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EDMC # 0035809 (Volume 3 of 3)

SECTION 2 OF 2

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ATTACHMENT 15

BURLINGTON ENVIRONMENTAL, INC. (WASHOUGAL FACILITY) PERMIT

9427.165

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ADDENDUM TO THE
PERMIT
FOR THE STORAGE AND TREATMENT
OF DANGEROUS WASTE

ISSUED TO: Burlington Environmental, Inc. (Washougal Facility)
Waterfront Place One
1011 Western Avenue, Suite 700
Seattle, Washington 98104
EPA Identification No. WAD 092300250

Pursuant to the Stipulation of final Settlement and Agreed Order of Dismissal of an appeal before the Washington State Pollution Control Hearings Board (PCHB NO. 92-191 BURLINGTON ENVIRONMENTAL, INC. v. DOE) the following portions of the Dangerous Waste Storage permit, originally issued to the Burlington Environmental Washougal facility on September 18, 1992, shall read as reflected on the following pages of this Addendum:

Permit Conditions II.A.6., II.A.22., II.C.2., III.B.3., III.B.6., III.B.11., III.B.17., IV.B.4., IV.D.7., V.D.1., V.D.10., V.E.2., V.H.3., V.I.1., and V.I.2. and Appendix C-3 of Attachment CC (The Quality Assurance Program Plan)

Permit Condition V.J.1. and Appendix D-14 of Attachment JJ are deleted.

This Addendum to the Permit is effective seven (7) calendar days after the date of entry of the Final Settlement of PCHB NO. 92-191 by the PCHB and shall remain in effect until October 22, 2002 unless revoked and reissued under WAC 173-303-830(3), terminated under WAC 173-303-830(5), or continued under WAC 173-303-806(7).

ISSUED BY: WASHINGTON DEPARTMENT OF ECOLOGY

Thomas Eaton

Thomas Eaton, Program Manager
Hazardous Waste and Toxics Reduction
Department of Ecology

Date 10/13/93

II.A.6. Each regulated generator waste stream which is received by the Permittee more than twice a year shall undergo annual full characterization. Full characterization is defined as completing a waste profile sheet which shall identify the dangerous constituents and characteristics necessary for proper designation and management of the waste stream, along with accounting for 100% of the material (e.g., 30% oil, 70% water).

a. Except as specified in c. below, full characterization shall include or consist of:

i. Existing published or documented data on the dangerous waste or on waste generated from similar processes. The use of existing published or documented data shall include confirmation by the generator that the process generating the dangerous waste has not significantly changed; or

ii. Laboratory analysis of the waste stream consisting of chemical, physical, and/or biological analyses using methods which are approved by the Agency or Department. Wastes shall be analyzed for all hazardous constituents except those which can be demonstrated not to be present in any of that generator's waste streams, or those which do not change the proper designation and management of the waste stream.

b. Analysis for the purposes of a.ii. above shall be performed by a laboratory which meets one of the following standards:

i. The laboratory is accredited by Washington State under Chapter 173-50 WAC; or

ii. The laboratory meets the standards of the Quality Assurance Program Plan, Appendix C-3 of Attachment CC. Such a laboratory shall be audited by the Permittee every two years or whenever analyses for the purposes of waste full characterization are performed, whichever is longer.

A. If the Department determines that any laboratory utilized by the Permittee does not meet the requirements of the Quality Assurance Program Plan, the Department may issue a final decision requiring a new audit of that laboratory. The issuance of such a decision shall constitute an Agency action subject to the rights of appeal under Chapter 34.05 RCW.

B. Except for frequency, audits of laboratories by the Permittee shall be performed as specified in the Quality Assurance Program Plan.

c. In the following circumstances a waste stream shall undergo full characterization consisting solely of laboratory analyses meeting the requirements of II.A.6.a.ii. above, and knowledge as necessary to designate a waste under WAC 173-303-080, Dangerous Waste Lists. Such characterization shall occur prior to receipt of the next shipment of that waste stream.

i. The permittee has been notified, or has reason to believe, that the process or operation generating the dangerous waste has significantly changed;

ii. There is a discrepancy between a generator's waste designation, as provided by the generator's waste profile and the Permittee's waste designation, as determined by the screening analysis and any further waste analysis;

iii. The first time a waste undergoes full characterization. This shall include but not be limited to all waste streams for which waste profiles are amended, such as pursuant to Permit Condition II.A.18.a.i.; and

iv. No more than five years from the last full characterization by laboratory analysis.

d. The following wastes are exempted from the requirement of b. above, periodic full characterization by laboratory analysis only:

i. Laboratory chemicals packaged in accordance with 40 CFR 264.316 and/or WAC 173-303-161 as applicable;

ii. Empty product containers as defined in 40 CFR 261.7 and/or WAC 173-303-160 as applicable;

iii. Unused commercial products in the original product container(s) (i.e., off-specification or outdated materials);

iv. Residue and debris from the clean up of spills or releases of:

A. A single known substance;

B. A commercial product; or

C. Other material for which a MSDS or waste profile can be provided;

v. Waste containing asbestos;

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vi. Equipment removed from service (i.e., ballasts, batteries, cathode ray tubes, fluorescent light bulbs, hydraulic equipment, switches, transformers, and electrical equipment) that contains dangerous waste which can be adequately identified for proper designation and management;

vii. Debris from the demolition and/or dismantling of equipment from known processes and which is contaminated with dangerous waste which can be adequately identified for proper designation and management;

viii. Confirmed non-infectious waste streams (such as xylene, acetone, ethyl alcohol, or isopropyl alcohol) from medical laboratory tissue preparation and slide staining and fixing processes.

