wallace Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.1.1.1]

Description of Modification:

Section 6.1.1.1, page 6-3, lines 6-11:

Entry to the unit is controlled through the use of locked entrances. The 305-B Storage Unit is kept locked at all times except when in use. Physical control of keys and records of key distributions are maintained by PNNL Security. Distribution of keys to 305-B is subject to approval by the manager of the waste management organization, the building manager, and the facility operating supervisor, and a list of those personnel in possession of keys is kept in the Operating Record for 305-B. Personnel in possession of keys have been instructed to admit only persons having official business. All visitors to the unit must be escorted by waste management organization personnel.

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> <u>9-22-98</u>	<i>R.F. Christensen</i> <u>9/30/98</u>	
A. K. Ikenberry Date	R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.2.1.1]

Description of Modification:

Section 6.2.1.1, page 6-4, lines 1-6:

Weekly Inspections. Waste management organization personnel conduct weekly inspections of both safety and operating equipment in 305-B. Safety and emergency equipment are inspected for functionality and adequacy of supply. The weekly inspection is conducted by two personnel on the last workday of each week using the inspection Logbook and the most current version of the Weekly Inspection Checklist Form that is on file at 305-B. (Fig. 6-2) and Inspection Logbook. An example of a Weekly Inspection Checklist is shown in Fig. 6-2. The Inspection Checklist and Inspection Logbook become a permanent part of the 305-B Operating Record.

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

Alice K. Ikenberry

9-22-98

R.F. Christensen

9/30/98

A. K. Ikenberry

Date

R.F. Christensen

Date

J. J. Wallace

Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.2.1.1]

Description of Modification:

Section 6.2.1.1, page 6-4, lines 19-33:

Monthly Inspections. Monthly oversight inspections are conducted by the manager of the Environmental Management Services Department waste management organization or their his designee. This monthly inspection is conducted on or near the last workday of each month using the most current version of the Monthly Inspection Checklist Form. A example of a Monthly Inspection Form is shown in (Fig. 6-3). Items targeted for monthly inspection include, but are not limited to, equipment function and condition, housekeeping, chemical inventory, weekly inspections and corresponding corrective actions, safety equipment operation, spill control and cleanup supplies, and general packaging material inventory. Specific problems to be looked for with each of the items inspected are identified on the Inspection Checklist Form. An internal memorandum from the manager of the waste management organization to the Laboratory Safety Department manager reports the findings of the monthly inspections. Copies of the inspection report memorandum are provided to operations personnel and maintained in the files of the waste management organization. Any corrective action noted on the management inspection checklist or deterioration or malfunctions in equipment discovered by the inspector are delegated to responsible individuals in the operations group. Corrective actions identified in the monthly management inspection must be completed before the next inspection cycle within two weeks unless there are documentation and reason for further delay. Monthly management inspection report memos and corrective action response documentation are part of the 305-B Operating Record.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>Alice K. Ikenberry</i> 9-22-98	<i>R.F. Christensen</i> 9/30/98	
A. K. Ikenberry Date	R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.2.1.1]

Description of Modification:

Section 6.2.1.1., page 6-7, lines 5-11:

PNNL facilities support staff perform additional documented inspections of the two emergency eye wash/shower units, and the walk-in hood air flow, and the elephant trunk ventilators air flow. The safety showers and air flow of the walk-in hood and elephant trunk ventilators are inspected quarterly. The emergency eyewash/safety showers are checked for proper operation, and the walk-in hood and elephant trunk ventilation face velocity must meet a 125-fpm minimum requirement. Records of these safety equipment inspections and their results, as well as documentation of any required corrective actions, are maintained by the preventive maintenance staff in PNNL's Facilities Management Department and Technical Services Department.

Modification Class: ¹²³

Class 1

Class¹1

Class 2

Class 3

Please check one of the Classes:

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>Alicia K. Ikenberry</i> 9-22-98	<i>R.F. Christensen</i> 9/24/98	
A. K. Ikenberry Date	R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 6.2.1.2]
--	--

Description of Modification:

Section 6.2.1.2., page 6-7, lines 13-15:

6.2.1.2. Frequency of Inspections [F-2a(2)]

Inspections are conducted on a daily, weekly, monthly, quarterly, and annual basis, as described in Section 6.2.1.1.

Modification Class: ¹²³	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date	<i>R. F. Christensen</i> 9/30/98 R. F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.2.2.1]

Description of Modification:

Section 6.2.2.1, page 6-7, lines 42-49:

6.2.2.1 Container Inspection [F-2b(1)]

When in use, dDangerous and mixed waste storage areas, as well as containers stored at 305-B are inspected daily for leakage, evidence of damage or deterioration, proper and legible labeling, and proper lid and bung closure. When work is being performed, tThe containment system is also checked on a daily basis for accumulation of any wastes which may have been spilled into them. Structural integrity of the containment systems is checked on a weekly basis.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date	<i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Figure 6-2]

Description of Modification:

Page 6-8, Figure 6-2. Monthly Inspection Checklist:

Date/Time _____ Inspector (Print/Sign) _____

*Corrective actions are required within the next inspection cycle two weeks.

Modification Class: ^{12 3}	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions:
1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> <i>9-22-98</i>	<i>R.F. Christensen</i> <i>9/30/98</i>	_____
A. K. Ikenberry Date	R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.3.1.1]

Description of Modification:

Section 6.3.1.1, Page 6-10, lines 14-18:

The telephone system is to be used to provide verbal emergency instructions to 305-B staff. The telephone can also be used to verbally transmit emergency data to non-305-B staff, and to request emergency services. A network of telephones covers both floors of the facility. Locations of telephones are shown in Figure 6-4. In addition to the telephone communication system at 305-B, operation personal have access to the hand held radios, as well as one in each vehicle assigned to the facility.

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

Alice K. Ikenberry 9/22/98
A. K. Ikenberry Date

R.F. Christensen 9/30/98
R.F. Christensen Date

J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form				
Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 6.3.1.2]			
<u>Description of Modification:</u>				
Section 6.3.1.2., page 6-10, lines 20-26:				
6.3.1.2 External Communications [F-3a(2)]				
As mentioned in Section 6.3.1.1 above, both a fire alarm system and telephone network system are in place at 305-B. Both systems can be used to summon emergency assistance. The fire alarm system summons direct response from the Hanford Fire Department's 300 Area Station. The telephone system can be used to access Hanford's Emergency Network directly at 375-2400 or by dialing the emergency number, 8911. Locations of fire alarm pull boxes and telephones are given in Figure 6-4.				
Modification Class: ^{1 2 3}	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u>				
A. General Permit Provisions:				
1. Administrative and informational changes.				
Submitted by Co-Operator:	Reviewed by RL Program Office:		Reviewed by Ecology:	
<i>A. K. Ikenberry</i> <i>9-22-98</i>	<i>R.F. Christensen</i> <i>9/30/98</i>			
A. K. Ikenberry Date	R.F. Christensen Date	J. J. Wallace	Date	

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Table 6-2]

Description of Modification:

Table 6-2, Page 6-13:

Table 6-2. Material and Equipment for Spill Containment and Cleanup:

Absorbent Pillows or Booms	Three cartons, each containing booms or 12 pillows	To be used for diking or damming and absorption of spilled materials	Each boom or pillow can absorb slightly more than 1 L of liquid.
----------------------------	--	--	--

Modification Class: ¹²³	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions:
1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> <i>9-22-98</i> A. K. Ikenberry Date	<i>R.F. Christensen</i> <i>9/30/98</i> R.F. Christensen Date	 J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.4.5]

Description of Modification:

Section 6.4.5, page 6-14, lines 1-23:

6.4.5. Personnel Protection Equipment [F-4e]

Protective clothing and equipment are provided to employees during normal and emergency operations. During routine operations, the maximum number of employees working in the 305-B unit is less than fifteen ten. For dry chemical handling activities, such as labpacking, the minimum protection requirement is eye protection (safety glasses with side shields or chemical goggles), lab coat, and chemical resistant gloves (plastic or other construction as appropriate). Protection levels for other operations, such as bulking, and emergency situations are determined in consultation with a PNNL industrial hygienist, and staffing levels are revised according to the availability of proper protective equipment as shown below. Protective clothing and equipment available in the 305-B Storage Unit includes:

- ◆ 6 sets of chemically resistant suits, aprons, boots, and gloves
- ◆ 20 pairs of extra protective eyeglasses
- ◆ 3 SCBA
- ◆ 5 pairs of chemical goggles
- ◆ 4 face shields
- ◆ 4 full-face respirators with appropriate cartridges.

This protective equipment is stored in cabinets located outside of the operating area east entrance and is well stocked at all times. The location of the storage cabinets is given in Figure 6-4. This equipment is periodically replaced as it is used. The above inventory reflects the quantities of each type of PPE that are typically present at 305-B. Minimum quantities required to be present are given in the weekly inspection checklist, Figure 6-2.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> 9-22-98	<i>R.F. Christensen</i> 9/30/98	J. J. Wallace
A. K. Ikenberry Date	R.F. Christensen Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.5.1]

Description of Modification:

Section 6.5.1, page 6-14, lines 30-53; and page 6-15, lines 1-6:

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

305-B may be used to store a variety of ignitable wastes. Precautions to prevent ignition of ignitable wastes involve separation of wastes from sources of ignition and use of procedures which minimize the potential for accidental ignition. There are no routine sources of ignition or open flame in 305-B. Work with ignition or heat sources, if required, is limited and controlled by PNNL management and is performed in compliance with internal PNNL health and safety procedures for elimination of ignition sources. These internal procedures:

- Prohibit use of open flame equipment when working with flammable liquids
- Prohibit smoking around flammable liquids [No smoking is allowed at 305-B]
- Require electrical equipment used in flammable or explosive atmospheres to comply with the National Electrical Code, NFPA 70
- Require use of equipment with automatic, adjustable temperature controls and high-temperature limit switches to prevent overheating
- Prohibit placement of flammable liquids on hot surfaces
- Require all static electricity sources to be grounded in areas where ignitable vapors may be present
- Require bonding of conductive containers when transferring flammable liquids.
- Require use of non-sparking tools in flammable waste storage areas

All maintenance or modifications that require work with ignition sources must receive prior approval by a PNNL Safety Engineer. This approval is documented in the Operating Record. Smoking is not allowed in 305-B at any time and the interior and exterior of the facility are clearly posted with "No Smoking" signs. Waste storage areas are not heated by any radiant heat source. All tools used to open ignitable waste containers are constructed of nonsparking materials.

Ignitable waste storage areas are inspected annually by a PNNL fire safety engineer familiar with the Uniform Fire Code. This inspection is documented in the Operating Record. There are also storage restrictions at 305-B for combustible wastes as part of fire safety requirements. The storage restrictions defined in the Uniform Building Code for Class B Occupancy apply to 305-B (International Conference of Building Officials 1988). These restrictions are given in Table 4-1. The weekly inspection for 305-B includes checking to see if the inventory of combustibles is below these limits. These inspections are documented in the Operating Record.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<i>A. K. Ikenberry</i> A. K. Ikenberry	<i>R.F. Christensen</i> R.F. Christensen	J. J. Wallace
9-22-98 Date	9/30/98 Date	Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.5.2]

Description of Modification:

Section 6.5.2, page 6-15, lines 8-24:

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

As described in Section 6.5.1, ignitable wastes are managed in a manner which protects the wastes from sources of ignition or open flame. Ignitable waste containers are maintained in good condition and inspected weekly to minimize the potential for releases which could result in fire. Containers of ignitable waste are protected from high temperature to prevent the potential for pressurization and buildup of ignitable vapors. Containers of ignitable waste are stored in flammable material storage cabinets within waste storage cells, as described in Section 4.1.1.6. Limitations on sizes of containers and amounts of storage in cabinets are found in Section 4.3.1.

Because of the wide variety of wastes which may be accepted at 305-B, the potential exists for storage of incompatible wastes. Mixing of incompatible wastes is prevented through waste segregation and storage procedures. Chemical wastes stored in 305-B are separated by compatibility and hazard class and stored in separate storage cells. Separate storage shelves and cabinets are used within the storage cells, as described in Section 4.1.1.6, to provide further waste segregation. Prior to accepting unfamiliar wastes from generators, waste management organization staff determine the Reactivity Group Number as per *A Method for Determining the Compatibility of Hazardous Wastes* (EPA 1980) for each waste so that wastes may be stored with compatible materials. The following general guidance is used to segregate and separate chemicals:

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
<p><i>A. K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date</p>	<p><i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date</p>	<p>J. J. Wallace Date</p>

¹Class 1 modifications requiring prior Agency approval.

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³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form				
Unit: 305-B Storage Facility		Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 8.1.1]		
Description of Modification: Section 8.1.1., page 8-1, lines 21-45:				
8.1.1. Job Titles and Job Descriptions [H-1a]				
The Unit Operating Supervisor is responsible for the daily operation of 305-B in compliance with regulations administered under RCRA, the State of Washington Dangerous Waste Regulations (WAC 173-303), and PNNL waste operating procedures.				
The Unit Operating Supervisor is ultimately responsible for assessing 305-B compliance, conducting inspections and overseeing any corrective actions which may result from them, ensuring waste handling and storing procedures are followed, and serving as BED to implement proper emergency procedures when necessary. In addition to the responsibilities mentioned above, it is the role of the Unit Operating Supervisor to direct new employees so that successful completion of introductory and on-the-job training will be accomplished in the first six months of employment.				
The RMW Waste Management staff Engineer is responsible for the mixed waste operation of 305-B. This staff member must review all mixed waste disposal requests and ensure their accuracy and reliability. In addition, the RMW Waste Management staff Engineer will dispatch a pickup team and oversee mixed waste pickup and transportation to the 305-B Storage Unit. When adequate volumes of mixed waste have accumulated to warrant disposal of the waste, the RMW Waste Management staff Engineer is responsible for readying the waste for shipment. These duties include packaging, labeling, manifesting, and recordkeeping.				
The Waste Management Engineers are responsible for evaluating unit compliance, managing the PNNL PCB waste stream, managing the waste designation data base, and overseeing waste designations. Waste Management Engineers also perform waste management operations such as pickup and lab packing of small containers. They also oversee offsite shipping of wastes and ensure compliance with DOT regulations.				
Modification Class: ¹²³	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			
Relevant WAC 173-303-830, Appendix I Modification: B.5.b.				
Enter wording of the modification from WAC 173-303-830, Appendix I citation:				
B. General Facility Standards:				
5. Changes in the training plan:				
b. Other changes that update the current job titles and responsibilities of facility staff:				
Submitted by Co-Operator:		Reviewed by RL Program Office:		Reviewed by Ecology:
<i>Alice K. Ikenberry</i>	<i>9-22-98</i>	<i>R.F. Christensen</i>	<i>9/30/98</i>	
A. K. Ikenberry	Date	R.F. Christensen	Date	J. J. Wallace
				Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Figure 8-1]									
<u>Description of Modification:</u> Figure 8-1, page 8-2, Footnote: Staff Position Key: OS Unit Operations Supervisor E RMW and Waste Management Engineers TS Waste Management Technicians and Scientist/Engineering Associates Technical Specialists C Waste Management Clerks										
² Requirements Key: A Annually; B Biennially; T Triennially; I Initially upon assignment to the unit; N Not Required.										
³ Required for female staff only. This information is given in the various radiation safety classes and is not a separate stand alone class.										
⁴ Successful completion of this course meets the requirements of the Hazardous Waste Shipment Certification course. Required for RMW Engineers and any TS that has the assigned duty of signing for onsite radioactive shipments.										
⁵ Required for any TS that has the assigned duty of making waste designations.										
Modification Class: ¹²³	Class 1	Class ¹ 1	Class 2	Class 3						
Please check one of the Classes:	X									
Relevant WAC 173-303-830, Appendix I Modification: B.5.b										
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> B General Facility Standards: 5. Changes in the training plan: b. Other changes to reflect current job descriptions and regulatory changes:										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center;"> Submitted by Co-Operator: </td> <td style="width: 33%; text-align: center;"> Reviewed by RL Program Office: </td> <td style="width: 33%; text-align: center;"> Reviewed by Ecology: </td> </tr> <tr> <td style="text-align: center;"> <i>Arie K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date </td> <td style="text-align: center;"> <i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date </td> <td style="text-align: center;"> J. J. Wallace Date </td> </tr> </table>					Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:	<i>Arie K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date	<i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date	J. J. Wallace Date
Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:								
<i>Arie K. Ikenberry</i> 9-22-98 A. K. Ikenberry Date	<i>R.F. Christensen</i> 9/30/98 R.F. Christensen Date	J. J. Wallace Date								

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 8.1.3]			
<u>Description of Modification:</u> Section 8.1.3, page 8-3, lines 43-48; and page 8-4, lines 1-2: 8.1.3. Training Coordinator [H-1c] Training at PNNL is provided by a number of specialists in their fields, including a Training Coordinator from the waste management organization who is responsible for coordinating dangerous waste training. The position of Training Coordinator is filled by facility staff members an engineer or specialist having "hands-on" experience with handling chemical wastes. PNNL also has a unit which tracks and monitors training for PNNL employees. This coordination includes a system for "flagging" affected employees when additional training and/or follow-up is warranted.				
Modification Class: ¹²³ Please check one of the Classes:	Class 1 <input checked="" type="checkbox"/>	Class ¹ 1 <input type="checkbox"/>	Class 2 <input type="checkbox"/>	Class 3 <input type="checkbox"/>
Relevant WAC 173-303-830, Appendix I Modification: B.5.b				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> C. General Facility Standards: 5. Changes to the training plan: b. Other changes that reflect current job titles and job descriptions:				
<hr/>				
Submitted by Co-Operator: <i>Alice K. Ikenberry</i> <i>9-22-98</i> A. K. Ikenberry Date	Reviewed by RL Program Office: <i>R.F. Christensen</i> <i>9/30/98</i> R.F. Christensen Date	Reviewed by Ecology: _____ J. J. Wallace Date		

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³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 8.1.4.]			
<u>Description of Modification:</u> Section 8.1.4., page 8-4, lines 18-20: <ul style="list-style-type: none"> ▪ Vehicle Accident Prevention — Initial (2 hours) and triennial refresher (30 minutes): This course is intended to familiarize employees with safe driving rules and with the requirements for operation of government-owned and PNNL-owned vehicles. 				
Modification Class: ¹²³ Please check one of the Classes:	Class 1 X	Class ¹ 1	Class 2	Class 3
Relevant WAC 173-303-830, Appendix I Modification: B.5.b				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> B. General facility Standards: 5. Changes in the training plan: b. Other changes that reflect current training requirements:				
Submitted by Co-Operator: Reviewed by RL Program Office: Reviewed by Ecology:				
<i>A. K. Ikenberry</i> A. K. Ikenberry	<i>9-22-98</i> Date	<i>R.F. Christensen</i> R.F. Christensen	<i>9/30/98</i> Date	J. J. Wallace Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 8.1.4]

Description of Modification:

Section 8.1.4, page 8-4, lines 43-45:

- Radioactive Material Shipping Representative — ~~Triennial~~Biennial: This course provides training in the onsite radioactive material shipping procedures and requirements. Successful completion of this course is required to receive authorization to sign for onsite radioactive shipments (onsite RSRs). ~~The course content of this training also provides the training information provided in the Hazardous Waste Shipment Certification course. Therefore, successful completion of this course meets the training requirements of the Hazardous Waste Shipment Course.~~

Modification Class: ¹²³

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: B.5.b.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

B. General Facility Standards:

5. Changes in the training plan:

b. ~~Other~~ changes that reflect current regulatory requirements for DOT certification:

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

A. K. Ikenberry

7-22-98

R.F. Christensen

9/30/98

A. K. Ikenberry

Date

R.F. Christensen

Date

J. J. Wallace

Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 8.1.5]			
<u>Description of Modification:</u> Section 8.1.5, page 8-6, lines 8-11: <ul style="list-style-type: none"> • SCBA: conducted annually, this course instructs the employee of the advantages and limitations of the SCBA equipment. Key items covered in the course content of this training also provides the training information provided in the Hazardous Waste Shipment Certification course. Therefore, successful completion of this course meets the training requirements of the Hazardous Waste Shipment Course. will include equipment inspection, modes of operation, donning procedures, recognition and response to malfunctions, maintenance and repair, and practical demonstrations. 				
Modification Class: ¹²³ Please check one of the Classes:	Class 1 X	Class ¹	Class 2	Class 3
Relevant WAC 173-303-830, Appendix I Modification: B.5.b.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> B. General Facility Standards: 5. Changes to the training plan. b. Other changes that reflect accurate course content.				
Submitted by Co-Operator: Reviewed by RL Program Office: Reviewed by Ecology:				
<i>A. K. Ikenberry</i> A. K. Ikenberry	<i>9-22-98</i> Date	<i>R.F. Christensen</i> R.F. Christensen	<i>9/30/98</i> Date	J. J. Wallace Date

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4.0 PROCESS INFORMATION [D]

4.1 CONTAINERS [D-1]

The following sections describe the types of containers stored at the 305-B Storage Unit.

4.1.1 Containers With Free Liquids [D-1a]

Containers with free liquids are discussed below.

4.1.1.1 Description of Containers [D-1a(1)]

Most wastes stored at the 305-B Storage Unit are received in their original, as-procured containers. Containers of hazardous materials entering 305-B are inspected before being accepted for storage. Generating units are responsible for placing the materials in adequate containers. Repackaged materials must be placed in containers that are new and compatible with the materials to be stored.

Containers in poor condition or inadequate for storage are not accepted at the unit. If transport is by unit personnel, such containers are not accepted for transport. See Section 6.4.1 for inspection prior to transport performed by unit personnel. "Container in poor condition or inadequate for storage" means a container which is not intact or undamaged and which is not securely sealed to prevent leakage during storage, transport and ultimate offsite disposal. Examples of acceptable packaging include laboratory reagent bottles, DOT containers, spray cans, sealed ampules with septums, paint cans, leaking containers which have been overpacked, etc. Unit operations personnel have the authority to determine whether a container is in poor condition or inadequate for storage, using the criteria of WAC 173-303-190 and professional judgement whether the packaging may leak during handling, storage and/or disposal.

As with all wastes, repackaged containers of dangerous waste are marked and/or labeled to describe the contents of the container and the major hazards of the waste, as required under WAC 173-303. Containers are also marked with a unique identifying number assigned by the unit's computerized waste tracking system.

All flammable liquid wastes are stored in compatible DOT-specified shipping containers and/or in Underwriter's Laboratory (UL)-listed and Factory Mutual (FM)-approved flammable storage cabinets. Solid chemicals are stored on shelving in specifically designated areas based on the DOT hazard classification.

All containers utilized for offsite transport of dangerous wastes at the unit are selected and shall comply with all applicable criteria found in WAC 173-303-190.

1 **4.1.1.2 Container Management Practices [D-1a(2)]**
2

3 Management practices and procedures for containers of dangerous waste are in place at the 305-B Storage
4 Unit to assure the safe receipt, handling, preparation for transport, and transportation of wastes. These
5 practices and procedures are summarized below.
6

7 Inspection of Containers. A system of daily, weekly, monthly, and yearly inspections is in place to ensure
8 container integrity, check for proper storage location, prevent capacity overrun, etc. These inspection
9 procedures are detailed in Section 6.2.
10

11 Container Handling. All unit staff are instructed in proper container handling safeguards as part of their
12 training (see Section 8.1.2 for further details). For example, employees are instructed to open all high-
13 vapor-pressure liquids in the flammable liquid bulking module to avoid buildup of vapors in the unit.
14 Containers are always kept closed except when adding or removing waste, in accordance with
15 WAC 173-303-630(5)(a).
16

17 Containers are not opened, handled or stored in a manner, which would cause the container to leak or
18 rupture. Small containers (five gallons or less capacity) are stored on ventilated shelving or in approved
19 flammable liquid storage lockers (if appropriate). Containers over five gallons capacity are stored on the
20 floor of the appropriate storage cell, in cabinets, or stored in the appropriate containment area on the high
21 bay floor under Section 4.3.2. Unnecessary handling not required for redistribution or preparation for
22 transport and disposal by either labpacking or bulking (see below) is minimized. Drums are moved
23 manually, by crane or chain hoist, or with an electric forklift. For manual movement, hand trucks
24 specifically designed for drum handling are used. Crane and chain hoist operations are performed using a
25 choker chain or drum hoist. When using the forklift, a drum hoist is used or the drums are carried on
26 pallets. Drums are never carried on the forks or "speared" by slipping the forks under the chime. When
27 waste handling operations are conducted, a minimum of two persons are present in the unit.
28

29 Lab Packing. One of the major functions of the 305-B Storage Unit is the preparation of lab packs for
30 offsite recycling, treatment and/or disposal of small quantity lab wastes generated by DOE-RL/PNNL
31 activities.
32

33 Lab packs are prepared in compliance with WAC 173-303-161, 49 CFR 173.12, other applicable
34 regulations, and permit conditions of the planned receiving facility (recycler, treatment facility, or disposal
35 facility). Permit conditions affecting preparation of lab packs might include types of absorbent materials to
36 be used (e.g., no vermiculite).
37

38 Lab packs are prepared in the storage cell containing the hazard class(es) to be placed in the lab pack. The
39 elephant trunk ventilator system may be used to minimize respirable dusts from the absorbent material
40 being used (usually vermiculite). Lab packs may also be prepared in the flammable liquid bulking module if
41 appropriate; for instance, if compatible materials from more than one storage cell are being combined in a
42 single lab pack drum. Lab packs may be prepared in the high bay storage area if storage of the completed
43 lab pack is permitted there per Section 4.3.2.
44

45 Partial and completed lab packs are closed, labeled, and the contents list documented. Labpacks are stored
46 in the cell from which the containers inside were drawn, or in the high bay if appropriate.
47

48 Unit personnel wear appropriate protective clothing while handling containers being placed in lab packs.
49 At a minimum this includes labcoats, safety glasses or other protective eyewear, and chemical resistant

1 gloves. More stringent requirements, including use of respiratory protection, may be imposed if
2 appropriate.

3
4 Bulking. In order to promote greater recycling or treatment of wastes and reduce land disposal, some liquid
5 wastes are "bulked" into larger containers, typically 30- or 55-gallon closed head drums. Bulking
6 operations for chemicals which are respiratory or flammability hazards are performed in the "flammable
7 liquid bulking module" (Also referred to as cell 5.) located in the southwest corner of the unit. Bulking of
8 nonvolatile, low hazard wastes such as saline solutions or ethylene glycol may be done within the
9 containment areas of the appropriate storage cell or high bay.

10
11 Compatibility of wastes to be bulked is determined using the information from generating unit designation
12 information, process knowledge, laboratory analyses, and/or the compatibility determinations described in
13 Section 6.5.

14
15 Containers are transported by hand or forklift to the flammable liquid bulking module area. The receiving
16 drum (typically 30- or 55-gallon capacity) is placed in the module and the ventilation system is activated.
17 A large chemically- resistant funnel (either metal or plastic, depending on material to be introduced) is used
18 to pour the material into the drum. The contents of the smaller containers are then poured, one at a time,
19 into the larger drum. The receiving drum is monitored by unit personnel to make sure no incompatibility is
20 observed (e.g., fuming, bubbling, or heat generation). If such incompatibility is observed, no further
21 material is added and the worker leaves the area, closing the module and leaving the ventilation on. The
22 unit supervisor is notified to evaluate implementation of the contingency plan.

23
24 Glass containers, which have been emptied (as defined by WAC 173-303-160(2)), as a result of bulking
25 activities are crushed onsite by an electric glass crusher, which mounts on a 55-gallon drum. If an emptied
26 glass container held acutely hazardous waste, as defined by WAC 173-303-040(2), the container is rinsed
27 at least three times with an appropriate cleaner or solvent prior to being destroyed. The rinsates are
28 managed as dangerous waste. Crushed glass is managed as solid waste in accordance with
29 WAC 173-303-160(3).

30
31 Once bulking is complete, the bulk container is closed, labeled, and the contents list documented.
32 Containers of bulked waste are stored in the cell from which the containers inside were drawn, or in the
33 high bay if appropriate.

34
35 Unit personnel wear appropriate protective clothing while bulking containerized liquid wastes. At a
36 minimum this includes coveralls, disposable splash-resistant apron, eye protection, and chemical resistant
37 gloves. More stringent requirements, including use of respiratory protection, may be imposed if
38 appropriate.

1 **4.1.1.3 Secondary Containment System Design and Operation [D-1a(3)]**
2

3 Several design features have been engineered into the construction of the 305-B Storage Unit as added
4 safeguards for containment of dangerous waste spills or leaks. Design drawings for 305-B are included in
5 Appendix 4A. The following subsections comment briefly on each of the design features.
6

7 **4.1.1.4 Requirement for Base or Liner to Contain Liquids [D-1a(4)]**
8

9 The base of the facility consists of a 6-in. reinforced, poured concrete slab with no cracks or gaps. The
10 concrete was mixed in accordance with ASTM 094, Section 5.3, Alternate 2, and all exposed surfaces were
11 finished with a smooth troweled surface. Expansion joint material is Sonneborn "Sonoflex F™"
12 polyethylene filler. The bonding compound used at the expansion joints was Sonneborn "Sonobond™"
13 two-part epoxy. All edges and corners were sealed with a continuous bead of polysulfide sealant.
14

15 A chemically resistant sealant paint was applied in February 1989 to the storage cells and high bay floor,
16 and in October 1990 to drum storage areas noted in Sections 4.1.1.6.6, 4.1.1.6.7, and 4.1.1.6.8. Specific
17 areas of 1989 application are shown on Plate 4-1 and painting methods (surface preparation and
18 application of coatings) are described on Plate 4-2 of Appendix 4A of this permit application. The surface
19 coating is Coronado #101-1 (101 Series) Polyamide Epoxy Coating. Estimated service life of the coating
20 material is 14 years per manufacturer's literature. Performance specifications and a compatibility chart are
21 provided in Appendix 4B.
22

23 The condition of the floor coating is inspected weekly per Section 6.2.1.1, and repairs are made as needed.
24 Immediate repairs are indicated whenever the coating is observed to have been chipped, bubbled up,
25 scraped, or otherwise damaged in a manner which would significantly impact the ability of the coating to
26 contain spilled materials. Minor nicks and small chips resulting from normal operations will be repaired on
27 a periodic basis. Repairs are performed in accordance with procedures provided by the manufacturer in
28 Appendix 4B.
29

30 **4.1.1.5 Containment System Drainage [D-1a(5)]**
31

32 The concrete floors in each high bay storage cell are canted toward individual secondary containment
33 trenches within those cells. These trenches are isolated from each other in order to prevent interaction,
34 reactions, or offsite migration of spilled materials. This provides protection even during simultaneous
35 spills.
36

37 The floors in the high bay area are also canted toward a separate sump system, which is sealed with epoxy
38 and blocked to prevent drainage. Drums stored in this area are also stored on pallets to prevent contact
39 with spilled material in the event of a release. Segregated storage areas for incompatible materials have
40 been set up in the high bay storage area to prevent commingling of spilled wastes during a catastrophic
41 (multi-drum) spill incident. Each area has its own containment trench separated from other trenches with
42 concrete and epoxy.
43

44 The flammable liquids bulking module, along with its purpose of providing a ventilated area for bulking of
45 compatible hydrocarbon wastes, is used as an independent storage cell. The walls of the module provide
46 secondary containment, which have been sealed at the floor joint by use of grout coated with epoxy paint.
47

48 For protection of the basement RMW storage area, curbing/diking is provided to prevent migration. Drums
49 are stored on pallets to prevent container contact with spilled materials and drip pans are provided to

1 segregate RMW by dangerous waste characteristic as described in Section 4.1.1.6.11. This area has no
2 drainage.

3
4 Flammable RMW is stored within its own secondary containment devices. The description and capacity of
5 the flammable RMW storage area is provided in 4.1.1.6.11.

6 7 **4.1.1.6 Containment System Capacity [D-1a(6)]**

8
9 Secondary containment is provided for all dangerous wastes stored at the 305-B unit. Storage limits for all
10 chemicals are listed in Table 4-1 (1988 Uniform Building Code) All floors in the high bay area are sloped
11 toward sumps which have no drains and are covered with grating to prevent safety hazards. In addition, all
12 floors in the high bay area are coated with an epoxy based coating as described in Section 4.1.1.4.
13 Inspection of the containment system to maintain integrity is described in Section 6.2. Individual secondary
14 containment systems are configured as follows:

15
16 **4.1.1.6.1 Acids and Oxidizers Cell.** The acids and oxidizers cell (cell 1) is located at the northwest corner
17 of the 305-B unit high bay floor. The cell is constructed of epoxy-painted concrete block walls 4' high and
18 incorporates a 1' deep sump at the west end of the cell. Six cabinets, open shelving, and a large-container
19 storage area are provided within the cell to allow storage of various sizes of containers. The secondary
20 containment volume of the individual sump for this cell is 67 gallons, and the total containment volume of
21 the cell is 774 gallons. A diagram of the cell is provided in Figures 4-1.

22
23 **4.1.1.6.2 Poisons and Class 9 Cell.** The poisons and Class 9 cell (cell 2) is located just south of the acids
24 and oxidizers cell along the west wall of the high bay. This cell is also constructed of epoxy-painted
25 concrete block walls 4' high and incorporates a 1' deep sump along its west end. Three storage cabinets
26 and several sets of open shelving are positioned in the cell to allow storage of various sizes of containers.
27 The northeast corner of the cell is sectioned off with a 6" spill retention berm to allow PCB storage for
28 disposal complying with 40 CFR 761.65(b). The secondary containment volume of the individual sump for
29 this cell is 117 gallons, and the total containment volume of the cell is 782 gallons. A diagram of this cell
30 is provided in Figure 4-2.

31
32 **4.1.1.6.3. Alkaline, Washington State Criteria Wastes, Organic Peroxides, and Non-Regulated Waste**
33 **Cell.** The alkaline, Washington State waste, and non-regulated waste cell (cell 3) is located adjacent to
34 the poisons and Class 9 cell on the west wall of the high bay area. This cell is also constructed of epoxy-
35 painted concrete block walls 4' high and incorporates a 1' deep sump along its west end. Four storage
36 cabinets, 3 sets of open shelving, and 1 explosion proof refrigerator, are positioned in the cell to allow
37 storage of various sizes of containers. The secondary containment volume of the individual sump for this
38 cell is 137 gallons, and total containment volume of the cell is 764 gallons. A diagram of this cell is
39 provided in Figure 4-3.

40
41 **4.1.1.6.4 Organics Cell.** The organics cell (cell 4) is located south of the alkaline Washington State
42 waste, and non-regulated waste cell. As with the other three cells described above, this cell is constructed
43 of epoxy-painted concrete block walls 4' high and incorporates a 1' deep sump along its west end. The
44 secondary containment volume of the individual sump for this cell is 119 gallons, and total containment
45 volume of the cell is 687 gallons. A diagram of this cell is provided in Figure 4-4.

46
47 Ignitable organic waste materials are stored in this cell that also exhibit the characteristics of corrosivity,
48 toxicity as well as reactivity. Three Factory Mutual-approved flammable liquid storage cabinets are
49 utilized for storage of various classes of flammable liquids as defined by the UFC. The capacities of the
50 various cabinets are shown in Table 4-2. The following cabinets also are used for storage in this cell: one

1 for combustibles, one for aerosols, two for flammable solids, and one for overflow from one of the other
2 cabinets.

3
4 Total ignitable Waste Storage capacity of the 305-B highbay, including the organics cell, Cell 5, Ignitable
5 drum storage area, and highbay storage area is limited by the following UBC restrictions for Class B
6 occupancy:

- 7
8 • Class 1A flammable liquids: 120 gallons
9 • Class 1B flammable liquids: 240 gallons
10 • Class 1C flammable liquids: 360 gallons
11 • Maximum Class 1A, 1B, and 1C at any one time: 480 gallons
12 • Class 2 combustible liquids: 480 gallons
13 • Class 3A combustible liquids: 1320 gallons
14 • Combustible fibers, loose: 100 cubic feet
15 • Combustible fibers, baled: 1000 cubic feet
16 • Flammable gases in any one cylinder: 3000 cubic feet
17 • Liquefied flammable gases: 60 gallons
18

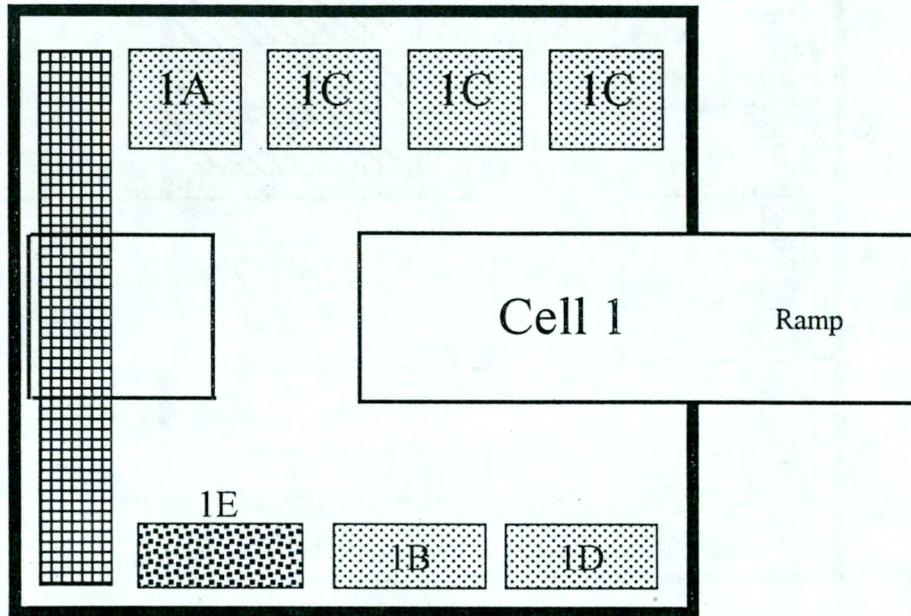
19 To maintain required aisle spaces and functional usability, the liquid capacity of the organics cell (cell 4) is
20 set at 1000 gallons.

21
22 **4.1.1.6.5. Flammable Liquids Bulking Module.** The flammable liquids bulking module (cell 5), along
23 with its purpose of providing a ventilated area for bulking of compatible ignitable wastes, is used as an
24 independent storage cell. The walls of the module provide secondary containment, which have been sealed
25 at the floor joint by use of grout coated with epoxy paint. Flammable gases in cylinders, liquefied
26 flammable gases, and oxidizing gases will be stored in the bulking module.

27
28 Nontransient storage of flammable liquids in the module is 55 gallons. A diagram of the module is
29 provided in Figure 4-5.

30
31 **4.1.1.6.5.a. Flammable Liquids Storage Module.** The flammable liquid storage module is a self-contained
32 storage module (cell 8) that allows additional storage space for flammable wastes. Located on the
33 southeast wall, it is connected to the buildings fire suppression system. The flammable storage module has
34 a 2-hour fire rated containment system so that according to the UFC, an unlimited capacity is allowed.
35 However, the flammable waste storage capacity of the flammable liquid storage module is limited by the
36 240-gal capacity of the module's secondary containment system. No more than 240 gal of any combination
37 of flammable liquid classes will be stored in the module. This flammable waste storage capacity is in
38 addition to the flammable storage limits for the highbay. A diagram of the module is provided in
39 Figure 4-10.