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II.A.22. [Note: This Permit Condition is a requirement necessary to demonstrate a net increase in protection under Washington's Hazardous Waste Siting Criteria and is also found as Permit Condition V.E.2.] The management and storage of dangerous wastes in containers from exempted or excluded generators, including household hazardous wastes, shall at a minimum include:

a. Assuring smaller containers of incompatible wastes are not stored within the same larger outer containers;

b. Adherence to container tracking procedures in Attachment CC;

c. Adherence to inspection schedules and repair or corrective action requirements in Attachment EE; and

d. Container management in accordance with Permit Condition III.B.11.

e. Adherence to the Moderate Risk Waste Fixed Facility Guidelines, Department publication No. 92-13.

II.C.2. Operating Record: The Permittee shall maintain a written operating record at the facility, consisting of records kept for the length of time specified below. The record can be a compilation of various documents. The Permittee shall also record all information referenced in this Permit in the operating record within 48 hours of the information becoming available. The operating record shall include, but not be limited to, the information listed below.

a. The following records shall be maintained until closure and corrective action are complete and certified:

i. A current map showing the location of dangerous waste management units and non-regulated units within the facility;

ii. A map showing all locations of past dangerous waste management units if different from present locations;

iii. Assessment reports pursuant to Permit Condition V.D.8. and WAC 173-303-360(2)(k), of all incidents that require implementation of the contingency plan;

iv. Record of spills and releases;

v. Written reports and records of verbal notification to the Director and the Administrator to address releases, fires, and explosions;

vi. Summaries of all records of corrective action;

vii. All other environmental permits;

viii. Corrective action deed notification;

ix. Records and results of waste analyses required by WAC 173-303-300, pursuant to WAC 173-303-380(1)(c), which shall include at a minimum;

A. The date(s), exact place, and times of sampling or measurements;

B. The name of the individual(s) who performed the sampling or measurements;

C. The date(s) analyses were performed, demonstrating that EPA SW-846 holding times were satisfied;

D. The name of the individual(s) who performed the analyses:

E. The analytical techniques or method used

F. The analytical results;

G. The QA/QC summary; and

H. The type and model # of the equipment used for analysis.

x. Training records of current facility personnel;

xi. Certifications pursuant to 40 CFR 264.73(b)(9), Annual Waste Reduction Plan; and

xii. Facility construction records pursuant to Permit Condition V.C.5.

b. The following records shall be maintained for a minimum of 5 years. This time period may be extended by the Department or Agency in the event of enforcement action or notification by the Department or Agency that an investigation is ongoing. In the case of notification of investigation, the Permittee will not be required to keep the records longer than one (1) year past the normal time frame unless an enforcement action is issued:

i. Facility operation and maintenance records and reports prepared pursuant to this Permit;

ii. Date(s) and method(s) of treatment used per waste process operation including name(s) of personnel performing actual operation;

iii. Progress reports and any required notifications prepared pursuant to this Permit;

iv. The notice and certification required by a generator under 40 CFR 268.7. (Land Disposal Restrictions);

v. Records of all inspection and monitoring information, including requirements of WAC 173-303-320(2)(d) and 395(1)(d) and including calibration and maintenance records which shall include at a minimum:

A. The date and time of data recording;

B. The name of the person taking and recording the information; and

C. The recorded information itself whether consisting of observation, data measurement, instrument reading or any other monitoring method.

vi. Records required by 40 CFR 264.1035(c)(3) through (c)(8) and 40 CFR 264.1064(d) and (e) for compliance with the Organic Air Emissions Standards for Process Vents and Equipment Leaks, 40 CFR Part 264 Subparts AA and BB; and

vii. Annual reports submitted in compliance with WAC 173-303-220(1), Generator Report - Form 4, unless the reports are necessary to supplement the facility operating record, in which case they must be retained until facility closure and corrective action are complete and certified.

viii. Records of laboratory audits pursuant to the Quality Assurance Program Plan, Appendix C-3 of Attachment CC, and Permit Condition II.A.6.b.ii.

c. The following records shall be maintained for a minimum of 3 years. This time period may be extended by the Department or Agency in the event of enforcement action or notification by the Department or Agency that an investigation is ongoing. In the case of notification of investigation, the Permittee will not be required to keep the records longer than one (1) year past the normal time frame unless an enforcement action is issued:

i. Annual reports submitted in compliance with WAC 173-303-390(2), TSD Facility Report - Form 5, unless the reports are necessary to supplement the facility operating record, in which case they must be retained until facility closure and corrective action are complete and certified;

ii. Manifests and any required unmanifested shipment or exception reports; and

iii. Training records of former facility personnel;

d. Current copies of the following documents as amended, revised, and modified shall be maintained at the facility until closure and corrective action are complete and certified:

i. Contingency Plan;

ii. Training Plan;

iii. Waste Analysis Plan;

iv. Documentation of arrangements made with local authorities pursuant to WAC 173-303-340;

v. All closure, interim measures and final corrective action cost estimates, financial assurance documents prepared pursuant to this Permit, as well as the company names and addresses of facility insurers;

vi. Closure Plan;

vii. For all new and converted "new" tank systems, pursuant to WAC 173-303-640(3) and 40 CFR 264.192:

A. An assessment, by an independent, registered professional engineer or independent qualified tank installation inspector not affiliated with the tank vendor, certified by an independent, registered professional engineer, that the tank system was installed properly and that all discrepancies have been repaired;

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B. Results of tightness testing and integrity assessments; and

C. For all tanks which require corrosion protection, a written statement from a corrosion expert that attests to the proper design and installation of any corrosion protection measures.

viii. The results of periodic tightness testing and integrity assessments of all tank systems; and

ix. Documentation and information as required by 40 CFR Parts 264 Subparts AA and BB, Air Emission Standards for Process Vents and Equipment Leaks, except as noted in Permit Condition II.C.2.b.vi. This shall include but not be limited to;

A. The location of all affected units and the identification of all process vents;

B. Current data estimates on annual throughput and emission rates for affected vents;

C. Inspection schedules and recordkeeping procedures;

D. Description of procedures, structures, or equipment used at the facility to prevent releases to the atmosphere from process vents;

E. Monitoring and maintenance procedures; and

F. A list of information sources used in preparing the records.

x. Written container sampling procedures, pursuant to Permit Condition II.A.12.a.

III.B.3. In addition to the requirements of WAC 173-303-630(7), all container storage areas shall have secondary containment capacity sufficient to contain 20 minutes of fire flow water pursuant to Article 79.115 of the Uniform Fire Code (1991 Edition). Containment capacity for this purpose may include the use of the an overflow collection area. If the Permittee chooses to use an overflow collection area the Permittee shall, at a minimum:

a. Assure that the entire collection area is paved and that the paving is maintained in good repair with no evident cracks;

b. Provide a berm around the perimeter of the containment area. The bermed area shall provide for containment at least a 25-year 24-hour storm event plus

the additional volume of fire control water from the building with the greatest amount of overflow; and

c. Submit to the Department within two (2) weeks of the effective date of this permit condition revisions to the facility description (Attachment AA) and the contingency plan (Attachment GG). The Department shall have four (4) weeks from the date the revisions are received to either accept or deny the proposal. Failure to respond within four weeks shall constitute acceptance.

i. Revisions to the facility description (Attachment AA) shall clearly identify the location, containment volume, and materials of construction of the overflow collection area.

ii. Revisions to the contingency plan (Attachment GG) shall specify how the Permittee will manage fire control water which is collected in the overflow area.

III.B.6. Segregation and separation of containers of dangerous waste in loading/unloading pads and staging areas shall be as required for containers in vehicles as specified in 49 CFR 177.848.

III.B.11. Containers of dangerous waste or household hazardous waste shall only be placed or stored within the facility as follows:

a. Containers of dangerous waste shall not be placed or stored anywhere other than defined storage areas, process areas within secondary containment, or loading/unloading pads. Containers of dangerous waste shall not be placed in areas other than defined container storage areas for more than 24 hours.

b. Containers of household hazardous waste shall not be placed or stored anywhere other than the following areas:

i. Defined storage areas;

ii. A household hazardous waste storage unit meeting the requirements of d. below;

iii. Loading/unloading pads; or

iv. Process areas within secondary containment.

c. Containers of household hazardous waste shall not be placed in areas other than those defined in b.i. and b.ii. above for more than 24 hours.

d. Upon approval by the Departme e Permi may construct a household hazardous waste storage unit. Su unit mu be consistent with all relevant standards for a Moderate Risk Waste (MRW) Fixed Facility as found in the Department's MRW Fixed Facility Guidelines.

i. The household hazardous waste storage unit must be constructed of concrete with integral waterstops in all co struction joints. The unit must provide a minimum of 1% slope for drainage to a sump or sumps.

ii. The household hazardous waste storage unit must provide for containment of 10% of the waste stored in the unit in addition to the volume from a 25-year 24-hour storm event.

iii. If the Permittee chooses to construct a household hazardous waste storage unit the Permittee shall submit design plans and operational information to the Department. The Department shall have eight (8) weeks from the date the ans are received to either accept or deny the proposal. Failure to resp nd within eight weeks shall constitute acceptance. Design plans and operational information shall include, at a minimum, the following:

A. The exact location and dimensions of the unit;

B. Pad berm and sump construction details specifying floor and berm elevations and the location of all sumps;

C. Container stacking plans which provide for a minimum of 30 inch aisle space;

D. Procedures and schedules for inspection of the unit; and

E. A description of sump operation and management procedures. The management of spills and stormwater in the unit must be described;

III.B.17. Pursuant to WAC 173-303-630(7)(a)(i) all container secondary containment systems shall be provided with an interior coating or lining that will render the containment sufficiently impervious to contain leaks, spills, and accumulated rainfall.

a. The coating or lining must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present.

b. The coating or lining must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such

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that degradation or physical damage to the coating or lining can be identified and remedied before wastes could migrate from the system.

c. The coating or lining must be compatible with the waste stored in the containment system as specified in Attachment JJ.