Figure 4-1. Acids and Oxidizers Cell



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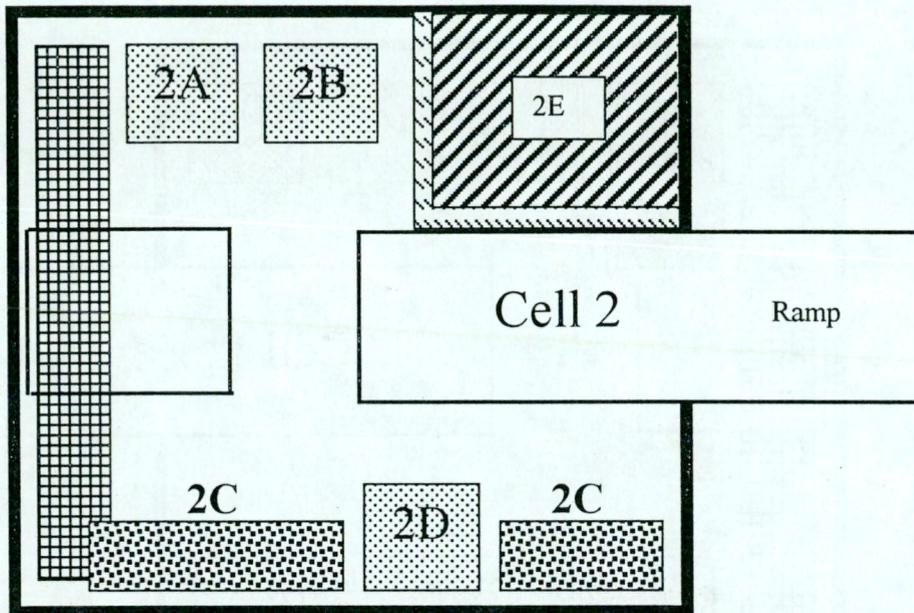
- 1A Liquid Oxidizers (Medium Cabinet)
- 1B Solid Oxidizers (Small Cabinet)
- 1C Inorganic Acids (Medium Cabinet)
- 1D Organic Acids (corrosive) (Small Cabinet)
- 1E Mercury/Corrosive Solids (Small Shelf)

█ 15.24cm W x 127CM H epoxy coated concrete block wall

▣ Secondary Containment Trench

□ Drum and Carboy Storage Area

Figure 4-2. Poisons and Class 9 Cell



1cm = 60cm

- 23 2A Poisons (P.G. I and III) (Large Cabinet)
- 24 2B Poisons (P.G. I) (Large Cabinet)
- 25 2C Class 9 (nonreactive) (Large and Small Shelf)
- 26 2D Class 9 (reactives) (Large Cabinet)
- 27 2E PCB's

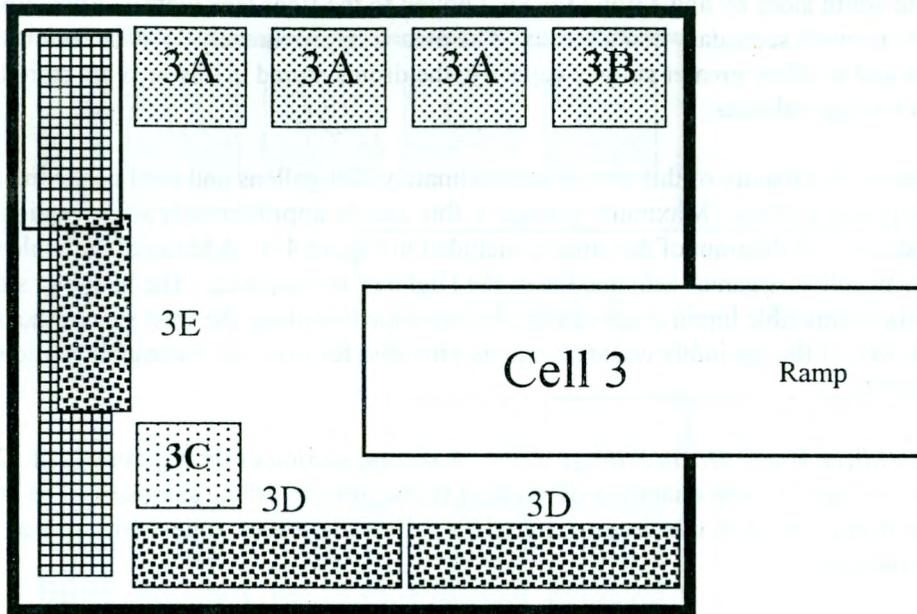
30  15.2cm W x 127cm H epoxy coated concrete block wall

32  Secondary Containment Trench

36  313.69cm L x 8.89cm W x 15.24 cm H epoxy coated angle iron, sealed to the floor

38  Drum and Carboy Storage Area

Figure 4-3. Alkaline, Washington State Criteria Waste, Organic Peroxides, and Non-Regulated Waste Cell



1cm = 60cm

- 3A Alkaline (liquids and solids) (Medium Cabinet)
- 3B Alkaline/Oxidizers (Small Cabinet)
- 3C Organic Peroxides and temperature sensitive (refrigerator)
- 3D Washington State Criteria Waste (2 Large Shelves)
- 3E Non-Regulated Liquids/Solids (Small Shelf)

█ 15.24cm W x 127CM H epoxy coated concrete block wall

▣ Secondary Containment Trench

1 **4.1.1.6.6 Ignitable Waste Drum Storage Area.** An additional section of the high bay (cell 8) has been
2 dedicated to storage of drum quantities of ignitable waste prior to offsite shipment. The area is bordered on
3 the north and south sides by angle iron (3½"x6") bolted to the floor (see Plate 2, Appendix 4A for detail)
4 and sealed to provide secondary containment. The area is approximately 15'x7'. To further enhance
5 containment and to allow greater storage capacity, the drums stored in this area are stored in flammable
6 liquid drum storage cabinets.

7
8 Sump containment capacity of this area is approximately 224 gallons and total containment capacity is
9 approximately 431 gallons. Maximum storage in this area is approximately six 55-gallon drums and 12
10 five-gallon drums. A diagram of this area is included in Figure 4-6. Additional ignitable waste storage is
11 provided for in cell 4, organics cell, and the in the Highbay storage area. The high bay storage area has
12 five additional flammable liquid drum storage cabinets located along the west side of the high bay (see
13 Figure 4-7). All of this ignitable waste storage is provided for utilizing flammable liquid storage cabinets
14 for added safety.

15
16 **4.1.1.6.7 Oxidizer Waste Drum Storage Area.** A second section of the high bay (cell 12) has been
17 dedicated to storage of drum quantities of oxidizer waste prior to offsite shipment. The area is 10'x7' in
18 size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the
19 event of an incident.

20
21 Sump containment capacity in this area is approximately 55 gallons and total containment capacity is
22 approximately 255 gallons. Maximum storage in this area will be eight 55-gallon drums. A diagram of
23 this area is included in Figure 4-6.

24
25 **4.1.1.6.8 Acid Waste Drum Storage Area.** A third section of the high bay (cell 13) has been designated
26 for storage of drum quantities of acid waste prior to offsite shipment. The area is approximately 10'x10' in
27 size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the
28 event of an incident. Bulked drums containing acids, with oxidizers as a secondary hazard, will be placed
29 in the cell 1 drum area, to prevent any possibility of a reaction with surrounding hazards in the high bay
30 drum storage area. A diagram of this area is included in Figure 4-6.

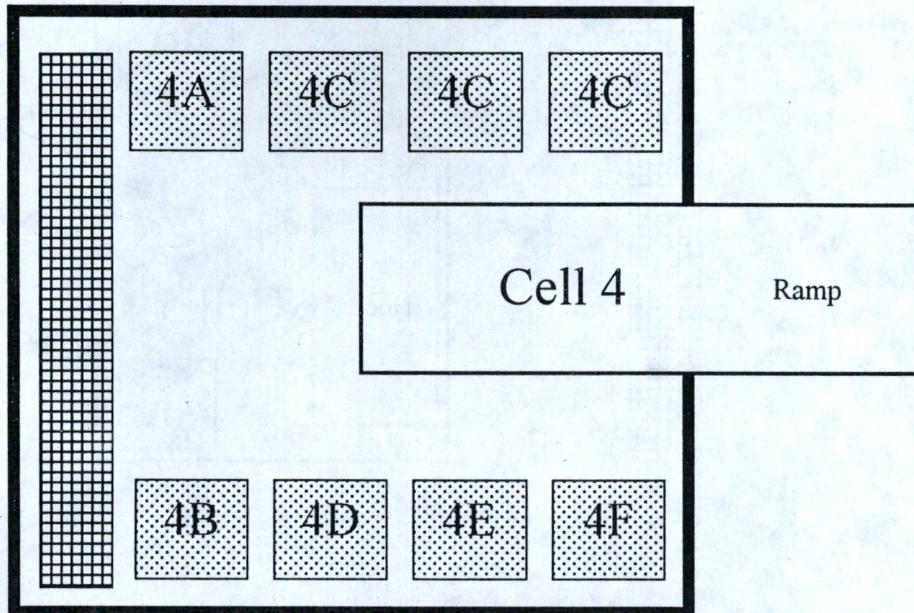
31
32 **4.1.1.6.9. Caustic Waste Drum Storage Area.** A fourth section of the high bay (cell 14) has been
33 designated for storage of drum quantities of caustic waste prior to offsite shipment. The area is
34 approximately 22'x15' in size. Waste drums stored in this area are stored on pallets to prevent contact with
35 spilled wastes in the event of an incident. Sump containment capacity in this area is approximately 110
36 gallons and total containment capacity is approximately 380 gallons. Maximum storage in this area is
37 thirty-two 55-gallon drums. The location of the area is shown on the High Bay Storage Area diagram
38 Figure 4-7.

39
40 **4.1.1.6.10 High Bay Storage Area.** The high bay storage area, along with its partitioned areas mentioned
41 above, is itself a secondary containment area for loading, unloading, and storage of dangerous wastes. The
42 high bay floor is "crowned" in the center and sloped at ¼" per foot, with drainage to sumps on the east and
43 west sides of the unit. Sump locations are indicated in Figure 4-7.

44
45 Due to space limitations in the individual cells, and for ease of mechanical handling, the high bay floor is
46 typically used for storage of nonradioactive chemicals in drums (see Figure 4-7).

Figure 4-4. Organics Cell

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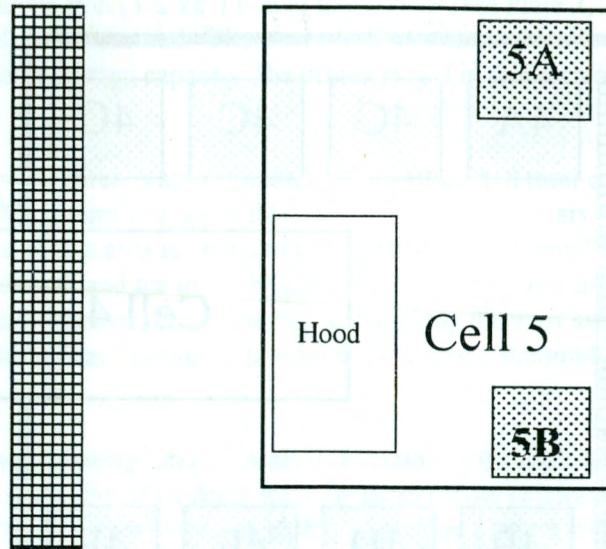
- 4A Combustible Liquids (Large Cabinet)
- 4B Aerosols (Large Cabinet)
- 4C Flammable Liquids (Large Cabinet)
- 4D Flammable Solids (Dangerous When Wet) (Large Cabinet)
- 4E Flammable Solids (w/ water. Spontaneously Combustible) (Large Cabinet)
- 4F Floating Cabinet (Large Cabinet)

■ 15.24 cm W x 127 H epoxy coated concrete block wall

■ Secondary Containment Trench

Figure 4-5. Flammable Liquid Bulking Module and Compressed Gases (Cell 5)

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- 5A Compressed Gases
- 5B Oxidizing Gases
- Hood – Walk-in flammable liquid bulking, 1 drum maximum.



Figure 4-6. Segregated High Bay Drum Storage Areas

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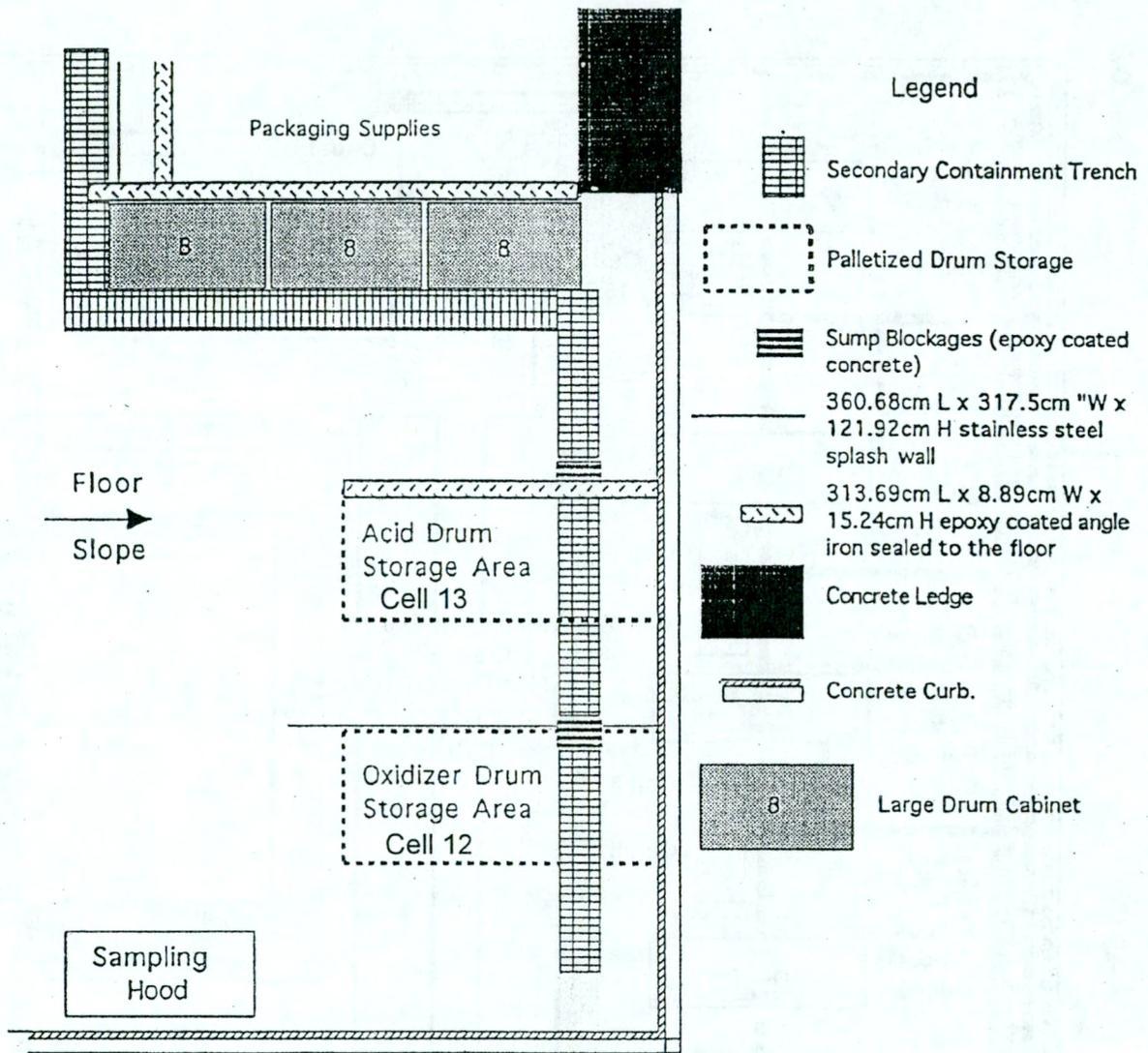
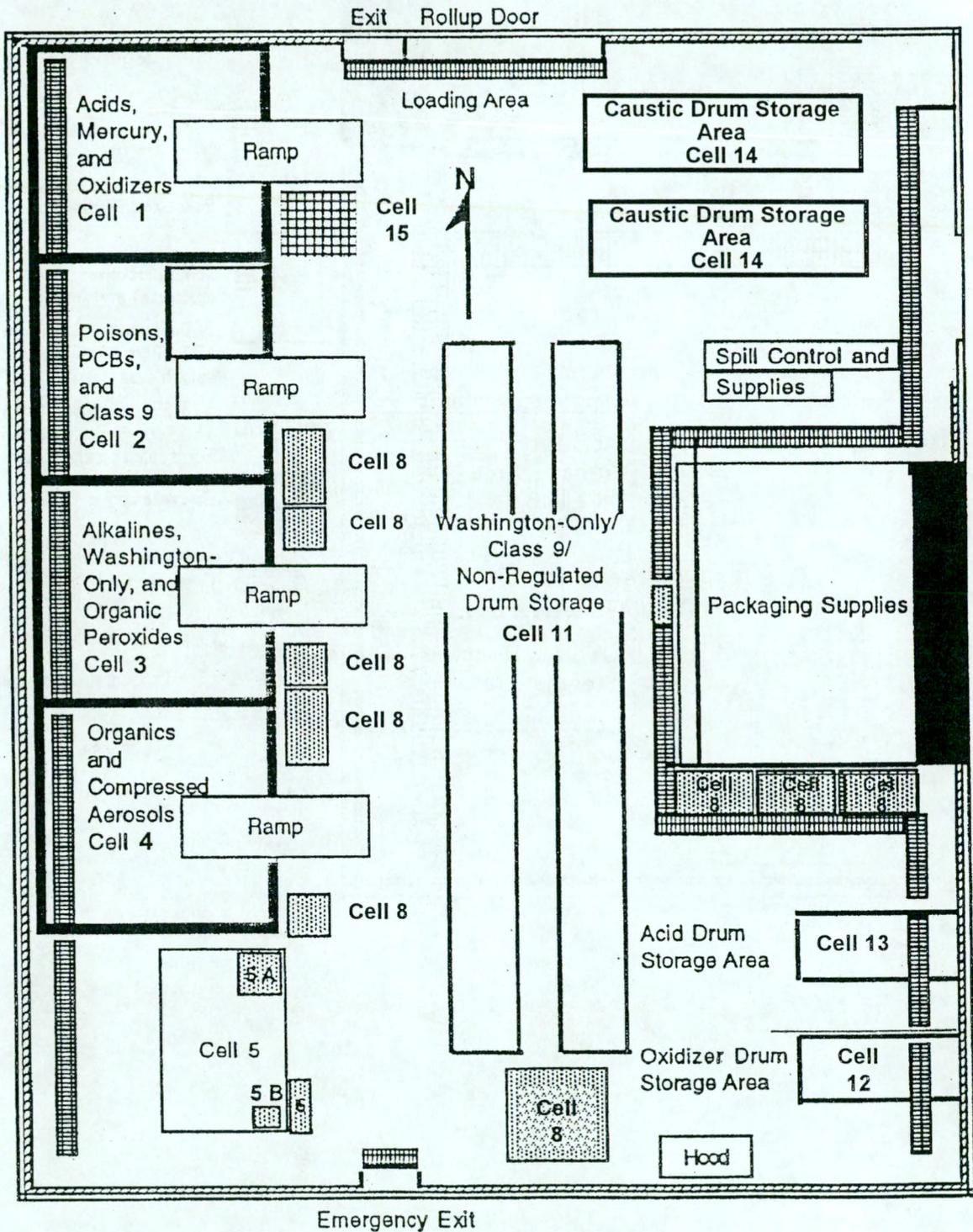


Figure 4-7. High Bay Storage Area
(Page 1 of 2)

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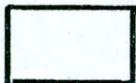
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Figure 4-7. High Bay Storage Area
(Page 2 of 2)

Legend: High Bay Storage Area Diagram



Secondary Containment Trench



Palletized Drum Storage



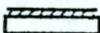
360.68cm L x 3.175cm W x 10.16cm H Stainless Steel Splash wall



313.69cm L x 8.89cm W x 15.24cm H epoxy coated angle iron sealed to the floor



Concrete Ledge



22.86cm overhang from concrete wall.



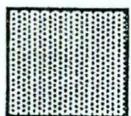
Asbestos Storage (Small Cabinet)



Small Drum Cabinet (flammable waste storage)



Large Drum Cabinet (flammable waste storage)



Flammable Storage Module

Cell 5

Flammable Liquid Bulking Module and Compressed Gases



Compressed Gases (Large Cabinet)

5 B

Oxidizing Gases (6.985cm W x 45.72cm D x 88cm H)



Explosives Magazine

1 The high bay floor is also used to store labpacks and bulked waste containers prior to offsite shipment to
2 licensed treatment, disposal, or recycling facilities. Generally, only corrosives, oxidizers, toxic organic
3 solvent mixtures (typically halogenated solvents), antifreeze mixtures, contaminated water which is toxic
4 DW, nonliquid wastes, ORMs, or state-only dangerous waste materials are stored in the high bay storage
5 area.

6
7 If wastes incompatible with the foregoing are stored in the high bay storage area, they are kept separated by
8 at least ten feet of distance and stored in individual drip pans for segregation in case of simultaneous
9 accidental spillage. Compatibility of the materials is determined prior to acceptance in accordance with
10 Section 3.2.

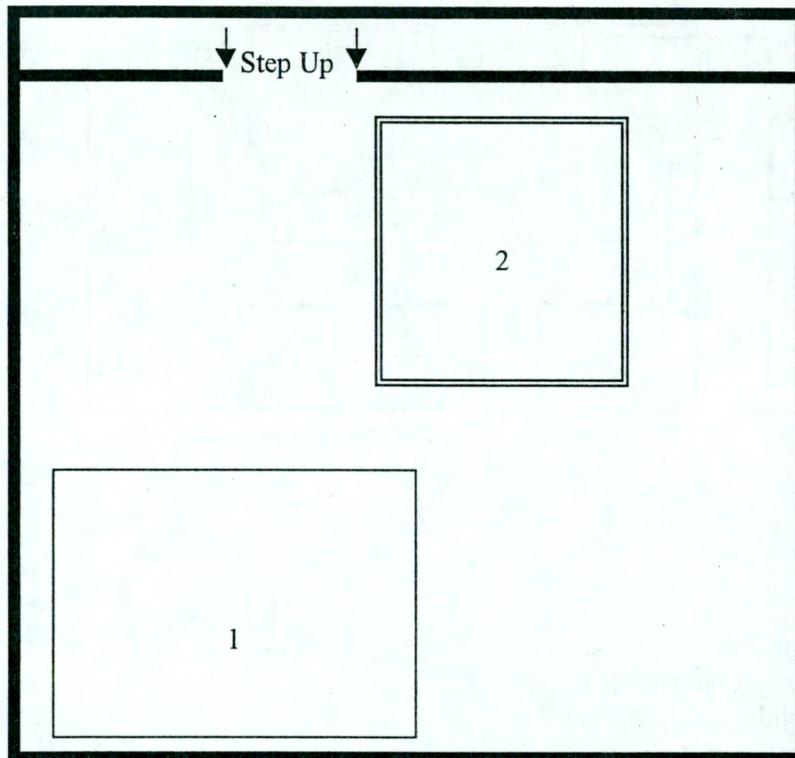
11
12 The secondary containment volume of the sumps in the high bay storage area, exclusive of the sumps
13 within individual areas described above, is 565 gallons. Maximum storage in the high bay storage area is
14 thus approximately 5650 gallons (102 drums). The high bay storage is also governed by the building
15 occupancy maximums of Table 4-1, which includes the inventory of the individual storage cells described
16 above. In order to provide additional separation from spilled liquids and for ease of handling, all drums
17 stored on the high bay floor are stored on pallets. A diagram of this cell is provided in Figure 4-7.

18
19 **4.1.1.6.11 Flammable RMW Storage Area.** Due to UBC restrictions, flammable radioactive mixed
20 waste cannot be stored in the basement of 305-B with the other radioactive mixed waste. The flammable
21 RMW received by 305-B for storage prior to disposal is stored in a separate area above grade in the east
22 portion of the building in a 7'x 7'x 7' flammable liquid storage module (cell 7). The module is Factory
23 Mutual approved and has four-hour fire rated walls and doors. The module has a self-contained internal
24 dry chemical fire suppressant system. The module has a 90-gallon polyethylene coated sump. The module
25 is lag bolted to the concrete floor in the flammable RMW storage area indicated in Figure 4-8. The module
26 has a storage capacity of four 55-gallon drums, or up to 250 gallons of total capacity of all containers
27 stored, whichever is greater. This storage area meets the requirements of a one year PCB storage area as
28 defined in 40 CFR 761.65, so flammable mixed waste, also regulated as PCB waste, may be stored in this
29 location. A diagram of this cell is provided in Figure 4-8.

30
31 **4.1.1.6.12 RMW Storage Area.** Radioactive mixed waste that is not flammable per UFC (i.e., flash point
32 above 100 F) is stored in a special area in the basement of 305-B. For additional segregation capability,
33 there are eight small chemical storage cabinets and four 62" x 62" x 6" (157cm x 157cm x 15 cm stainless
34 steel "container pans", with an approximate volume of 91 gallons (346 liters). The total area within the
35 curbing is 1246 gallons (4716 liters). The containment pans are mounted to the floor or wall of the cell to
36 provide segregated storage for potentially incompatible mixed waste streams. Drums stored in this area are
37 stored on pallets to prevent potential contact with spilled waste in containment during an emergency. A
38 diagram of this area is provided in Figure 4-9.

39
40 In normal use, the storage capacity of this area is limited by the radionuclide limits imposed by the DOE
41 for "low inventory facilities." These limitations are defined in DOE-STD-1027-92, Hazard Categorization
42 and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis
43 Reports, and are included in the radiation work permit for the mixed waste storage area.

Figure 4-8. Flammable Radioactive Mixed Waste Storage Area

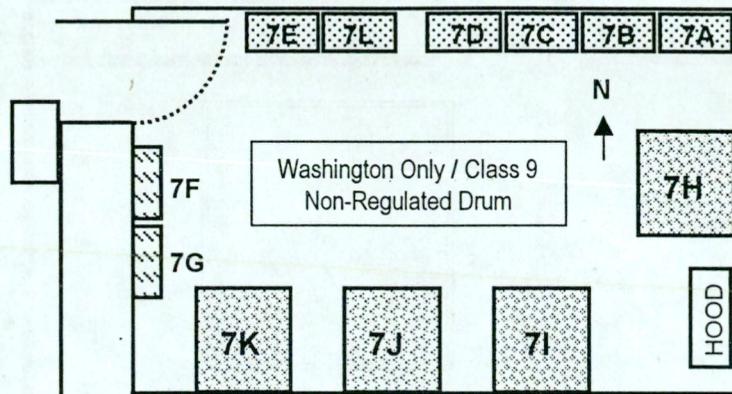


LEGEND

- 1 Flammable RMW Storage Module
- 2 Removable hatch cover for basement access (surrounded by railing)

All PCB waste stored in Cell 9 shall be stored in trays, or drum overpacks that meet all the requirements of 40 CFR 761.65(b).

Figure 4-9. Radioactive Mixed Waste Storage

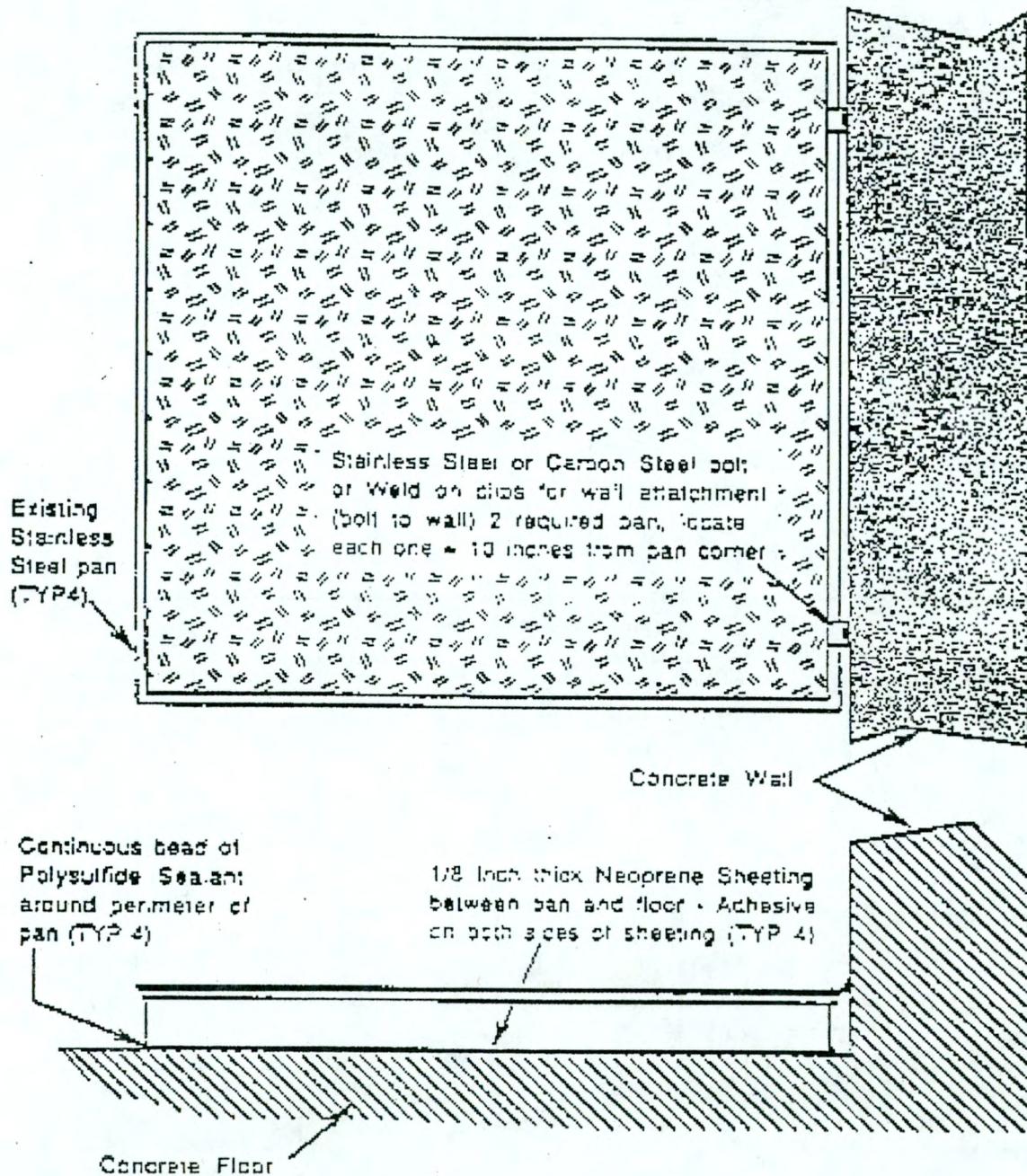


Cell 7 Legend

- 19 7A Poisons
- 20 7B Oxidizers
- 21 7C Class 9/Combustible
- 22 7D Washington Only/Combustible
- 23 7E Flammable Solids
- 24 7F Corrosive Base/Combustible
- 25 7G Corrosive Acid/Combustible
- 26 7H Corrosive/PCB's/Combustible
- 27 7I Corrosive Acid/PCB's/Combustible
- 28 7J PCB's/Combustible
- 29 7K Washington Only/Class 9/PCB's/Combustible
- 30 7L Non-Regulated/Combustible
- 31 7M Washington state Waste/ Class 9/ Non-Regulated/Combustible/Compatibles
- 32 HOOD 121.9cm L x 54.2cm D x 228.6cm H

All PCB waste stored in Cell 7 will be segregated according to chemical compatibility, and stored in any of the four stainless steel container pans complying with 40 CFR 761.65(b)

Figure 4-10. RMW Storage Cell Containment Pan Installation



PAN TOP & SIDE VIEW

Non Flammable RMW Cell Secondary Containment Pan Installation

1 Table 4-1. Exempt Amounts of Hazardous Materials, Liquids & Chemicals Presenting a Physical Hazard

BASIC QUANTITIES PER CONTROL AREA¹

When two units are given values within parentheses are in cubic feet (Cu.Ft.) or pounds (Lbs.)

CONDITION		STORAGE ²			USE ² -CLOSED SYSTEMS			USE ² -OPEN SYSTEMS		
MATERIAL	CLASS	Solid Lbs. (Cu.Ft.)	Liquid Gallons (Lbs.)	Gas (Cu.Ft.)	Solid Lbs. (Cu.Ft.)	Liquid Gallons (Lbs.)	Gas (Cu.Ft.)	Solid Lbs. (Cu.Ft.)	Liquid Gallons (Lbs.)	Gas (Cu.Ft.)
1.1 Combustible liquid ³	II	—	120 ^{4,5}	—	—	120 ⁴	—	—	30 ⁴	—
	III-A	—	330 ^{4,5}	—	—	330 ⁴	—	—	80 ⁴	—
	III-B	—	13,200 ^{5,6}	—	—	13,200 ⁶	—	—	3,300 ⁶	—
1.2 Combustible dust lbs./1000 Cu.Ft.		1 ⁷	—	—	1 ⁷	—	—	1 ⁷	—	—
1.3 Combustible fiber (loose) (baled)		(100) (1,000)	—	—	(100) (1,000)	—	—	(20) (200)	—	—
	1.4 Cryogenic, flammable or oxidizing		45	—	—	45	—	—	10	—
2.1 Explosives		1 ^{5,8,9}	(1) ^{5,8,9}	—	¼ ⁸	(¼) ⁸	—	¼ ⁸	(¼) ⁸	—
3.1 Flammable solid		125 ^{4,5}	—	—	25 ⁴	—	—	25 ⁴	—	—
3.2 Flammable gas (gaseous) (liquefied)		—	—	750 ^{4,5}	—	—	750 ^{4,5}	—	—	—
	3.1 Flammable liquid ³	—	30 ^{4,5}	—	—	30 ⁴	—	—	10 ⁴	—
		—	60 ^{4,5}	—	—	60 ⁴	—	—	15 ⁴	—
		—	90 ^{4,5}	—	—	90 ⁴	—	—	20 ⁴	—
Combination I-A, I-B, I-C		—	120 ^{4,5,10}	—	—	120 ^{4,10}	—	—	30 ^{4,10}	—
4.1 Organic peroxide, unclassified detonable		1 ^{5,8}	(1) ^{5,8}	—	¼ ⁸	(¼) ⁸	—	¼ ⁸	(¼) ⁸	—
4.2 Organic peroxide	I	5 ^{4,5}	(5) ^{4,5}	—	(1) ⁴	(1) ⁴	—	1 ⁴	1 ⁴	—
	II	50 ^{4,5}	(50) ^{4,5}	—	50 ⁴	(50) ^{4,5}	—	10 ⁴	(10) ⁴	—
	III	125 ^{4,5}	(125) ^{4,5}	—	125 ⁴	(125) ^{4,5}	—	25 ⁴	(25) ⁴	—
	IV	500	(500)	—	500 ⁴	(500)	—	100	(100)	—
	V	N.L.	N.L.	—	N.L.	N.L.	—	N.L.	N.L.	—
4.3 Oxidizer	4	1 ^{5,8}	(1) ^{5,8}	—	¼ ⁸	(¼) ⁸	—	¼ ⁸	(¼) ⁸	—
	3	10 ^{4,5}	(10) ^{4,5}	—	2 ⁴	(2) ⁴	—	2 ⁴	(2) ⁴	—
	2	250 ^{4,5}	(250) ^{4,5}	—	250 ⁴	(250) ⁴	—	50 ⁴	(50) ⁴	—
	1	1,000 ^{4,5}	(1,000) ^{4,5}	—	1,000 ⁴	(1,000) ⁴	—	200 ⁴	(200) ⁴	—
4.1 Oxidizer -- Gas (gaseous) (liquefied)		—	—	1,500 ^{4,5}	—	—	1,500 ^{4,5}	—	—	—
		—	15 ^{4,5}	—	—	15 ^{4,5}	—	—	—	—
5.1 Pyrophoric		4 ^{5,8}	(4) ^{5,8}	50 ^{5,8}	1 ⁸	(1) ⁸	10 ^{5,8}	0	0	0
6.1 Unstable (reactive)	4	1 ^{5,8}	(1) ^{5,8}	10 ^{5,8}	¼ ⁸	(¼) ⁸	2 ^{4,5}	¼ ⁸	(¼) ⁸	0
	3	5 ^{4,5}	(5) ^{4,5}	50 ^{4,5}	1 ⁴	(1) ⁴	10 ^{4,5}	1 ⁴	1 ⁴	0
	2	50 ^{4,5}	(50) ^{4,5}	250 ^{4,5}	50 ⁴	(50) ⁴	250 ^{4,5}	10 ⁴	(10) ⁴	0
	1	125 ^{4,5}	(125) ^{4,5}	750 ^{4,5}	125 ⁴	(125) ⁴	750 ^{4,5}	25 ⁴	(25) ⁴	0
7.1 Water (reactive)	3	5 ^{4,5}	(5) ^{4,5}	—	5 ⁴	(5) ⁴	—	1 ⁴	(1) ⁴	—
	2	50 ^{4,5}	(50) ^{4,5}	—	50 ⁴	(50) ⁴	—	10 ⁴	(10) ⁴	—
	1	125 ^{5,6}	(125) ^{5,6}	—	125 ⁶	(125) ^{5,6}	—	25 ⁶	(25) ⁶	—

2

¹ Control area is a space bounded by not less than a one-hour fire-resistive occupancy separation within which the exempted amounts of hazardous materials may be stored dispensed, handled or used. The number of control areas within a building used for retail and wholesale stores shall not exceed two. The number of control areas in buildings with other uses shall not exceed four.

² The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

³ The quantities of alcoholic beverages in retail sales uses are unlimited provided the liquids are packaged in individual containers not exceeding four liters. The quantities of medicines, foodstuffs and cosmetics containing not more than 50 percent of volume of water-miscible liquids and with the remainder of the solutions not being flammable in retail sales or storage occupancies are unlimited when packaged in individual containers not exceeding four liters.

⁴ Quantities may be increased 100 percent in sprinklered buildings. When Footnote 5 also applies, the increase for both footnotes may be applied.

⁵ Quantities may be increased 100 percent when stored in approved storage cabinets or safety cans as specified in the fire code. When Footnote 4 also applies, the increase for both may be applied.

⁶ The quantities permitted in a sprinklered building are not limited.

⁷ A dust explosion potential is considered to exist if 1 pound or more of combustible dust per 1,000 cubic feet of volume is normally in suspension or on horizontal surfaces inside buildings or equipment and which could be put into suspension by an accident, sudden force or small explosion.

⁸ Permitted in sprinklered buildings only. None is allowed in unsprinklered buildings.

⁹ One pound of black sporting powder and 20 pounds of smokeless powder are permitted in sprinklered or unsprinklered buildings.

¹⁰ Containing not more than the exempt amounts of Class I-A, Class I-B, Class I-C flammable liquids.

1 **Table 4-1. Exempt Amounts of Hazardous Materials, Liquids & Chemicals Presenting a Physical Hazard**
 2 (cont.)
 3

MAXIMUM QUANTITIES PER CONTROL AREA ^{1 2}
 When two units are given, values within parentheses are in pounds (Lbs.)

MATERIAL ³	STORAGE ⁴			USE ³ —CLOSED SYSTEMS			USE ³ —OPEN SYSTEMS		
	Solid (Lbs.) ^{5 6}	Liquid Gallons (Lbs.) ^{5 6}	Gas (Cu.Ft.) ⁵	Solid (Lbs.) ⁵	Liquid Gallons (Lbs.) ⁵	Gas (Cu.Ft.)	Solid (Lbs.) ⁵	Liquid Gallons (Lbs.) ⁵	Gas (Cu.Ft.)
1. Corrosives	5,000	500	650 ⁶	5,000	500	650 ⁵	1,000	100	—
2. Highly Toxics ⁷	1	(1)	20 ⁸	1	(1)	20 ⁷	¼	(¼)	—
3. Irritants	5,000	500	650 ⁶	5,000	500	650 ⁵	1,000	100	—
4. Sensitizers	5,000	500	650 ⁶	5,000	500	650 ⁵	1,000	100	—
5. Other Health Hazards	5,000	500	650 ⁶	5,000	500	650 ⁵	1,000	100	—

4

¹ Control area is a space bounded by not less than one-hour fire resistive occupancy separation within which the exempted amounts of hazardous materials may be stored. Dispensed, handled or used. The number of control areas within retail and wholesale stores shall not exceed two and the number of control areas in other uses shall not exceed four

² The quantities of medicines, foodstuffs and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, in retail sales uses are unlimited when packaged in individual containers not exceeding 4 liters.

³ The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

⁴ For carcinogenic and radioactive materials, see the Fire Code.

⁵ Quantities may be increased 100 percent in sprinklered buildings. When Footnote 6 also applies, the increase for both footnotes may be applied.

⁶ Quantities may be increased 100 percent when stored in approved storage cabinets or safety cans as specified in the fire code. When Footnote 5 also applies, the increase for both footnotes may be applied.

⁷ For special provisions, see the Fire Code.

⁸ Permitted only when stored in approved exhausted gas cabinets, exhausted enclosures or fume hoods.