IV.B.4. The Permittee shall fulfill all requirements and conditions specified by the most recent structural and corrosion integrity assessments for each tank, including, but not limited to, addressing all certification limitations, areas of concern and other comments of the certifying engineer. Action shall be taken in the time specified on the integrity assessments. Documentation of such activities shall be maintained in the facility operating record for five (5) years pursuant to Permit Condition II.C.2.b.i.

IV.D.7. All on ground tanks in the Permitted Dangerous Waste Tank System shall have undertank leak detection that meets the recommendations of API Standard 650, Item #650-281. Within 60 days of the Permit effective date the Permittee shall submit revised design drawings which demonstrate compliance with this standard. The Department will have 60 days from the date the design drawings are received to either accept or deny the demonstration. Failure to respond within 60 days will constitute acceptance.

V.D.1. The Permittee shall not operate the facility in exceedence of approved Interim Status tank storage and treatment capacity prior to the completion of all items specified in Permit Condition V.C.1. and all Proposed Tank System and Facility Wide requirements specified in Permit Condition V.C.2. Approved Interim Status container storage capacity shall not be exceeded prior to completion of all Building 2 and 3, Building 4, and Loading/Unloading Pad requirements in Permit Condition V.C.2.

V.D.10. The sumps and secondary containment structures of the Process Containment Building, including the small quantity treatment area, shall be inspected in a manner and schedule equivalent to that for container or tank storage areas as specified in Attachment EE. Equipment within the Process Containment Building shall be inspected as specified in Table F2-5 of Attachment EE.

V.E.2. [Note: This Permit Condition is also found as Permit Condition II.A.22.] The management and storage of dangerous wastes in containers from exempted or excluded generators, including household hazardous wastes, shall at a minimum include:

a. Assuring smaller containers of incompatible wastes are not stored within the same larger outer containers;

b. Adherence to container tracking procedures in Attachment CC;

c. Adherence to inspection schedules and repair or corrective action requirements in Attachment EE; and

d. Container management in accordance with Permit Condition III.B.11.

e. Adherence to the Moderate Risk Waste Fixed Facility Guidelines, Department publication No. 92-13.

V.H.3. Vehicles which are used for the transport of dangerous waste to or from the facility and which contain dangerous waste which contains free liquids, shall be parked only in designated loading/unloading zones. If the dangerous waste in the transport vehicle contains no free liquids, the vehicle shall be parked on pavement out of the traffic patterns for dangerous waste transport vehicles, as shown in Figure B4-2 of Attachment AA. There shall be no more than two (2) vehicles in any one loading/unloading zone at any one time. These limits may be exceeded in the event of emergency situations such as spill response.

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V.I.1. The Permittee shall not receive waste into the Existing Tank System (as defined in Attachment AA) after completion of all Proposed Tank System construction activities specified in Permit Condition V.C.2.

V.I.2. Subsequent to the receipt of the known final volume of waste into the Existing Tank System (as defined in Attachment AA) the Permittee shall close the Existing Tank System and all loading/unloading pads no longer used for dangerous waste management.

a. Closure of these areas shall be conducted in accordance with a closure plan approved by the Department. The Permittee shall submit to the Department a closure plan for these areas within 60 days of the Permit-effective date or at least 180 days prior to the date on which the Permittee expects to begin closure (as defined in c.i. below) whichever is sooner.

b. Closure of these areas shall meet all of the closure standards of Section II.D. of this Permit for all structures and environmental media.

c. Pursuant to WAC 173-303-400 and 40 CFR 265.112 and 265.113, the following closure activities shall be completed within the specified times.

i. The Permittee shall notify the Department at least 45 days prior to the date on which he expects to begin closure. The date when he expects to begin closure shall be no later than 30 days after the date on which the Existing Tank System receives the known final volume of dangerous wastes.

ii. The Permittee shall treat or remove all dangerous wastes in accordance with the approved closure plan within ninety days after receiving the final volume of dangerous wastes.

iii. The Permittee shall complete closure activities in accordance with the approved closure plan within 180 days after receiving the final volume of dangerous wastes.

V.J.1. [This Permit Condition is deleted.]

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ADDENDUM TO THE
PERMIT
FOR THE STORAGE AND TREATMENT
OF DANGEROUS WASTE

ISSUED TO: Burlington Environmental, Inc. (Washougal Facility)
1011 Western Avenue, Suite 700
Seattle, Washington 98104
EPA Identification No. WAD 092300250

Pursuant to the Stipulation of Partial Settlement of an appeal before the Washington State Pollution Control Hearings Board (PCHB NO. 92-191 BURLINGTON ENVIRONMENTAL, INC. v. DOE) and pursuant to the final Settlement Agreement of an appeal to the United States Environmental Protection Agency Environmental Appeals Board (RCRA Appeal No. 92-33) the Final RCRA Part B Permit issued to Burlington Environmental Inc. for their Washougal facility is hereby revised. As agreed to in the Stipulation of Partial Settlement for PCHB NO. 92-191 and the Settlement Agreement of the Federal Appeal, the following portions of the permit as originally issued September 18, 1992 shall read as reflected on the attached pages:

Permit Conditions I.C.3., I.E.9. and VII.D.4.

Permit Conditions II.G.2. and II.G.3. are deleted.