1 **4.1.1.6.13 Explosives Storage Area.** Due to UBC restrictions, wastes classified as explosive by DOT
2 regulations are stored in a 3' x 3'x 3' explosives magazine, with a 8 cubic foot interior, outside cell 1. The
3 magazine is constructed of steel and is certified to have been fabricated per Institute of Makers of
4 Explosives (IME) SLP22, type 2 day box requirements. No more than 1 lb. of explosives is stored in the
5 magazine at one time. The location of the magazine is indicated in Figure 4-7.
6

7 **4.1.1.7 Control of Run-On [D-1a(7)]**
8

9 The 305-B Storage Unit was designed to eliminate the likelihood of on-site, or for that matter, off-site
10 migration via run-on and run-off. The facility is completely enclosed (i.e., complete roof and WA,
11 1981.)no open walls) and has been constructed upon a foundation so that precipitation cannot cause either
12 run-on or run-off problems.
13

14 **4.1.1.8 Removal of Liquids from Containment System [D-1a(8)]**
15

16 Upon discovery of liquid accumulation in the containment resulting from a spill or other release, the BED
17 must be contacted in accordance with the 305-B contingency plan (Chapter 7). The BED may determine
18 that the contingency plan should be implemented. If the incident is minor, and the BED approves, removal
19 of the liquids will commence immediately following a safety evaluation. Appropriate protective clothing
20 and respiratory protection will be worn during removal activities; a PNNL industrial hygienist may be
21 contacted to determine appropriate personnel protection requirements and any other safety requirements
22 that may be required, such as chemical testing or air monitoring. In addition, ventilation of the spill-
23 impacted area may be performed if determined to be safe and if appropriate monitoring of the air
24 discharge(s) is performed.
25

26 Spills are normally contained either within the storage cabinet, within the cell, or within a secondary
27 containment trench or berm as described in Section 4.1.1.5. In any case, spilled material will be recovered
28 to the extent possible by pumping recovered liquids with a pump made of nonreactive materials (either steel
29 or PVC) to intact containers selected in accordance with the container selection procedure in
30 Section 4.1.1.1. Nonrecoverable liquids will be absorbed with an appropriate absorbent (after appropriate
31 chemical reaction to neutralize reactivity in the case of reactive waste, or neutralization in the case of
32 corrosive materials); see Table 6.2 for list of available materials for this purpose. The absorbent material
33 will then be recovered and placed in a container selected in accordance with Section 4.1.1.1, using
34 nonsparking shovels in the case of ignitable waste. The floor, cabinets and any other impacted containers
35 may be cleaned with dry rags, soap and water, or a compatible solvent if necessary to remove external
36 contamination. Contaminated rags and other cleanup material will be disposed of in an appropriate
37 manner. Verification sampling shall be carried out in accordance with Section 11.1.4.4. (Methods for
38 sampling and testing to demonstrate success of decontamination).
39

40 **4.1.2 Containers Without Free Liquid That Do Not Exhibit Ignitability or Reactivity**
41 **[D-1b]**
42

43 This section is not applicable to 305-B because the storage area is used to store containers both with and
44 without free liquids. 305-B does not meet the conditions for reduced requirements for storing only
45 containers without free liquid; therefore, the facility is subject to the full requirements for containment.

1 **4.2 PROTECTION OF EXTREMELY HAZARDOUS WASTE IN CONTAINERS [D-2]**
2

3 All wastes are stored inside of 305-B, within the storage areas described in Section 4.1.1.6. These
4 locations are completely enclosed from the weather, as described in Section 4.1.1.7, meeting the
5 requirements of WAC 173-303-630(7)(d).
6

7 **4.3 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND**
8 **INCOMPATIBLE WASTES IN CONTAINERS [D-3]**
9

10 The following sections provide information on the management of ignitable, reactive, and incompatible
11 waste in containers. Additional information on this subject can be found in Section 6.5.
12

13 **4.3.1 Management of Ignitable or Reactive Wastes in Containers [D-3a]**
14

15 Ignitable and reactive wastes are stored in compliance with Uniform Fire Code Division II regulations for
16 Container and Portable Tank Storage Inside Buildings (International Conference of Building
17 Officials 1988). Containers of ignitable and reactive waste are stored in individual flammable material
18 storage cabinets within the storage cells.
19

20 **4.3.2 Management of Incompatible Wastes in Containers [D-3b]**
21

22 Section 6.5.2 describes procedures used at 305-B to determine the compatibility of dangerous wastes so
23 that incompatible wastes are not stored together. Chemical wastes stored in 305-B are separated by
24 compatibility, chemical makeup and hazard class and stored in areas having appropriate secondary
25 containment, as described in Section 4.1.1.6.
26

27 As shown in Figures 4-2 through 4-11, each storage area has individual storage configurations; secondary
28 containment structures are provided to assure that incompatible materials will not commingle if spilled.
29 Further segregation is provided by chemical storage cabinets located throughout the facility in various
30 areas as shown in Figures 4-2 through 4-11. Cabinet types are noted in those figures and capacities
31 described in Table 4-2. Incompatible wastes are never placed in the same container, or in unwashed
32 containers that previously held incompatible waste.
33

34 Compliance with WAC 173-303-395(1)(b) is assured utilizing the reactivity groupings given in A Method
35 for Determining the Compatibility of Hazardous Waste (EPA 1980). Use of this system is described in
36 "Procedures for Hazardous Waste and Radioactive Mixed Waste Management and Disposal at Pacific
37 Northwest Laboratory." This internal procedure is part of the 305-B Operating Record, as required by
38 WAC 173-303-395(1)(c).
39

40 **4.3.3 Tank System [D-3c]**
41

42 This section is not applicable to the 305-B Storage Unit because wastes are not managed in tanks.
43

44 **4.3.4 Waste Piles [D-3d]**
45

46 This section is not applicable to the 305-B Storage Unit because wastes are not managed in waste piles.
47

4.3.5 Surface Impoundments [D-3e]

This section is not applicable to the 305-B Storage Unit because wastes are not placed in surface impoundments.

4.3.6 Incinerators [D-3f]

This section is not applicable to the 305-B Storage Unit because wastes are not incinerated.

4.3.7 Landfills [D-3g]

This section is not applicable to the 305-B Storage Unit because wastes are not placed in landfills.

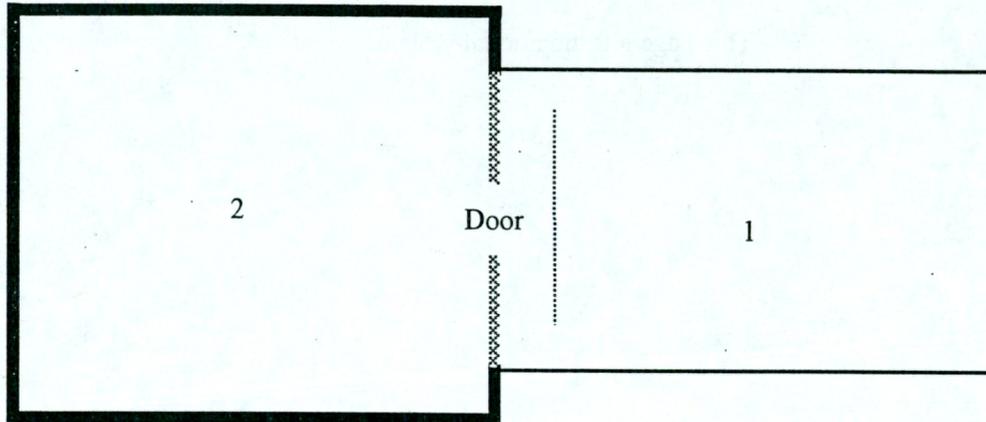
4.3.8 Land Treatment [D-3h]

This section is not applicable to the 305-B Storage Unit because wastes are not treated in land treatment units.

Table 4-2. Storage Devices Used at the 305-B Unit

Storage Device	Typical Use	External Dimensions (in.)	Capacity (gal/ft ³ .)
Small Cabinet	Storage of containers (5 gallons or less capacity)	43w x 18d x 65h	50 max
Medium Cabinet	Storage of containers (18.93 liter [5 gal] or less capacity)	31w x 31d x 65h	60 max
Large Cabinet	Storage of containers (5 gallons or less capacity)	34w x 34d x 65h	80 max
Small Drum Cabinet	Storage of drums (5 to 55 gallons capacity)	34w x 34d x 65h	65 max
Large Drum Cabinet	Storage of drums (5 to 55 gallons capacity)	59w x 34d x 65h	130 max
Small Shelving	Storage of containers (5 gallons or less capacity)	47w x 18d x 62h	65 max
Large Shelving	Storage of containers (5 gallons or less capacity)	72w x 18d x 62h	100 max
Flammable Storage Module	18.93 liter [5 gal] to 208.18 liter [55 gal] capacity	78w x 73d x 100h	240 max
Refrigerator/Freezer	Storage of containers of organic peroxides and other temperature sensitive wastes	34w x 29d x 67h	25 Cu.Ft.
Explosives Magazine	Storage of containers containing DOT classified explosives	36w x 36d x 36h	8 Cu.Ft.

Figure 4-11. Flammable Liquids Storage Module



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LEGEND

- 1 Loading Ramp
- 2 Drum/Container Storage Area (Flammable liquid storage, 240 gallon max,)

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6.0 PROCEDURES TO PREVENT HAZARDS [F]

The 305-B Storage Unit is operated to minimize exposure of the general public and operating personnel to dangerous and mixed wastes.

6.1 SECURITY [F-1]

Security for 305-B is provided by a combination of the overall security system for the 300 Area, and a specific security system for the waste storage unit. The former controls access to the 300 Area proper, while the latter controls access to 305-B.

The 305-B Storage Unit is located within the Hanford 300 Area. As part of the Hanford Site, the 300 Area is subject to a restricted access and personnel security system for the protection of Government property, classified information, and special nuclear materials. The 300 Area is a controlled access area with access limited to persons authorized to enter and having appropriate security clearances or escorts.

The security program for 305-B, in addition to 300 Area access, is designed to limit building access to those personnel within the 300 Area authorized to enter the unit. Access to 305-B can be gained through five walk-in doors, and two large roll up doors, which facilitate loading and unloading activities. All doors to 305-B are kept locked at all times except when in use. All requests for keys are reviewed and approved by the unit operating supervisor and the building manager, and a record of the personnel issued keys is kept in the Operating Record at all times.

Keys to the unit are issued only to unit personnel, security personnel, and emergency response personnel. The unit operating supervisor approves any additions to this list, and the building.

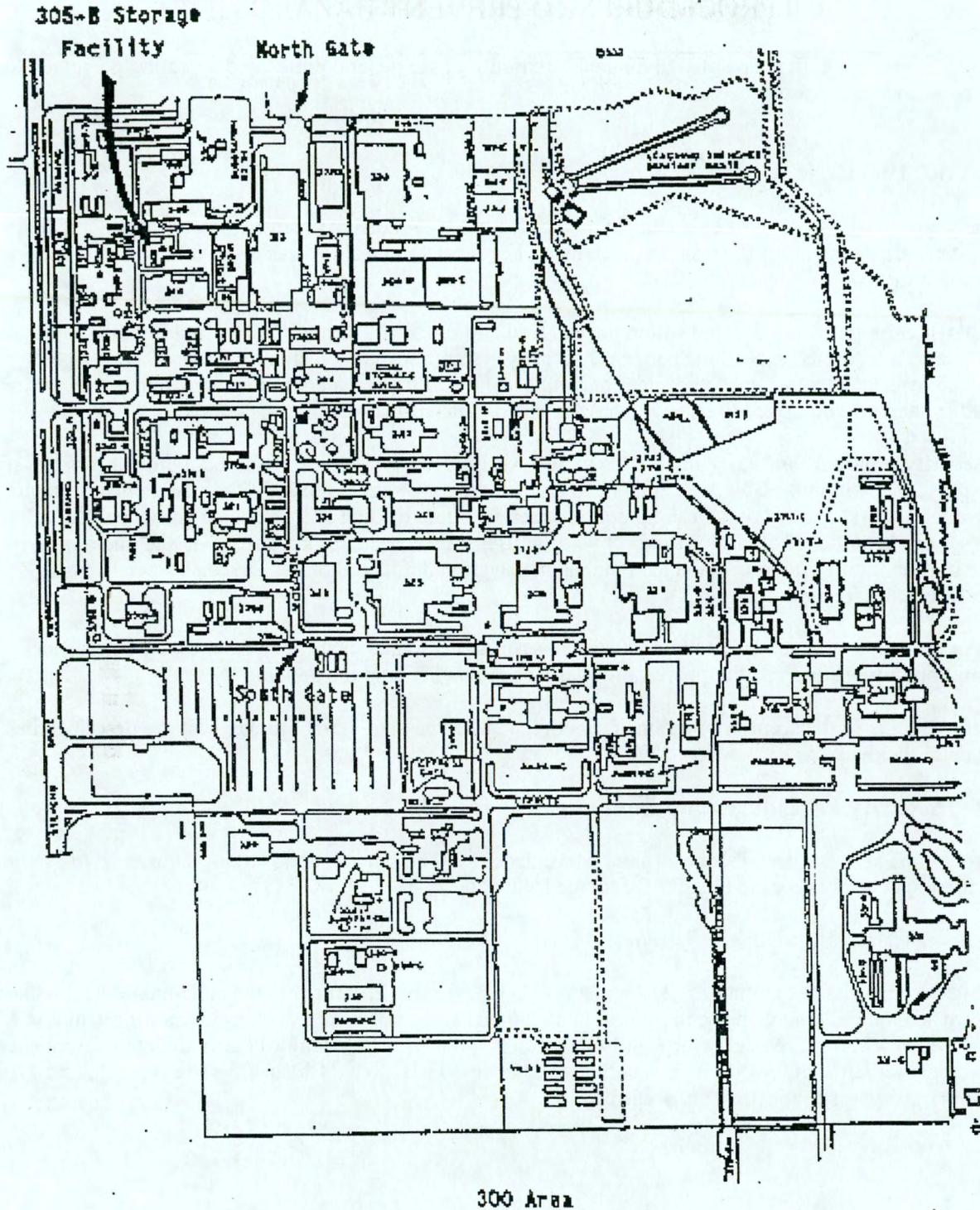
Specific aspects of the security programs for both the 300 Area and 305-B Storage Unit are described in more detail below.

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 305-B Storage Unit.

6.1.1.1 24-Hour Surveillance System [F-1a(1)]

The 305-B unit does not maintain a 24-hour surveillance system. Entrances to the building are kept locked except when the building is in use to prevent unauthorized access. Normal working hours for the unit is 8:00 A.M. to 4:30 P.M. Monday through Friday except holidays. The Hanford Patrol maintains frequent drive-by surveillance of the 300 Area buildings, including 305-B, on a 24-hour basis to ensure that no unauthorized access to the area has occurred.



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Figure 6-1. Normal Site Access - Entrance at the Southern End of Wisconsin Avenue and the North End of the 300 Area Barrier and Means to Control Entry [F-1a(2)(a), (2)(b)]

1 The entire 300 Area is surrounded by an 8-ft chain link fence topped with three strands of barbed wire.
2 There is no separate fence surrounding the 305-B unit. All waste management activities, however, are con-
3 ducted within the unit. The facility itself, therefore, provides a barrier completely surrounding the active
4 waste management operations.
5

6 Entry to the unit is controlled through the use of locked entrances. The 305-B Storage Unit is kept locked
7 at all times except when in use. Physical control of keys and records of key distributions are maintained by
8 PNNL Security. Distribution of keys to 305-B is subject to approval by the building manager, and the
9 facility operating supervisor, and a list of those personnel in possession of keys is kept in the Operating
10 Record for 305-B. Personnel in possession of keys have been instructed to admit only persons having
11 official business. Waste management organization personnel must escort all visitors to the unit.
12

13 6.1.1.2 Warning Signs [F-1a(3)]

14
15 The 305-B Storage Unit is posted with "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT" and
16 "305-B CHEMICAL WASTE STORAGE BUILDING" signs near each entrance on all sides of the unit.
17 The signs are clearly visible from the required distance of 25 ft.
18

19 6.1.2 Waiver [F-1b(1), (2)]

20
21 Waivers of the security procedures and equipment requirements for 305-B are not required and will not be
22 requested.
23

24 6.2 INSPECTION SCHEDULE [F-2]

25
26 The purpose and intent of implementing inspection procedures at 305-B are to prevent malfunctions,
27 deterioration, operator errors, and/or discharges which may cause or lead to the release of regulated waste
28 to the environment or threats to human health. A system of daily, weekly, monthly, quarterly, once every
29 four months, and annual inspections involving various PNNL departments and levels of management are
30 implemented at 305-B.
31

32 6.2.1 General Inspection Requirements [F-2a]

33
34 The content and frequency of inspections performed at 305-B are described in this section. Also, described
35 is maintenance of inspection records.
36

37 6.2.1.1 Types of Problems [F-2a(1)]

38
39 Daily, weekly, monthly, quarterly, once every four months, and annual inspections are performed at 305-B.
40 The types of problems addressed by each of these inspections are described below.
41

42 Daily Inspections. The 305-B Storage Unit is inspected daily whenever waste packaging, transfer,
43 shipping, or movement operations are being carried out. Daily inspections monitor container condition and
44 integrity, the building waste containment system, and other building areas where wastes are handled.
45 Specific inspection points include:

- 46 • Inspection of stored containers for leaks or damage
- 47 • Mislabeled or opened containers
- 48 • Improper storage (e.g., incompatible waste storage)
- 49 • Disorderliness or uncleanliness of a storage unit
- 50 • Check for accumulation of wastes in containment systems
- 51

52
53 Results of these daily inspections are recorded in the daily operating logbook, which is part of the
54 permanent 305-B Operating Record.

1 **Weekly Inspections.** Waste management organization personnel conduct weekly inspections of both safety
2 and operating equipment in 305-B. Safety and emergency equipment are inspected for functionality and
3 adequacy of supply. The weekly inspection is conducted by two personnel on the last workday of each
4 week using the inspection Logbook and the most current version of the Weekly Inspection Checklist Form
5 that is on file at 305-B. An example of a Weekly Inspection Checklist is shown in Fig. 6-2. The Inspection
6 Checklist and Inspection Logbook become a permanent part of the 305-B Operating Record.
7

8 Specific problems to be looked for with each of the items inspected are identified on the Inspection
9 Checklist Form. The use of this form enhances inspection effectiveness by providing a consistent and
10 detailed listing of areas of potential problems and those safeguards in place to prevent them. There is space
11 provided on the form for the inventory summary, comments, required remedial actions (if any), as well as
12 the date such actions are accomplished. The inspector is required to sign and date the inspection checklist
13 after performing the inspection. In addition, a space is provided for the dated signature of the co-inspector.
14 A copy of the completed inspection form with any assigned action items is distributed to the responsible
15 operating personnel. All corrective actions required must be completed within one week of the inspection,
16 which found them deficient, unless there are documentation and reason for further delay. When corrective
17 action has been completed, the responsible personnel date and initial the form.
18

19 **Monthly Inspections.** Monthly oversight inspections are conducted by the manager of the Environmental
20 Management Services Department or their designee. This monthly inspection is conducted on or near the
21 last workday of each month using the most current version of the Monthly Inspection Checklist Form. An
22 example of a Monthly Inspection Form is shown in (Fig. 6-3). Items targeted for monthly inspection
23 include, but are not limited to, equipment function and condition, housekeeping, chemical inventory, weekly
24 inspections and corresponding corrective actions, safety equipment operation, spill control and cleanup sup-
25 plies, and general packaging material inventory. Specific problems to be looked for with each of the items
26 inspected are identified on the Inspection Checklist Form. Copies of the inspection report memorandum are
27 provided to operations personnel and maintained in the files of the waste management organization. Any
28 corrective action noted on the management inspection checklist or deterioration or malfunctions in
29 equipment discovered by the inspector are delegated to responsible individuals in the operations group.
30 Corrective actions identified in the monthly management inspection must be completed before the next
31 inspection cycle unless there are documentation and reason for further delay. Monthly management
32 inspection reports memos and corrective action response documentation is part of the 305-B Operating
33 Record.
34

35 **Quarterly, Once Every Four Months, and Annual Inspections.** In addition to the several layers of
36 management inspection of 305-B, safety inspections are performed to assure the fire protection system, eye
37 wash/shower unit, and walk-in hood ventilation system are in working order. The Hanford 300 Area Fire
38 Department performs "once every four months" an inspection of fire suppressant and notification systems
39 (i.e., sprinkler system and pull boxes). This inspection includes flow tests of the sprinklers to assure no
40 blockage in the system lines as well as activation of the alarm system to assure proper operation of pull
41 boxes. On an annual basis, the Fire Department performs a full inspection of the sprinkler system, heat
42 detectors, and pull boxes. A complete flow test is performed from the furthest valve to assure flow through

Weekly Inspection Form 305-B Chemical Waste Storage Unit

Inspector Name (print): _____ Inspector Signature: _____ Time/Date: _____

Co-Inspector Name (print): _____ Co-Inspector Signature: _____ Time/Date: _____

Waste Containment Locations (Y=Yes, N=No)

Earliest PCB Accumulation Date in Cell 2: _____

Earliest RMW PCB Accumulation Date: _____

Cell:	1 Oxidizer Acids	2 Poison, PCB, Class 9	3 Caustic WSDW Non-Reg	4 Flammable, Combustible, Aerosols	5 Flammable Bulking Cylinders	6 Asbestos	7 Non-Flammable RMW	8 Flammable Drum Storage	9 Flammable RMW	10 Non-Reg. Yard	11 WSDW, Class 9 Non-Reg. Drums	12 Oxidizer Drums	13 Acid Drums	14 Alkaline Drums	15 Explosives Magazine
container integrity good?															
containers properly sealed?															
containers properly labeled?															
containers properly segregated?															
floor free of major cracks/gaps?															
sumps empty and dry?															

minimum aisle space present?

(44" leading to building exits, 36" all other aisles per NFPA 101, UBS 3315(b)1 and WAC 173-303

inventory below 30,000 gallon design capacity?

Estimated Volume = _____ gallons

inventory below UBC Class B limits?

(<480 gallons 1-A, 1-B, 1-C total and/or <240 gallons 1B

daily inspections logged?

Figure 6-2. Weekly Inspection Checklist Form. (Page 1 of 2)

1 the entire system. Fire extinguishers are also checked for proper pressure and function. Records of these
2 fire inspections and their results are kept by the Hanford Fire Department. Documentation of any required
3 corrective actions is kept in the 305-B Operating Record.
4

5 PNNL facilities support staff perform additional documented inspections of the two emergency eye
6 wash/shower units, and the walk-in hood air flow. The safety showers and air flow of the walk-in hood are
7 inspected quarterly. The emergency eyewash/safety showers are checked for proper operation, and the
8 walk-in hood ventilation face velocity must meet a 125-fpm minimum requirement. Records of these safety
9 equipment inspections and their results, as well as documentation of any required corrective actions, are
10 maintained by the preventive maintenance staff in PNNL's Facilities Management Department and
11 Technical Services Department.
12

13 **6.2.1.2 Frequency of Inspections [F-2a(2)]**

14 Inspections are conducted on a daily, weekly, monthly, quarterly, and annual basis, as described in
15 Section 6.2.1.1.
16

17 The frequency of inspections is based on specific regulatory requirements and on the rate of possible
18 deterioration of equipment and probability of environmental or human health incidents.
19

20 Areas where dangerous and mixed wastes are actively handled, including the high bay area, storage cells,
21 and flammable liquid bulking module, are considered to be areas subject to spills. These areas are given
22 daily inspections when in use, as required by WAC 173-303-320(2)(c).
23

24 The containment system (i.e., floors and sumps) is inspected daily when in use for accumulation of spilled
25 material. The containment system itself is inspected weekly for structural integrity, (i.e., no cracks, gaps,
26 leaks, etc. which could result in environmental release of wastes in the event of a spill). This frequency is
27 based on the need to perform timely corrective actions in the event that problems are noted.
28

29 Aisle space between containers is inspected weekly. This frequency is based on the consideration of the
30 rate of container transfers and movement within 305-B. Weekly inspections will allow container spacing
31 problems to be identified and corrected before they become major problems.
32

33 Emergency and safety equipment and personal protective equipment is inspected weekly. This frequency is
34 based on consideration of the expected rate of use of this equipment. Use of emergency equipment should
35 not occur more than once during any one-week period. Weekly inspections will assure that this equipment
36 is always functional and available in adequate supply.
37

38 **6.2.2 Specific Process Inspection Requirements [F-2b]**

39 The following sections detail the inspections to be performed at the 305-B Storage Unit.
40

41 **6.2.2.1 Container Inspection [F-2b(1)]**

42 When in use, dangerous and mixed waste storage areas, as well as containers stored at 305-B are inspected
43 daily for leakage, evidence of damage or deterioration, proper and legible labeling, and proper lid and bung
44 closure. When work is being performed, the containment system is also checked on a daily basis for
45 accumulation of any wastes, which may have been spilled into them. Structural integrity of the
46 containment systems is checked on a weekly basis.
47
48
49

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 2

305-B MONTHLY MANAGEMENT INSPECTION CHECKLIST

Date/Time _____ Inspector (Print/Sign) _____

	Check if Working/ Present	Comments*
Check for working condition: Lights Exhaust fans (2 in highbay) Eye wash/showers (3) Fire extinguishers		
Check housekeeping: Inside Outside Aisles/walkway clear Sumps dry		
Check waste storage: Weekly inspection conducted/filed? Facility crowded? Container condition Proper segregation		
Check supply and condition of safety equipment: Gloves - leather and disposable Goggles Face shields Coverall/lab coats Masks and cartridges		
Check spill control and cleanup supplies: Spill pillows – general Neutralizers Mercury Solvent		
Check packaging material: Drums - 5 gallon Drums - 30 gallon Drums - 55 gallon Absorbent - oil dry Absorbent – vermiculite Labels Marking supplies: pens/spray paint		

*Corrective actions are required within the next inspection cycle.

3
 4

Figure 6-2. Monthly Inspection Checklist

1 Daily and weekly inspections are performed and documented in accordance with Section 6.2.1.1. Specific
2 inspection items are enumerated in Section 6.2.1.1 in association with the inspection description and
3 frequency. Response to problems, and documentation of corrective actions are as described in
4 Section 6.2.1.1.
5

6 **6.2.2.2 Tank Inspection [F-2b(2)]**
7

8 This section does not apply to the 305-B Storage Unit because wastes are not stored or treated in tanks.
9

10 **6.2.2.3 Waste Pile Inspection [F-2b(3)]**
11

12 This section does not apply to the 305-B Storage Unit because wastes are not placed in waste piles.
13

14 **6.2.2.4 Surface Impoundment Inspection [F-2b(4)]**
15

16 This section does not apply to the 305-B Storage Unit because wastes are not placed in surface
17 impoundments.
18

19 **6.2.2.5 Incinerator Inspection [F-2b(5)]**
20

21 This section does not apply to the 305-B Storage Unit because wastes are not incinerated.
22

23 **6.2.2.6 Landfill Inspection [F-2b(6)]**
24

25 This section does not apply to the 305-B Storage Unit because wastes are not placed in landfills.
26

27 **6.2.2.7 Land Treatment Facility Inspection [F-2b(7)]**
28

29 This section does not apply to the 305-B Storage Unit because wastes are not treated in land treatment
30 units.
31

32 **6.3 WAIVER OR DOCUMENTATION OF PREPAREDNESS AND PREVENTION**
33 **REQUIREMENTS [F-3]**
34

35 The following documents the preparedness and prevention measures taken at the 305-B Storage Unit.
36

37 **6.3.1 Equipment Requirements [F-3a]**
38

39 The following sections describe the internal and external communications and emergency equipment in use
40 at 305-B.
41

42 **6.3.1.1 Internal Communications [F-3a(1)]**
43

44 Internal communication systems are used to provide immediate emergency instruction to personnel in
45 305-B. Internal communications address general emergencies which may occur in the 300 Area as well as
46 specific emergencies which may occur in 305-B.
47

48 Because of the nature of activities, which occur in the 300 Area, the potential exists for emergencies
49 outside of 305-B (e.g., release of radioactive materials) which could impact operations and staff in 305-B.
50 For this reason, the general emergency signals for the 300 Area are applicable to 305-B. These signals are
51 summarized in Table 6-1. Fire alarm signals are located in each building throughout the 300 Area. The
52 nearest emergency siren for "area evacuation" and "take cover" is located 300 yards southeast of 305-B, on
53 top of the 326 Building, and is audible in all parts of 305-B. Because fissile materials are not handled in
54 305-B, there is no criticality alarm for the unit.
55

Internal communications to provide emergency instruction in the event of an emergency in 305-B are fire alarms, public address (PA) system, and telephones. The fire alarms are to be used to provide notification for immediate evacuation of 305-B. Fire alarm pull boxes are located at all exits of the facility such that operating personnel have immediate access to one in all portions of 305-B. Four fire alarm bells are located within the 305-B and are audible at all locations within the building. The locations of the fire alarm bells are shown in Figure 6-4 and are as follows: (1) an office wing on the northeast hall; (2) an office wing next to the east entrance; (3) on the south wall of the basement; and (4) on the northeast wall of the high bay. The PA system is to be used for building-wide broadcasting of verbal emergency instructions to 305-B staff. The PA system can be accessed from any unit telephone by dialing 6-1885. The PA system speakers are located in the high bay, in the basement, and in the office wing of 305-B.

Table 6-1. Emergency Signals and Responses

Signal	Meaning	Response
Gong	Fire	Evacuate building. Move upwind. Keep clear of emergency vehicles.
Siren - steady 3-5 minute blast	Area Evacuation	Proceed promptly to north parking area. Stand by to follow instructions from emergency director.
Wavering Siren	Take Cover	Close up the 305-B Building, turn off all intake ventilation and go to the 314 Building south of the facility. Contact Laboratory Safety (337 Building) with your whereabouts. If this cannot be accomplished, stay in the 305-B Building until notified that it is safe to leave
Howler (Aa-oo-gah)	Criticality	Run immediately at least 100 yards away from the signal and take cover. Personnel inside the 305-B Building should follow the "take cover" procedure and wait for further instructions.
ALL EMERGENCY SIGNALS CAN BE HEARD BY PHONING 373-2345		

The telephone system is to be used to provide verbal emergency instructions to 305-B staff. The telephone can also be used to verbally transmit emergency data to non-305-B staff, and to request emergency services. A network of telephones covers both floors of the facility. Locations of telephones are shown in Figure 6-4. In addition to the telephone communication system at 305-B, operation personnel have access to hand held radios.

6.3.1.2 External Communications [F-3a(2)]

As mentioned in Section 6.3.1.1 above, both a fire alarm system and telephone network system are in place at 305-B. Both systems can be used to summon emergency assistance. The fire alarm system summons direct response from the Hanford Fire Department's 300 Area Station. The telephone system can be used to access Hanford's Emergency Network directly at 375-2400 or by dialing the emergency number, 911. Locations of fire alarm pull boxes and telephones are given in Figure 6-4.

6.3.1.3 Emergency Equipment [F-3a(3)]

Emergency equipment available for trained 305-B personnel includes portable fire extinguishers, a fire suppression system, spill response equipment, and decontamination equipment. Seven portable 10-lb ABC fire extinguishers, one 15-lb (or larger) Class D fire extinguisher for combustible metals, and one portable 14-lb Halon fire extinguisher are available at various locations throughout 305-B, as shown in Figure 6-4. The 10-lb ABC extinguishers are located: (1) next to the east entrance; (2) northwest end of the basement; (3) southwest end of the high bay; (4) outside of the bulking module door; (5) north of Cell No. 4 entrance; and (6) north-west end of high bay. A 15-lb ABC extinguisher is located outside cell 7. The 15-lb (or larger) class D extinguisher is located on the exterior of the organics cell wall north of the entrance. The one Halon fire extinguisher is located in the office area.

The facility is also equipped with an automatic fire suppression system consisting of galvanized steel, schedule 40 per ASTM A120 pipe and 150-lb malleable iron per ANSI B16.3 fittings. All components are

1 UL-listed or FM-approved, and installation of the fire sprinkler system has been conducted in accordance
2 with NFPA 13 for ordinary hazard. Spill cleanup supplies and equipment maintained are summarized in
3 Table 6-2. Two emergency eye wash/showers are available for emergency personnel decontamination.
4 The locations of the emergency eye wash/showers are shown in Figure 6-4. If needed, additional
5 emergency equipment can be provided by the Hanford Fire Department. Emergency equipment available
6 through the Hanford Fire Department for hazardous materials response is identified in Appendix 6A.
7

8 **6.3.1.4 Water for Fire Control [F-3a(4)]**

9
10 Adequate water volume and pressure are supplied by the large diameter line, which services 305-B for
11 potable use and fire protection. Three fire hydrants are located in immediate proximity to serve the 305-B
12 facility: (1) 80 ft directly north of the northwest corner of 305-B; (2) 40 ft directly south of the southwest
13 corner of 305-B; and (3) 60 ft directly east of the southeast corner of 305-B. In addition, the Hanford Fire
14 Department's 300 Area Station is located within 0.25 mile of 305-B.
15

16 **6.3.2 Aisle Space Requirements [F-3b]**

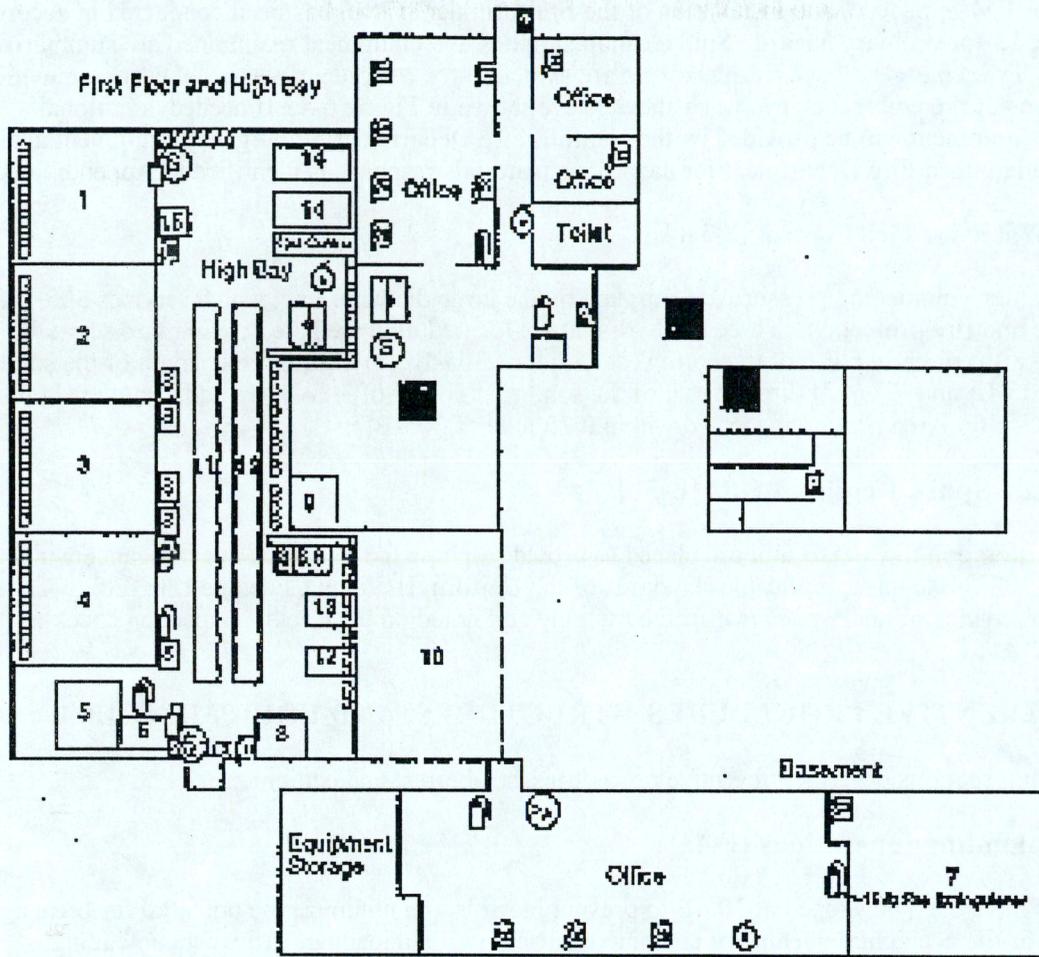
17
18 Containers stored in the 305-B unit are placed to provide aisle space clearance in accordance with
19 WAC 173-303-340(3) and applicable standards of the Uniform Building Code and Life Safety Code. The
20 proper maintenance of aisle space is inspected weekly and noted on the weekly inspection checklist
21 (Figure 6-2).
22

23 **6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]**

24
25 The following sections describe preventive procedures, structures, and equipment.
26

27 **6.4.1 Unloading Operations [F-4a]**

28
29 Procedures have been developed at 305-B to prevent hazards and minimize the potential for breakage,
30 punctures, or the accidental opening of containers during waste unloading. All waste unloading is
31 performed inside the 305-B Storage Unit. The large bay door is opened and the appropriate transporting
32 vehicle (usually a pickup truck) is driven inside. As described in Section 4.1.1.3, the unloading area has
33 secondary containment. By unloading all wastes inside the fully-contained facility, spills during unloading
34 operations will be contained. Procedures for unloading and transferring wastes to storage areas have been
35 designed to minimize hazards. All wastes are inspected prior to shipment to 305-B to ensure that they are
36 in appropriate containers and that the containers are in good condition. Inspection of containers prior to
37 acceptance at 305-B minimizes the potential for spills during unloading operations. The potential for spills
38 during waste handling is minimized through the use of appropriate container handling equipment. Large
39 waste items such as drums of nonflammable RMW are lowered into the basement of the facility for storage
40 using an overhead crane or winch assembly. The containers are immediately transported, via a hand lift,
41 into the concrete lined storage vault. Forklifts may also be used to unload heavy waste items. Small waste
42 items can be unloaded by hand. Each small waste item is removed from the secondary containment unit in
43 which it was transported (i.e., plastic storage tub) and placed in the appropriate storage location.



Legend

- 1. Acids, Oxidizers
- 2. Poisons, Class B's
- 3. Alkalines, WSDW, Organic Peroxides
- 4. Organics and Compressed Aerosols
- 5. Flammable Liquid Bulking Modules and compressed gases
- 6. Asbestos Cabinet
- 7. HMW Storage Cell
- 8. Flammable Storage
- 9. Small Quantity Flammable HMW
- 10. Outdoor Non-Regulated Drum Storage
- 11. WSDW/ORM Non-Reg Drums
- 12. Oxidizer Drums
- 13. Acid Drums
- 14. Alkaline Drums
- 15. Explosives Magazine

- (S) Safety Shower/Eyewash
- ☎ Phone
- (A) Fire Alarm Bell
- (PB) Fire Alarm Pull Box
- (14) 14-lb Motor Fire Extinguisher
- (10) 10-lb ABC Fire Extinguisher
- (15) 15-lb or larger Class D Fire Extinguisher
- Removable Access to Basement
- (E) Emergency Equipment Cabinet
- Collection Sumps

1
 2

Figure 6-3. 305-B Storage Unit Building Plan and Location of Emergency Equipment

1

Table 6-2 . Material and Equipment for Spill Containment and Cleanup

Materials/Equipment			Notes
Diatomaceous Earth	30-gallon drum	To absorb small spills of oils, solvents, aqueous materials. Not used for acids or caustics unless first neutralized.	Stored in high bay of 305-B.
Vermiculite	55-gallon drum	To absorb small spills of oils, solvents, aqueous materials. Not used for acids or caustics unless first neutralized.	Stored in high bay of 305-B.
Absorbent Pillows or Booms	Three cartons, each containing booms or 12 pillows	To be used for diking or damming and absorption of spilled materials	Each boom or pillow can absorb slightly more than 1 L of liquid.
Acid- and base-specific and solvent absorbents or neutralizers	50-lb box of each in 305-B, and a 32-oz bottle of each in transport vehicle.	Neutralization of known chemical spills.	J.T. Baker™ brand or equivalent.
Citric Acid	30-gallon drum	Neutralization of alkaline spills	Stored in high bay of 305-B.
Sodium Bicarbonate	30-gallon drum	Neutralization of acid spills.	Stored in high bay of 305-B.