This Addendum to the Permit is effective seven (7) calendar days after the date of entry of the Partial Settlement of PCHB NO. 92-191 by the PCHB or thirty (30) days from notice of final permit decision by the Environmental Protection Agency pursuant to 40 CFR §124.15, whichever is later, and shall remain in effect until September 18, 2002 unless revoked and reissued under WAC 173-303-830(3) or 40 CFR 270.41, terminated under WAC 173-303-830(5) or 40 CFR 270.43, or continued under WAC 173-303-806(7) or 40 CFR 270.51.

Permit Conditions I.C.3. and VII.D.4. are issued under joint Federal and State authority. Permit Conditions II.G.2. and II.G.3. are deleted solely under Federal authority. Permit Conditions I.E.9. is issued solely under State authority.

ISSUED BY: WASHINGTON DEPARTMENT OF ECOLOGY and
U.S. ENVIRONMENTAL PROTECTION AGENCY - REGION 10

Gerald Lenssen
Gerald Lenssen, Supervisor
Hazardous Waste Permits
Department of Ecology

Date April 8, 1993

Randall F. Smith
Randall F. Smith, Director
Hazardous Waste Division
Environmental Protection
Agency - Region 10

3/17/93

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I.C.3. Permit modification at the req c of the Permittee shall be performed in accordance with the three tiered modification procedures f WAC 173-303-830(4) and/or 40 CFR 270.42, as appropriat.

I.E.9. The Permittee may not commence treatment or storage of dangerous waste in any new or modified portion of the facility until the Permittee has submitted to the Department, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and

a. The Department has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the Permit; or

b. The Department has either waived the inspection or has not within 15 days of submission of the letter specified above notified the Permittee of an intent to inspect. Should the Department notify the Permittee of an intent to inspect, the Department shall perform that inspection within 30 days of notification. Failure to inspect within 30 days of notification will constitute a waiver of the inspection and the Permittee may commence treatment or storage in the new or modified portion of the facility.

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II.G.2. This Permit Condition is Deleted

II.G.3. This Permit Condition is Deleted

VII.D.4. During operation of the Interim Measure groundwater corrective action system the Permittee shall submit Annual Reports to the Agencies. These Reports shall commence on a date established in the approved Implementation Plan, and shall be submitted until which time as Interim Measures are judged by the Agencies to be no longer needed, or that time when Interim Measures become subsumed by implementation of long-term Corrective Measures. Based upon information contained in the Reports, the Agencies may direct the Permittee to take appropriate action. The Annual Reports shall at a minimum include:

a. Calculations and contour maps showing the rate and direction of groundwater flow in aquifer systems underlying the facility;

b. Any recommendations for changes to the system, based upon an evaluation of the system's effectiveness in meeting Interim Measure goals and objectives; and,

c. Commencing five years after the effective date of this permit, and every five years thereafter, the results of an analysis of at least one groundwater sample for all 40 CFR Part 264 Appendix IX constituents. Such an analysis shall be performed to ensure that all hazardous constituents of concern in the groundwater are identified.

If the Permittee finds Appendix IX constituents in the groundwater that are not already identified in the permit as monitoring constituents, the Permittee must, within thirty (30) days of receipt of the analyses, submit:

1. A permit modification request to add the newly detected constituent(s) to the list of monitoring constituents; or,

2. A report justifying why the detected constituent(s) should not be included in the monitoring program. If the Agencies do not accept the Permittee's justification, the Agencies may initiate a permit modification pursuant to WAC 173-303-830(3) and/or 40 CFR 270.41 to add the detected constituent(s) to the monitoring list; or,

3. A notice that the Permittee has resampled and is repeating the analysis for the newly detected constituent(s). Within thirty (30) days of receipt of the results of the second analysis, the Permittee shall submit the results of the second analysis and either a permit modification request (pursuant to permit condition VII.D.4.c.1) or a report justifying why the detected constituent(s) should not be included in the monitoring program (pursuant to permit condition VII.D.4.c.2).

Any wells chosen for sampling shall be proposed initially in the Interim Measure Implementation Plan, and are subject to the Agencies' approval. The Agencies may at this time request more than one well sample, depending on the possibility of multiple aquifer contamination, multiple plumes, or other current, site-specific factors. If, based on new

information, the Permittee later concludes that different wells are more appropriate for these [illegible]poses, new [illegible]lls must be proposed in a Progress [illegible]ort prior [illegible]he annual sampling. Again, selection [illegible] any new Ap[illegible]dix IX wells are subject to the Agencies' approval. This selection shall not require a permit modification.

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September 18, 1992

PERMIT
FOR THE STORAGE AND TREATMENT
OF DANGEROUS WASTE

Department of Ecology
PO Box 47600
Olympia, Washington 98504-7600
Telephone: (206) 459-6000

U.S. Environmental Protection
Agency, Region 10
1200 Sixth Avenue, HW-112
Seattle, Washington 98101
Telephone: (206) 553-5810

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Issued in accordance with the applicable provisions of the Hazardous Waste Management Act, Chapter 70.105 RCW, and the regulations promulgated thereunder in Chapter 173-303 WAC and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and the regulations promulgated thereunder in Title 40 of the Code of Federal Regulations.

ISSUED TO: Burlington Environmental, Inc.
(Washougal Facility)
2203 Airport Way So., Suite 400
Seattle, Washington 98134
Telephone: (206) 223 0500

This Permit is effective as of October 23, 1992 and shall remain in effect until October 23, 2002 unless revoked and reissued, modified, or terminated under WAC 173-303-830(3) and (5) or continued in accordance with WAC 173-303-806(7).