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6.4.2 Run-Off [F-4b]

The 305-B Storage Unit was designed to eliminate the likelihood of off-site migration via run-off. Because the facility is completely enclosed (i.e., complete roof and no open walls), run-off of precipitation is not a factor. In addition, floors are bermed and sloped toward sumps in the loading/unloading area and each storage cell is similarly bermed, sloped, and individually sumped to eliminate the possibility of spills interacting or migrating offsite. The main high bay area and each storage cell are fully contained by at least a 6-in. high dike or ramp. Each door from the waste handling areas to the outside has a collection trench to intercept any potential run-off. The containment system for 305-B is described in more detail in Section 4.1.1.3.

6.4.3 Water Supplies [F-4c]

305-B is designed and operated to safely contain wastes and prevent any contamination of water supplies. The containment system described in Section 4.1.1.3 prevents infiltration of wastes, which could contaminate groundwater and prevents run-off of wastes, which could contaminate surface water. The nearest water supply is the 300 Area water intake, which is located on the Columbia River 0.5 mile from 305-B.

6.4.4 Equipment and Power Failure [F-4d]

The 305-B Storage Unit does not have any systems, which would cause release of dangerous waste or RMW during a power failure or equipment failure. Interruption of power to any of the systems utilizing electrical power (HVAC system, crane, forklift) merely causes the equipment to stop operating. The unit has an emergency lighting system, which operates automatically during power failure incidents.

For actions to be taken in the event of power failure to unit systems or equipment, see the unit Contingency Plan (Section 7).

6.4.5 Personnel Protection Equipment [F-4e]

Protective clothing and equipment are provided to employees during normal and emergency operations. During routine operations, the maximum number of employees working in the 305-B unit is less than fifteen. For dry chemical handling activities, such as labpacking, the minimum protection requirement is eye protection (safety glasses with side shields or chemical goggles), lab coat, and chemical resistant gloves (plastic or other construction as appropriate). Protection levels for other operations, such as bulking, and emergency situations are determined in consultation with a PNNL industrial hygienist, and staffing levels are revised according to the availability of proper protective equipment as shown below. Protective clothing and equipment available in the 305-B Storage Unit includes:

- 6 sets of chemically resistant suits, aprons, boots, and gloves
- 20 pairs of extra protective eyeglasses
- 3 SCBA
- 5 pairs of chemical goggles
- 4 face shields
- 4 full-face respirators with appropriate cartridges.

This protective equipment is stored in cabinets located outside of the operating area east entrance and is well stocked at all times. The location of the storage cabinets is given in Figure 6-4. This equipment is periodically replaced as it is used. The above inventory reflects the quantities of each type of PPE that are typically present at 305-B. Minimum quantities required to be present are given in the weekly inspection checklist, Figure 6-2.

6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, OR 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]

305-B may be used to store a variety of ignitable wastes. Precautions to prevent ignition of ignitable wastes involve separation of wastes from sources of ignition and use of procedures, which minimize the potential for accidental ignition. There are no routine sources of ignition or open flame in 305-B. Work with ignition or heat sources, if required, is limited and controlled by PNNL management and is performed in compliance with internal PNNL health and safety procedures for elimination of ignition sources. These internal procedures:

- Prohibit use of open flame equipment when working with flammable liquids
- Prohibit smoking around flammable liquids [No smoking is allowed at 305-B]
- Require electrical equipment used in flammable or explosive atmospheres to comply with the National Electrical Code, NFPA 70
- Require use of equipment with automatic, adjustable temperature controls and high-temperature limit switches to prevent overheating
- Prohibit placement of flammable liquids on hot surfaces
- Require all static electricity sources to be grounded in areas where ignitable vapors may be present
- Require bonding of conductive containers when transferring flammable liquids.
- Require use of non-sparking tools in flammable waste storage areas

All maintenance or modifications that require work with ignition sources must receive prior approval by a PNNL Safety Engineer. Smoking is not allowed in 305-B at any time and the interior and exterior of the facility are clearly posted with "No Smoking" signs. Waste storage areas are not heated by any radiant heat source. All tools used to open ignitable waste containers are constructed of nonsparking materials.

1 Ignitable waste storage areas are inspected annually by a PNNL fire safety engineer familiar with the
2 Uniform Fire Code. This inspection is documented in the Operating Record. There are also storage
3 restrictions at 305-B for combustible wastes as part of fire safety requirements. The storage restrictions
4 defined in the Uniform Building Code for Class B Occupancy apply to 305-B (International Conference of
5 Building Officials 1988). The weekly inspection for 305-B includes checking to see if the inventory of
6 combustibles is below these limits. These inspections are documented in the Operating Record.
7

8 **6.5.2 General Precautions for Handling Ignitable or Reactive Waste and Mixing of** 9 **Incompatible Waste [F-5b]**

10
11 As described in Section 6.5.1, ignitable wastes are managed in a manner, which protects the wastes from
12 sources of ignition or open flame. Ignitable waste containers are maintained in good condition and
13 inspected weekly to minimize the potential for releases which could result in fire. Containers of ignitable
14 waste are protected from high temperature to prevent the potential for pressurization and buildup of
15 ignitable vapors. Containers of ignitable waste are stored in flammable material storage cabinets within
16 waste storage cells, as described in Section 4.1.1.6. Limitations on sizes of containers and amounts of
17 storage in cabinets are found in Section 4.3.1.
18

19 Because of the wide variety of wastes, which may be accepted at 305-B, the potential exists for storage of
20 incompatible wastes. Mixing of incompatible wastes is prevented through waste segregation and storage
21 procedures. Chemical wastes stored in 305-B are separated by compatibility and hazard class and stored in
22 separate storage cells. Separate storage shelves and cabinets are used within the storage cells, as described
23 in Section 4.1.1.6, to provide further waste segregation. The following general guidance is used to
24 segregate and separate chemicals:
25

- 26 • Store acids on a low storage shelf or in acid storage cabinets.
- 27 • Separate acids from bases and alkaline metals such as potassium or sodium
- 28 • Separate oxidizing acids from organic acids and flammable or combustible materials
- 29 • Store bases away from acids and store solutions of inorganic hydroxides in polyethylene containers
- 30 • Store oxidizers away from flammable or combustible materials and reducing agents such as zinc,
31 alkaline metals, and formic acid
- 32 • Store peroxide-forming chemicals in airtight containers in a dark, cool, and dry place (inside of
33 cabinets)
- 34 • Store flammable materials in approved containers or cabinets
- 35 • Separate flammable materials from oxidizing acids and oxidizers and keep them away from sources of
36 ignition
- 37 • Clearly mark cabinets to identify the hazards associated with their contents.
- 38 • The potential for waste ignition or reaction at 305-B is also minimized through storage restrictions on
39 hazardous material quantities. The storage restrictions defined in the Uniform Building Code for
40 Class B Occupancy apply to 305-B (International Conference of Building Officials 1988). The weekly
41 inspection of 305-B includes checking to see if waste inventories are below these limits. These
42 inspections are documented in the Operating Record.
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8.0 CONTENTS

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8.0 PERSONNEL TRAINING [H]

The information contained in this chapter outlines the Personnel Training Program for PNNL personnel associated with the operation of the 305-B Storage Unit. The program is instituted in accordance with WAC 173-303-330. A copy of this training plan is kept at 305-B.

8.1 OUTLINE OF TRAINING PROGRAM [H-1]

The training program for personnel at 305-B is instituted to meet the requirements of WAC 173-303-330. PNNL combines classroom instruction and on-the-job training to teach all personnel to perform their duties (specific to each job classification) in a way that ensures the facility's compliance with WAC 173-303, teaches personnel dangerous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed, and ensures that personnel are able to respond effectively to emergencies. The training requirements for 305-B operating personnel are depicted graphically in Figure 8.1. PNNL personnel not assigned to the 305-B facility may, on an occasional basis, assist with specific operations at this TSD unit. Proper training for the job will be given to the personnel in these situations before the beginning of any unsupervised work. This training shall be documented by the training coordinator and kept on file for future reference.

8.1.1 Job Titles and Job Descriptions [H-1a]

The Unit Operating Supervisor is responsible for the daily operation of 305-B in compliance with regulations administered under RCRA, the State of Washington Dangerous Waste Regulations (WAC 173-303), and PNNL waste operating procedures.

The Unit Operating Supervisor is ultimately responsible for assessing 305-B compliance, conducting inspections and overseeing any corrective actions which may result from them, ensuring waste handling and storing procedures are followed, and serving as BED to implement proper emergency procedures when necessary. In addition to the responsibilities mentioned above, it is the role of the Unit Operating Supervisor to direct new employees so that successful completion of introductory and on-the-job training will be accomplished in the first six months of employment.

The RMW Waste Management staff is responsible for the mixed waste operation of 305-B. This staff member must review all mixed waste disposal requests and ensure their accuracy and reliability. In addition, the RMW Waste Management staff will dispatch a pickup team and oversee mixed waste pickup and transportation to the 305-B Storage Unit. When adequate volumes of mixed waste have accumulated to warrant disposal of the waste, the RMW Waste Management staff are responsible for readying the waste for shipment. These duties include packaging, labeling, manifesting, and recordkeeping.

The Waste Management Engineers are responsible for evaluating unit compliance, managing the PNNL PCB waste stream, managing the waste designation data base, and overseeing waste designations. Waste Management Engineers also perform waste management operations such as pickup and lab packing of small containers. They also oversee offsite shipping of wastes and ensure compliance with DOT regulations.

TRAINING COURSE NAME	STAFF POSITION ¹			
	OS	E	TS	C
Building Emergency/Contingency Plan	A ²	A	A	A
Handheld Radio Operator	I	I	I	I
General Radiation Safety	B	B	B	N
Radiation Safety for Females ³	I	I	I	I
Respiratory Protection	A	A	A	N
TSD Operator (24 hour w/8-hour refresher)	I/A	I/A	I/A	I/A
SCBA Training	A	A	A	N
Fire Extinguisher Use	A	A	A	A
Worker Right-To-Know	I	I	I	I
Vehicle Accident Prevention	T	T	T	T
Crane, Hoist and Rigging Safety	N	N	T	N
Safe Forklift Operation	N	N	T	N
Hazardous Waste Shipment Certification	T	T	T	N
Radioactive Material Shipping Representative	T ⁴	T ⁴	T ⁴	N
305-B Safe Operating Procedures	A	A	A	A
Advanced Hazardous Waste Training	A	A	A	N
Hazardous Waste Operations Supervisor	I	N	N	N
Waste Designation Training	I	I	I ⁵	N

¹Staff Position Key: OS Unit Operations Supervisor
 E Waste Management Engineers
 TS Waste Management Technicians and Scientist/Engineering Associates
 C Waste Management Clerks

²Requirements Key: A Annually; B Biennially; T Triennially; I Initially upon assignment to the unit; N Not Required.

³Required for female staff only. This information is given in the various radiation safety classes and is not a separate stand alone class.

⁴ Successful completion of this course meets the requirements of the Hazardous Waste Shipment Certification course.

⁵Required for any TS that has the assigned duty of making waste designations.

1 Waste Management Technical Specialists and Technicians are responsible for the physical operations at
2 305-B. The persons in these positions are responsible for packaging, labeling, and preparing wastes for
3 shipment to disposal facilities and will assist in any sampling activities and/or waste pickups. One or more
4 of these staff members will also serve as alternate BEDs and zone wardens for 305-B in the event of an off-
5 normal event or an emergency. As zone warden, the primary responsibility is to account for the safe
6 evacuation of plant personnel and report this to the BED. They are also responsible for performing minor
7 maintenance and upkeep of the 305-B building.

8
9 Waste Management Clerks are responsible for recordkeeping and database maintenance at the 305-B
10 Storage Unit. It is the role of the Waste Management Clerk to enter data and update the databases as
11 required. Verification of waste inventories is also the clerk's responsibility; other roles include reporting,
12 preparation of labels, manifests and associated paperwork, and unit upkeep.

13
14 The operations supervisor and all engineer positions require, at a minimum, a college science or engineering
15 degree. The technical specialist positions require, at a minimum, a high school diploma or equivalent, with
16 one year of college science/chemistry or an equivalent year of job specific experience. The technician
17 positions require, at a minimum, a high school diploma or equivalent, with college level science/chemistry
18 or equivalent job experience. The clerk position requires, at a minimum, a high school diploma or
19 equivalent. For all positions, requisite skills, and qualifications required are: (1) previous experience
20 performing similar tasks, as detailed in the job description, and/or (2) specific specialized course work
21 intended to train and qualify the individual for tasks similar or equal to those detailed in the specific job
22 description.

23
24 A current list of the personnel filling the above-mentioned positions can be found in Appendix 8A. The
25 personnel list will be updated as the names of responsible personnel change.

26 27 **8.1.2 Training Content, Frequency, and Techniques [H-1b]**

28
29 A number of training courses are required of 305-B personnel on periodic basis. A brief description of
30 required courses is given in this chapter (Figure 8-1). Equivalent training may be taken in place of the
31 training identified in Figure 8-1 with approval from the 305-B Unit operating Supervisor or the
32 Environmental Management Services Department Manager. Documentation of the training substitution
33 will be placed in the operating record (within 7 days after the training was received), accompanied by a
34 narrative explanation, and the date of the training. The documentation shall be made available to Ecology
35 or EPA during inspections for assessment. If Ecology or EPA determines that the training substitution was
36 not equivalent to the original, the original training will be taken or an acceptable substitution will be found.

37
38 New employees at 305-B must successfully complete the training program within 6 months after their
39 employment at or assignment to the unit. At a minimum, the training familiarizes personnel with
40 emergency equipment and procedures, unit operations, and Occupational Safety and Health Administration
41 (OSHA) regulations.

42 43 **8.1.3 Training Coordinator [H-1c]**

44
45 Training at PNNL is provided by a number of specialists in their fields, including a Training Coordinator
46 from the waste management organization who is responsible for coordinating dangerous waste training.
47 The position of Training Coordinator is filled by facility staff members having "hands-on" experience with
48 handling chemical wastes. PNNL also has a unit, which tracks and monitors training for PNNL

1 employees. This coordination includes a system for "flagging" affected employees when additional training
2 and/or follow-up is warranted.

3 4 **8.1.4 Relevance of Training to Job Position [H-1d]**

5
6 Titles and job descriptions of personnel involved in operating 305-B are set forth in Section 8.1.1. All
7 training is relevant to the positions in which the unit personnel are employed; for normal operating
8 conditions the training includes:

- 9
- 10 • Advanced Hazardous Waste Management — Annual: This training covers internal PNNL
11 hazardous and mixed waste procedures and issues, and regulatory requirements applicable to
12 PNNL operations for 90 day areas and TSD operations.
 - 13
14 • Worker Right-to-Know — Initial: This course familiarizes the employee with their rights under the
15 right-to-know statutes. Information on material safety data sheets and their availability and on
16 standard industrial hygiene terms is also covered.
 - 17
18 • Vehicle Accident Prevention — Initial and triennial refresher: This course is intended to familiarize
19 employees with safe driving rules and with the requirements for operation of government-owned
20 and PNNL-owned vehicles.
 - 21
22 • General Radiation Safety — Biennial: This course gives staff members information on the basic
23 characteristics of radiation, natural and manmade sources, biological effects and risks of radiation
24 exposure, ALARA, contamination control, and warnings and alarms. This course requirement can
25 be met by taking any of the radiation safety courses such as Radiation Worker II, Radiation
26 Worker I or General Employee Radiation Training.
 - 27
28 • NCRP Report 39 — Initial: For female radiation workers only. The briefing informs the female
29 radiation worker of the potential hazards of radiation to women of reproductive age. This
30 information is provided in the various radiation safety classes including Radiation Worker I/II and
31 General Employee Radiation Training and is not a separate stand alone class.
 - 32
33 • 305-B Safe Operating Procedures — Annual or whenever procedure content is revised, whichever
34 is more frequent. Reading and studying the written procedures fulfills this requirement.
 - 35
36 • Hazardous Waste Shipment Certification — Triennial: This course provides training to those who
37 supervise and prepare hazardous waste shipments and who certify that these shipments have been
38 properly prepared in compliance with applicable laws and regulations. This training ensures that
39 these persons understand their responsibilities and liabilities in the shipment of hazardous waste
40 and that they have a basic understanding of which regulations are applicable and how they must
41 achieve compliance.
 - 42
43 • Radioactive Material Shipping Representative — Triennial. This course provides training in the
44 onsite radioactive material shipping procedures and requirements. Successful completion of this
45 course is required to receive authorization to sign for onsite radioactive shipments (onsite RSRs).
 - 46
47 • Crane Hoist and Rigging Safety — Triennial: This course provides instruction in the safe operation
48 of cranes and in proper rigging techniques.

- 1
- 2 • Safe Forklift Operation — Triennial: This course provides instruction in the safe operation of
- 3 forklifts.
- 4
- 5 • Hazardous Waste Operations Supervisor Training — This course gives hazardous waste operation
- 6 instruction from a manager's standpoint.
- 7
- 8 • Waste Designation Training — This course gives instruction on proper designation of waste in
- 9 accordance with WAC 173-303.
- 10

11 Training is tracked and documented by PNNL and by the unit training coordinator. Training records and
12 class documentation are held on file in the waste management operations office in 305-B as part of the
13 Operating Record. The waste organization manager is responsible for ensuring the necessary training is
14 provided to the 305-B staff.

15 **8.1.5 Training for Emergency Response [H-1e]**

16 Training is adequate to ensure that personnel are able to respond effectively to emergencies and are familiar
17 with emergency procedures, emergency equipment, and emergency systems. Emergency response training
18 includes, but is not limited to:

- 19 • Using, inspecting, repairing, and replacing unit emergency and monitoring equipment
- 20
- 21 • Activating and responding to communications and alarm systems
- 22
- 23 • Response to fires and explosions
- 24
- 25 • Shutdown of operations.
- 26
- 27
- 28
- 29

30 Procedures for Using, Inspecting, Repairing, and Replacing Unit Emergency and Monitoring Equipment.

31 Personnel operating 305-B are adequately trained to ensure prompt and effective response to emergency
32 situations that may arise during operation of the unit. The following required safety courses outline
33 procedures for using, inspecting, repairing, and replacing unit emergency and monitoring equipment.

- 34
- 35 • Building Emergency Preparedness (contingency plan): conducted annually or when changes are
- 36 made, whichever is more frequent, to familiarize the employee with the written contingency plan
- 37 and specific responsibilities of emergency procedures.
- 38
- 39 • Hand-Held Radio Operator: conducted initially, this briefing makes the employee familiar with the
- 40 operation of the hand-held and truck-mounted radios for both everyday and emergency operation.
- 41 This briefing also includes a discussion on radio etiquette.
- 42
- 43 • Respiratory Protection (SAF-RP-001): conducted annually, the course familiarizes the operating
- 44 staff with the proper use of air purifying respirators and their limitations. It also makes the staff
- 45 aware of potential respiratory hazards, how to recognize them, and what actions to take.
- 46
- 47 • Treatment, Storage, or Disposal (TSD) Facility Operator Safety (SAF-WM-007): consists of
- 48 24-hour initial training and an 8-hour annual refresher. This course provides extensive instruction

1 on the use of field survey instruments such as combustible gas indicators, oxygen meters, detector
2 tube systems, photo and flame ionization instruments, organic vapor analyzer (OVA) meters, and
3 atmospheric sampling instruments. Other topics covered include heat-induced illnesses, OSHA's
4 Emergency Response Standards, lists of personal protective equipment, hazardous materials
5 classification systems, confined space work practices, liquid storage tanks, contamination control,
6 toxicology, medical monitoring, and many others.

- 7
- 8 • SCBA: conducted annually, this course instructs the employee of the advantages and limitations of
9 the SCBA equipment. Key items covered in the course content will include equipment inspection,
10 modes of operation, donning procedures, recognition and response to malfunctions, maintenance
11 and repair, and practical demonstrations.
- 12
- 13 • Fire Extinguisher Use: conducted annually, this 30-minute course consists of a videocassette,
14 lecture, and reading materials. Its intent is to familiarize all personnel with proper discharging,
15 inspecting, and maintenance procedures for fire extinguishers to be used during an emergency.
- 16

17 Key Parameters for Automatic Waste Feed Cut-Off Systems. This section is not applicable because there
18 are no automatic waste feed systems at 305-B.