ISSUED BY: WASHINGTON Department OF ECOLOGY and
U.S. ENVIRONMENTAL PROTECTION AGENCY - REGION 10

Cindy J. Gilder, Section Head
Hazardous Waste Permits
Department of Ecology

Date 9.11.92

for Randall F. Smith, Director
Hazardous Waste Division
Environmental Protection Agency

9-17-92

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INTRODUCTION

PERMITTEE: BURLINGTON ENVIRONMENTAL, INC.
EPA/STATE IDENTIFICATION NUMBER: WAD092300250

Pursuant to:

Chapter 70.105 RCW, the Hazardous Waste Management Act of 1976, as amended, and regulations codified in Washington Administrative Code (WAC) 173-303,

Solid Waste Disposal Act (42 U.S.C. 3251 et seq.) as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA) and,

Regulations promulgated by the U.S. Environmental Protection Agency (EPA) codified in Title 40 of the Code of Federal Regulation (40 CFR),

a Permit is issued to Burlington Environmental, Inc. (hereinafter called the Permittee), to operate a dangerous waste storage and treatment facility located at 625 South 32nd Street, Washougal, Washington at latitude 45 degrees 33 minutes 03 seconds North and longitude 122 degrees 20 minutes 00 seconds West.

The Permittee shall comply with all terms and conditions set forth in this Permit and in Attachments AA through UU. When the Permit and the above attachments conflict, the wording of the Permit shall prevail. The Permittee shall also comply with all applicable state regulations, including Chapter 173-303 WAC (Attachment LL) and as specified in the Permit. Additionally, the Permittee shall comply with all applicable federal regulations, including 40 CFR Parts 260 through 266, Part 268, and Part 270.

Applicable state and federal regulations are those which are in effect on the date of final administrative action on this Permit and any self implementing statutory provisions and related regulations which, according to the requirements of RCRA (as amended), or state law, are automatically applicable to the Permittee's dangerous waste management activities, notwithstanding the conditions of this Permit.

This Permit is based upon the administrative record, as required by WAC 173-303-840 and 40 CFR 124.9. The Permittee's failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time, shall be grounds for the termination or modification of this Permit and/or initiation of an enforcement action, including criminal proceedings. The Permittee shall inform the Director and the Administrator of any deviations from permit conditions or changes from information provided in the Part B permit application. In particular, the Permittee shall inform the Director and the Administrator of any proposed changes that might affect the ability of the Permittee to comply with applicable regulations and permit conditions, or which alter any of the conditions of the Permit in any way.

The Department shall enforce all conditions of this Permit for which the State of Washington is authorized and all conditions which are designated in this Permit as state requirements only. Any challenges of any permit condition that concern state requirements, (i.e., conditions of this Permit for which the State of Washington received final authorization or conditions which are designated in the Permit as state requirements only) shall be appealed to the Department in accordance with WAC 173-303-845. In the event that the Department does not maintain final authorization, the Agency will enforce all permit conditions except those which are state-only requirements.

The Agency shall enforce all permit conditions which are based on federal regulation promulgated under HSWA, but have not yet been adopted by the State of Washington and have not been included in the state's authorized program. In such capacity, the Agency shall enforce any permit condition based on state requirements if, in the Agency's judgement, the Department should fail to enforce that permit condition, except that in no case shall the Agency enforce any permit condition designated as a state requirement only.

In the event that the State of Washington receives authorization from EPA to implement additional regulations promulgated under RCRA, as amended, the Department shall assume enforcement responsibility for existing permit conditions that are based on these requirements.

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LIST OF ATTACHMENTS

The following listed documents are hereby incorporated, in their entirety, by reference into this Permit. Some of the documents are excerpts from the Permittee's Dangerous Waste Permit Application (most recently amended July, 1992). The Department and the Agency have, as deemed necessary, modified specific language in the attachments. These modifications are described in the permit conditions (Parts I through VII), and thereby supersede the language of the attachment. These incorporated attachments are enforceable conditions of this Permit, as modified by the specific permit condition.

Attachment AA	Facility Description and General Provisions (Section B and Appendix B-1 of the Permit Application)
Attachment BB	Part A Dangerous Waste Permit Application (Section A of the Permit Application)
Attachment CC	Waste Characterization and Waste Analysis Plan (Sections C1.0 through C.2.8.2, inclusive, and Appendices C-1 through C-4, inclusive, of the Permit Application)
Attachment DD	Security Procedures and Equipment (Sections F1.0 through F1.2, inclusive, of the Permit Application)
Attachment EE	Inspection Schedule (Sections F2.0 through F2.2.3, inclusive, and Appendices F-1 through F-7, inclusive, of the Permit Application)
Attachment FF	Personnel Training Plan (Section H and Appendix H-1 of the Permit Application)
Attachment GG	Contingency Plan (Section G and Appendices G-1 through G-3, inclusive, of the Permit Application)
Attachment HH	Closure Plan (Section I and Appendices I-3 through I-6, inclusive, of the Permit Application)
Attachment II	Container Storage Plans and Specifications (Sections D1.0 through D1.5, inclusive, and Appendix D-1, D-2, D-4, D-8, and D-10 through D-12, inclusive, of the Permit Application)

L. OF ATTACHMENTS (CONTINUED)

Attachment J	Dangerous Waste Tanks (Sections D2.0 through D2.8.2, inclusive, and Appendices D-2, D-5 through D-12, inclusive, and D-14 of the Permit Application)
Attachment KK	Preparedness and Prevention Measures (Sections F3.0 through F5.2, inclusive, of the Permit Application)
Attachment LL	Chapter 173-303 WAC (April 1991)
Attachment MM	Letter of October 23, 1991 to Cindy Gilder (Department of Ecology) from Catherine Buller (Burlington Environmental), as amended by the Department.
Attachment NN	Air Emission Monitoring Program for Process Vents and Equipment Leaks
Attachment PP	RFI Phase 2 Requirements
Attachment QQ	Well Construction, Maintenance, and Replacement
Attachment RR	CMS Process
Attachment SS	Schedule for Completion of RFI and CMS
Attachment TT	Schedule for Completion of Interim Measures
Attachment UU	Interim Measure Groundwater Monitoring
Attachment VV	Demonstration for Washougal Facility Part B Closure Analyses

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DEFINITIONS

For purposes of this joint Permit, the following definitions shall apply:

a. The term "**Permit**" shall mean the joint Permit issued by the Washington State Department of Ecology, pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC, and by the Environmental Protection Agency, Region 10, pursuant to 42 U.S.C. 3251 et seq. and 40 CFR Parts 124 and 270.

b. The term "**Director**" shall mean the Director of the Washington State Department of Ecology or a designated representative. The Section Head (with the address as specified on page one of this Permit) is a duly authorized and designated representative of the Director for purposes of this Permit.

c. The term "**Administrator**" shall mean the Administrator of the U.S. Environmental Protection Agency (EPA) or a designated representative. The Director, Hazardous Waste Division, EPA Region 10, (with the address as specified on page one of this Permit), is a duly authorized and designated representative of the Administrator for purposes of this Permit.

d. The term "**Department**" shall mean the Washington State Department of Ecology, (with the address as specified on page one of this Permit).

e. The term "**Agency**" shall mean the U.S. Environmental Protection Agency, Region 10, (with the address as specified on page one of this Permit).

f. The term "**Agencies**" shall mean the U.S. Environmental Protection Agency, Region 10, and the Washington State Department of Ecology.

g. The terms "**facility**" or "**site**" shall mean that identified in the physical description of the property (including structures, appurtenances, and improvements) used to manage dangerous waste. This property description is as set forth in Attachment AA of this Permit.

DEFINITIONS (CONTINUED)

h. The term "new tank system" is defined to mean tank systems which have never been used for dangerous waste management at this site before, existing tanks planned for conversion to manage regulated waste, existing tanks being relocated under this Permit, and tanks out of active service for more than 1 year which are proposed for regulated waste usage.

i. The term "solid waste management unit" shall mean any discernible unit at which solid waste has been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which hazardous waste or hazardous constituents (40 CFR Part 261, Appendix 8) have been routinely and systematically released.

j. The term "RCRA Facility Investigation" shall mean an investigation of releases of hazardous wastes and hazardous constituents from solid waste management units.

k. The term "release" shall mean any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

l. All definitions contained in 40 CFR Sections 124.2, 260.10, 270.2, 264.141, and WAC 173-303-040 are hereby incorporated, in their entirety, by reference into this Permit. Any of the definitions used above, (a) through (k), shall supersede any definition of the same term given in 40 CFR Sections 124.2, 260.10, 270.2, 264.141, and WAC 173-303-040. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

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PART I - STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

The Permittee is authorized to store and treat dangerous waste in accordance with the conditions of this Permit and in accordance with the applicable provisions of Chapter 173-303 WAC. Any storage or treatment of dangerous waste by the Permittee at this facility that is not authorized by this Permit, Chapter 173-303 WAC, or by 40 CFR 270.42(e) and for which a permit is required under Section 3005 of RCRA, is prohibited. Subject to 40 CFR 270.4, compliance with this Permit generally constitutes compliance, for the purposes of enforcement, with Subtitle C of RCRA. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege. Issuance of this Permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations.

I.B. GENERAL PERMIT CONDITIONS

I.B.1. The general permit conditions under WAC 173-303-810, final facility standards under WAC 173-303-600, and, when the Permittee is a generator, generator requirements under WAC 173-303-170, are incorporated by reference into this Permit and shall be adhered to by the Permittee.

I.B.2. The Permittee shall comply with all applicable requirements of 40 CFR 270.30(a)-(i), (j)(1), (j)(2), (k), (l)(1)-(l)(3), and (l)(5)-(l)(11).

I.B.3. The list of Attachments on Pages 5 and 6 are incorporated by reference into this Permit. Facility operations shall be in accordance to the contents of the Attachments and this Permit.

I.C. PERMIT ACTIONS

I.C.1. This Permit may be modified, revoked and reissued, or terminated for cause, as specified in WAC 173-303-830(3) and 40 CFR 270.41, 270.42, and 270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance of the part of the Permittee, does not stay the applicability or enforceability of any permit condition.

I.C.2. This Permit may be renewed as specified in WAC 173-303-810(3) and 40 CFR 270.30(b) and Permit Condition I.E.2. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

I.C.3. Permit modification at the request of the Permittee will be done according to the three tiered modification system, WAC 173-303-830(4), 40 CFR 270.42, and the preamble to the federal regulation (53FR37912, September 28, 1988). This includes any modification from design drawings to as-builts.