19

20 Communications or Alarm Systems. Personnel operating 305-B are properly trained in both handling
21 communication devices and alarm systems and recognizing alarm sirens as to their meaning. A Hand-Held
22 Radio Operator training course (outlined above) is required to be a part of all 305-B employee training. In
23 addition, the Contingency Plan, also required reading for all the operating staff at 305-B, details
24 communication and alarm systems, as well as proper response to each system during an emergency.

25

26 Response to Fires. Personnel at 305-B are adequately trained to respond to fires at the unit. All staff is
27 trained annually in implementation of the contingency plan, which outlines each person's immediate and
28 sequential actions in case of a fire emergency. In addition, all staff receives training for proper handling,
29 maintenance, and discharge of on-site fire extinguishers, and proper activation of alarm and fire
30 suppressant systems.

31

32 Response to Groundwater Contamination Incidents. This section is not applicable because groundwater
33 monitoring is not required at 305-B.

34

35 Shutdown of Operations. Procedures for shutdown of operations of 305-B because of an emergency
36 situation are outlined in the contingency plan. As mentioned previously, all staff is trained annually in
37 implementation of the contingency plan. The person responsible for the decision to shut down is the BED
38 or alternate.

39

40 **8.2 IMPLEMENTATION OF TRAINING PROGRAM [H-2]**

41

42 The training program is currently being implemented. All employees will receive training within six
43 months of their date of hire or their transfer to a new position at the unit. Personnel will not work in
44 unsupervised positions until they successfully complete the training course. Records of each individual's
45 formal training are maintained at the 305-B unit; backup files are kept at the office of the Laboratory
46 Training Coordinator. Training records of current employees will be kept until closure of the unit.
47 Records of former employees are kept for at least three years from the date the employee last worked at the
48 unit.

1
2 The training outline is on file in the Laboratory Training Coordination office and at 305-B and is available
3 for review by all waste handling and management personnel, emergency response personnel, and all
4 regulatory agencies. Provisions are made for updating and reviewing courses, as necessary, to ensure
5 compliance with WAC 173-303.

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Hanford Facility RCRA Permit Modification Notification Forms

for

Part VI, Chapter 1 and Attachment

300 Area Process Trenches

Page 1 of 4

Index

- Page 2 of 4: Section 8.0, Attachment 31
Page 3 of 4: Section 8.0, Pages 8-3, 8-4, 8-7, 8-8, and 8-9
Page 4 of 4: Section 8.0, Pages 8-7, and 8-9

Hanford Facility RCRA Permit Modification Notification Form

Unit:
300 Area Process Trenches

Permit Part & Chapter:
Part VI, Chapter 1 [Section 8.0 of Attachment 31]

Description of Modification:

Deletion of obsolete requirements throughout Section 8.0, "Postclosure Plan" of Attachment 31 (*300 Area Process Trenches Modified Closure/Postclosure Plan*, DOE/RL-93-73, Rev. 1): The 300 Area Process Trenches achieved clean closure of the soil column. Therefore, no postclosure care requirements pertain to it. The current postclosure plan contained in Section 8.0 contains information on postclosure requirements for soil column contamination, such as inspections, maintenance, and security measures. It is requested that the information on soil column postclosure actions be deleted from the text of Section 8.0 to reflect clean closure. This section will continue to reflect postclosure care requirements due to groundwater contamination. Attachment 1 of this notification form contains a strikeout version of Section 8.0 that reflects these changes. Attachment 2 contains a clean copy of Section 8.0 with the text to be deleted removed. These changes will also cause Permit Condition VI.1.B.p to be obsolete because they pertain to security control associated with contaminated soil rather than groundwater.

Attachment 1 and 2 also reflect typo/administrative/information changes made through a class 1 modification.

Because closure has been completed and certified, Sections 1.0 through 7.0 and all Appendices of Attachment 31 should be deleted. These sections pertain to requirements that were applicable during closure of the 300 Area Process Trenches. This will prompt two changes in Part VI, Chapter 1 of the Permit. In VI.1.A, the following should be placed at the end of the paragraph: "The 300 Area Process Trenches achieved closure in May 1998 in accordance with the closure plan contained in Attachment 31 and Permit Conditions contained in this Chapter. Therefore, enforceable portions of the plan currently consist of those associated with postclosure care. These portions are Sections 8.2, 8.4, and 8.5." Also, various Permit Conditions are now obsolete. In VI.1.B, the following should be placed before the listing of Permit Conditions: "Closure activities were completed at the 300 Area Process Trenches in May 1998. Therefore, the only Permit Conditions currently applicable to this unit during postclosure care are VI.1.B.b, VI.1.B.i, VI.1.B.q, and VI.1.B.r.

Modification Class: ¹

please check one of the Classes:

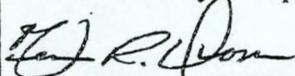
Class 1	Class 1 ¹	Class 2	Class 3
			X

Relevant WAC 173-303-830, Appendix I Modification: Not explicitly listed.

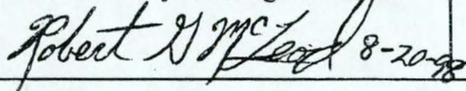
Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Not explicitly listed. A formal request to down grade this change to a Class ¹1 modification is requested by way of this notification.

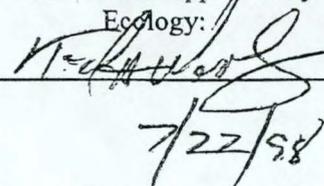
Submitted by Co-Operator:



Reviewed by RL Program Office:



Reviewed and Approved by Ecology:



¹If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
300 Area Process Trenches

Permit Part & Chapter:
Part VI, Chapter 1 [Section 8.0 of Attachment 31]

Description of Modification:

The following changes represent administrative/informational changes to Attachment 31:

Page 8-3, Section 8.2.2, 2nd paragraph, last sentence: well inspection forms are used instead of a log book. The last sentence is revised to read as follows: "Problems and/or damage will be noted on the well inspection forms for tracking of repairs."

Page 8-4, Section 8.4, 2nd to last sentence: well inspection forms are used instead of a log book. The last sentence is revised to read as follows: "The maintenance plan is based on observations made and recorded in the well inspection forms during site inspections."

Page 8-4, Section 8.4.1, 1st sentence: well inspection forms are used instead of a log book. The 1st sentence is revised to read as follows: "...and/or problems noted in the well inspection forms during inspections..."

Page 8-4, Section 8.4.1, last sentence: well inspection forms are used instead of a log book. The last sentence is revised to read as follows: "Repairs to the four steel guard posts at each monitoring well will be made before the following inspection period and tracked on well inspection forms to completion."

Page 8-7, Section 8.5.5, first paragraph: delete "40 hours of" from the last sentence. Hazardous waste site operation training as provided by 29 CFR 1910.120 is not a 40 hour course. A similar change was made previously during closure activities in Section 7.7 through downgrading of a Class 3 to a Class 1 modification (approved by T.A. Wooley on May 13, 1998).

Page 8-7, Section 8.5.5, second bullet: delete "and the 200 East Area emergency control director by radio." This change reflects current emergency response to fires which is to notify the Hanford Fire Department only.

Page 8-8, Section 8.7: The telephone number listed is obsolete and has been deleted.

Page 8-9, Section 8.8, 2nd sentence: delete "closure plan" and replace with "postclosure plan".

Modification Class:	Class 1	Class 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Administrative and informational changes

Submitted by Co-Operator: <i>[Signature]</i>	Reviewed by RL Program Office: <i>[Signature]</i> 8-22-98	Reviewed by Ecology: <i>[Signature]</i>
---	--	--

7/22/98

Hanford Facility RCRA Permit Modification Notification Form

Unit:
300 Area Process Trenches

Permit Part & Chapter:
Part VI, Chapter 1 [Section 8.0 of Attachment 31]

Description of Modification:

Typographical errors in Section 8.0 of Attachment 31 have been corrected as follows:

Page 8-7, Section 8.5.6: Section 8.4.1 is incorrect. The correct section is 8.5.1.

Page 8-9, Section 8.8: The last sentence contains a typographical error on the figure number which should be Figure 7-4.

The following is an "other change" to the training plan of Attachment 31:

Page 8-7, Section 8.5.4, Training Director: delete this section as there are various organizations/individuals that are responsible for directing various aspects of training, depending on site contractor and type of training. This level of detail is not necessary in this plan. To eliminate the need to keep updating the section as organizations change, this section has been deleted.

Modification Class:

please check one of the Classes:

Class 1

Class 1

Class 2

Class 3

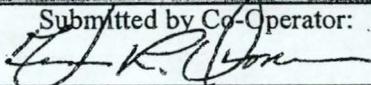
X

Relevant WAC 173-303-830, Appendix I Modification: A.2.

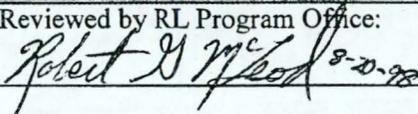
Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Correction of typographical errors. Changes in the training plan; other changes.

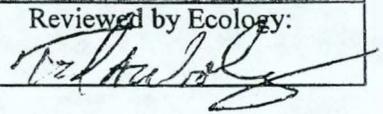
Submitted by Co-Operator:



Reviewed by RL Program Office:



Reviewed by Ecology:



Hanford Facility RCRA Permit

Part VI, Chapter 2

300 Area Process Trenches

Page Changes

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Section 8.0

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32

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1 Compliance monitoring will include routine visual inspections, maintenance, and groundwater monitoring
2 similar to that identified in the following sections. The compliance monitoring plan will also include a
3 timetable for performance of these activities. The plan shall provide for at least one assessment activity that
4 will be performed after 5 years to ensure that contamination has remained at previous concentrations or has
5 diminished in concentration. The plan will identify the nature and date of the assessment activity as an
6 anticipated year of final closure. The requirements for the assessment activity will be contained in the
7 CERCLA O&M Plan and its support documents.

8 The assessment activity could be composed of visual inspections of the site, evaluation of existing data from
9 the groundwater monitoring system, and/or other activities. If the contamination levels are shown to be the
10 same or less than at the time of closure, the permittees may request that Ecology reduce or eliminate
11 compliance activities, including institutional controls.

12 8.2 INSPECTION PLAN

13 This section describes compliance monitoring activities, security equipment, and inspections for well
14 conditions during a period of modified closure compliance monitoring. Table 8-1 lists the inspection items
15 and the inspection frequency for the postclosure care period. These inspections may be implemented in
16 checklist form. Such a checklist could specify entering checklist performance and results in the appropriate
17 inspection logbook.

18 8.2.1 Security Control Devices

19 Each of the groundwater monitoring wells has a locked cap to prevent unauthorized access and is surrounded
20 by four steel guard posts for visibility to prevent damage from vehicles. The overall well condition, locks,
21 guard posts, and pumps will be inspected during each sampling event. Problems and/or damage will be noted
22 on well inspection forms for tracking of repairs.

23 8.2.2 Well Condition

24 Inspection of groundwater monitoring wells will be carried out under internal procedure BHI-EE-01
25 (BHI 1995) or equivalent guidance. This procedure calls for a surface inspection of a well at each sampling
26 event. The procedure also calls for a subsurface inspection of the well at a minimum of every 3 to 5 years.
27 This routine subsurface inspection may consist of pulling and inspecting the pump, brushing the inner walls
28 of the casing and screen, and conducting a down-hole television survey.

29 8.3 GROUNDWATER MONITORING PLAN

30 Groundwater monitoring, in accordance with MTCA, WAC 173-340, will be required as a condition of
31 modified closure. The current joint RCRA/CERCLA program (Chapter 5.0) will be assessed to ensure that it
32 meets site monitoring needs, and a revised groundwater monitoring plan will be prepared and submitted to
33 Ecology for approval. This assessment will include an evaluation of the monitoring well network in relation
34 to the groundwater flow direction and the constituents selected for analysis. Groundwater samples will be
35 collected quarterly and semiannually under a final status compliance monitoring program. The revised
36 groundwater monitoring plan will meet the requirements of WAC 173-303-645, WAC 173-303-610(7),
37 WAC 173-340-410, and WAC 173-340-820.

38 The objectives of this proposed compliance monitoring program will be to (1) obtain samples that are
39 representative of existing groundwater conditions; (2) identify key monitoring constituents that were

1 attributable to past operations of the 300 APT; (3) determine applicable groundwater protection standards
2 (e.g., risk-based maximum concentration limits or background-based alternate concentration limit(s); and (4)
3 determine whether referenced groundwater concentration limit(s) for a given parameter or parameters are
4 exceeded. A DQO process will be used to guide the groundwater monitoring activities to be conducted for
5 the 300 APT. The primary purpose of the DQO monitoring process will be to ensure that the type, quantity,
6 and quality of groundwater monitoring data used in the decisionmaking process are appropriate for their
7 intended applications.

8 Until final RCRA closure of the 300 APT, the regulators will continue to receive quarterly reports following
9 current reporting requirements. The *Annual Report for RCRA Groundwater Monitoring Projects at*
10 *Hanford Site Facilities* (DOE-RL 1994a), which includes the 300 APT, will also continue to be submitted to
11 the regulators. The annual report interprets groundwater quality data (including statistical comparisons of
12 upgradient and downgradient indicator parameters) and water levels, and reviews the adequacy of the network
13 relative to changes in the groundwater system. If data indicate that the current network is no longer adequate,
14 an amended groundwater monitoring plan will be prepared describing steps necessary to rectify inadequacies,
15 including the installation of additional wells.

16 8.4 MAINTENANCE PLAN

17 This section provides a plan for maintenance of the unit during the compliance monitoring period required for
18 modified closure. Elements of this maintenance plan include repair of security devices, and well replacement.
19 The maintenance plan is based on observations made and recorded in the well inspection form during site
20 inspections. Except where immediate action is required, maintenance action will be initiated within 90 days
21 of inspection and discovery.

22 8.4.1 Repair of Security Control Devices

23 The responsible maintenance organization will be notified of any problems to the well locks or guard posts
24 and/or problems noted in the well inspection form during inspections and/or well monitoring activities. Well
25 repairs will be made as soon as possible after notification of damage. Repairs to the four steel guard posts at
26 each monitoring well will be made before the following inspection period and tracked on well inspection
27 forms to completion.

28 8.4.2 Well Replacement

29 Maintenance of groundwater monitoring wells will be carried out under internal procedure BHI-EE-01 (BHI
30 1995) or equivalent guidance. This procedure covers correction of problems found during routine inspection
31 or that manifest themselves at other times. If field maintenance procedures are inadequate to solve problems
32 identified during site inspection, management will decide whether to repair or replace the well.

33 Where monitoring well damage requires modification of the groundwater monitoring program, the monitoring
34 plan will be amended in accordance with WAC 173-303-610 (8)(d).

35 8.5 PERSONNEL TRAINING

36 This section describes the training of personnel required to maintain the 300 APT in a safe and secure manner
37 during postclosure care as required by 40 CFR 265.16, WAC 173-303-330, and Condition II.C.2 of the
38 Hanford Facility Dangerous Waste Permit.

1 **8.5.1 Outline of the Training Program**

2 This section outlines the introductory and continuing training programs necessary to conduct the postclosure
3 activities at the 300 APT in a safe manner. This section also includes a brief description of how training will
4 be designed to meet job tasks as required in 40 CFR 265.16(a).

5 **Surveillance Personnel:** The following outline provides information on classroom and on-the-job training
6 that surveillance personnel will complete before conducting independent site surveillance at the 300 APT:

- 7 • Security inspections
8 • Location, integrity, and inspection of groundwater wells.

9 **8.5.2 Job Description**

10 This section provides the job description(s) for postclosure activities at 300 APT as required by 40 CFR
11 265.16(d)(1) and WAC 173-303-330(2)(a).

12 **Site Surveillance:** Personnel with training in the following areas will conduct the inspections:

- 13 • Control devices
14 • Damage
15

16 **8.5.3 Training Content, Frequency, and Techniques**

17 The training of personnel requires the following job-specific training areas, as appropriate.

- 18 • **Emergency Preparedness Training:** This training will include a review of emergency procedures
19 that consists of listening to standard emergency signals, and reporting procedures.
- 20 • **The RCRA Groundwater Monitoring Scope, Organization, and Quality Assurance Plan:** This
21 training will include the documentation requirements included in the chain of custody to
22 the laboratory, how to correct mistakes made on field data sheets, and any applicable manifests or
23 shipping orders required for shipping samples to the laboratory.
- 24 • **Groundwater Field Sampling Procedures:** This training will include pump description and
25 operation of the three types of pumps (used by the field personnel), operational procedures for the
26 generators and the pumps used to gather groundwater samples, and special requirements for
27 collecting and packaging samples containing volatile organic materials that require acid preservatives
28 or special filtering. Training also will be given in the areas of field data record preparation and chain
29 of custody to the laboratory.
- 30 • **Site Security Inspections:** Personnel will be instructed on how to inspect for obvious signs of a
31 security breach. Signs may include downed barricades.
- 32 • **Location, Integrity, and Inspection of Groundwater Wells:** Personnel will be shown the
33 locations of the groundwater wells and instructed on how to inspect the cap and casing of each well
34 to ensure that it is locked.

1 **8.5.4 Training for Emergency Response**

2 This section will demonstrate that personnel conducting postclosure activities at the 300 APT have been fully
3 trained to respond effectively to emergencies and are familiar with emergency procedures and equipment. In
4 addition, hazardous waste site operation training will be provided in accordance with 29 CFR 1910.120.

5 • **Response to Fires:** The 300 APT will have no existing structures and may be covered with a soil
6 cover. As such, there is no need for fire equipment. However, if personnel are at the unit when a
7 brushfire breaks out, they will notify the Hanford Fire Department.

8 • **Response to Groundwater Contamination:** Based on the current groundwater monitoring
9 program, groundwater contamination beneath the 300 APT does not constitute an emergency
10 situation, nor will it become so as a result of closure. Therefore, emergency response training in this
11 regard is not warranted at this time.

12 **8.5.5 Implementation of Training Program**

13 Surveillance personnel will undergo the required training programs outlined in Section 8.5.1 as they pertain to
14 monitoring requirements. Surveillance personnel will not be allowed to perform inspections at the 300 APT
15 until the required training programs have been completed.

16 **8.6 PROCEDURES TO PREVENT HAZARDS**

17 As required under 40 CFR 265.14 and WAC 173-303-310, the closure plan will describe procedures to
18 prevent hazards from occurring at the closed unit. This section describes procedures to be used for ensuring
19 proper security at the site including surveillance measures.

20 **8.6.1 Security**

21 Security will be maintained through routine surveillance, and physical barriers that will remain in effect
22 during the period of postclosure care required for modified closure.

23 **8.6.1.1 24-Hour Surveillance System.** The 300 APT unit is located within the 300 Area of the Hanford
24 Site. The 300 Area will remain an industrial, operational area of the Hanford Site for the foreseeable future.
25 Operational areas will be under 24-hour surveillance by Hanford Patrol protective force personnel.

26 **8.7 CLOSURE CONTACT**

27 The following office will be the official contact for the 300 APT during the postclosure care period:

28 Office of Environmental Assurance,
29 Permits, and Policy
30 U.S. Department of Energy
31 Richland Operations Office
32 P.O. Box 550
33 Richland, Washington 99352
34

1 **8.8 CERTIFICATION OF MODIFIED CLOSURE CARE COMPLETION AND FINAL CLOSURE**

2 The sole source of regulatory direction for modified closure is Section II, K of the Hanford Facility Dangerous
3 Waste Permit. The permit describes this period as a postclosure period. Completion of the postclosure
4 period will end the period of modified closure and will allow final closure with regulator concurrence.

5 No later than 60 days after completion of the modified postclosure care period, the DOE-RL will submit to
6 Ecology a certification of completion of postclosure care. This certification, stating that postclosure care for
7 the unit was performed in accordance with the approved postclosure plan, will be signed by both the DOE-RL
8 and an independent registered professional engineer. The certification will be submitted by registered mail or
9 an equivalent delivery service. Documentation supporting the independent registered professional engineer's
10 certification will be supplied upon request of the regulatory authority. The DOE-RL and the independent
11 professional engineer will certify with a document similar to Figure 7-4.
12
13

Table 8-1. Inspection Schedule for the 300 Area Process Trenches.

Inspection item	Inspection frequency
Security control devices: well caps, and locks	Quarterly
Well condition	Semiannually
Subsurface well condition	3 to 5 years

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