I.C.4. Within 45 days of completion of a permit modification, or a phase of a permit modification, the Permittee shall submit all revisions to the Permit and its Attachments resulting from that modification or phase of a modification.

I.D. SEVERABILITY

I.D.1. The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision which forms the basis for any condition of this Permit does not affect the validity of any other state or federal statutory or regulatory basis for said condition.

I.D.2. In the event that a condition of this Permit is stayed for any reason, the Permittee shall continue to comply with the related applicable and relevant interim status standards in WAC 173-303-400 until final resolution of the stayed condition unless the Director and the Administrator determine compliance with the related applicable and relevant interim status standards would be technologically incompatible with compliance with other conditions of this Permit which have not been stayed.

I.E. DUTIES AND REQUIREMENTS

I.E.1. The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency Permit. Any Permit noncompliance, other than noncompliance authorized by an emergency Permit, constitutes a violation of RCRA and is grounds for revocation and reissuance, or modification; or for denial of a Permit renewal application.

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I.E.2. If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a Permit at least 180 days prior to Permit expiration.

I.E.3. It shall not be defense for the Permittee, in an enforcement action that it would have been necessary, to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.

I.E.4. In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health or the environment.

I.E.5. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit.

I.E.6. The Permittee shall furnish to the Director or Administrator, within a reasonable time, any relevant information which the Director or Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or termination this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director or Administrator, upon request, copies of records required to be kept by this Permit.

I.E.7. Pursuant to WAC 173-303-810(10) and 40 CFR 270.30(i), the Permittee shall allow the Director or Administrator, or authorized representatives, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

d. Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.E 8. The Permittee shall give advance notice to the Director or Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements.

I.E.9. The Permittee may not commence treatment or storage of dangerous waste in any new or modified portion of the facility until the Permittee has submitted to the Department or the Agency, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and

a. The Department or Agency has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the Permit; or

b. The Department or Agency has either waived the inspection or has not within 15 days notified the Permittee of an intent to inspect.

I.E.10. Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Director or Administrator, the Permittee shall promptly submit such facts or information.

I.F. MONITORING AND RECORDS

I.F.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from WAC 173-303-110 or Appendix I of 40 CFR Part 261 or an equivalent method approved by the Director or Administrator. Laboratory methods must be those specified in WAC 173-303-110(3)(a) or an equivalent method as specified in Attachment CC.

I.F.2. Pursuant to WAC 173-303-810(11) and 40 CFR 270.30(j)(3), records of monitoring information shall specify:

a. The dates, exact place, and times of sampling or measurements;

b. The individuals who performed the sampling or measurements;

c. The dates analyses were performed;

d. The individuals who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

I.G. COMPLIANCE NOT CONSTITUTING DEFENSE

Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3007, 3008, 3013, or 7003 of RCRA (42 U.S.C. Sections 6927, 6928, 6934 and 6973), Section 104 or 107, and 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA) as amended, or any other federal or state law governing protection of public health or the environment.

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I.H. TRANSFER OF PERMITS

This Permit is not transferable to any person, except after notice to the Director and Administrator. In such instances, the Director and Administrator will require modification or revocation and reissuance of the Permit pursuant to WAC 173-303-830(2) and 40 CFR 270.40. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270 and this Permit.

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I.I. PERMIT EXPIRATION AND CONTINUATION

This Permit and all conditions herein will remain in effect beyond the Permit's expiration date until final Permit determination if the Permittee has submitted a timely, complete application (under 40 CFR Section 270 Subpart B for HSWA provisions and WAC 173-303-806), and, through no fault of the Permittee, the Director or the Administrator have not made a final Permit determination, through their respective authorities, as set forth in WAC 173-303-840 and 40 CFR Section 270.51 for HSWA provisions. This Permit may be modified or revoked and reissued as necessary, in accordance with 40 CFR 270.41 and WAC 173-303-830(3).

I.J. REPORTS, NOTIFICATIONS AND SUBMISSIONS

All reports, notifications or other submissions which are required by this Permit to be sent or given to the Director and the Administrator shall be sent certified mail or given to:

Supervisor, Hazardous Waste Section
Department of Ecology
Southwest Regional Office
7272 Cleanwater Lane
Olympia, Washington 98504-6811
Telephone: (206) 753-2353

Chief, Waste Management Branch
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, HW-12
Seattle, Washington 98101
Telephone: (206) 553-1253

These phone numbers and addresses may change.

I.K. CONFIDENTIAL INFORMATION

Any information submitted by the Permittee to the Director or Administrator may be claimed as confidential by the Permittee in accordance with applicable provisions of WAC 173-303-810(15) and 40 CFR Parts 260.2 and 270.12.

I.L. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

Current copies of the following documents, as amended, revised, and modified, shall be maintained at the facility. These documents shall be maintained until closure is complete and certified by an independent, registered professional engineer, unless a lesser time is specified in the Permit.

1. The Permit and all attachments;

2. The Part B Permit Application; and

3. The facility operating record.

I.M. WASTE MINIMIZATION

I.M.1. Waste Minimization Certification: In accordance with 40 CFR 264.73(b)(9), the Permittee shall place a certification in the operating record on an annual basis that:

a. A program is in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and,

b. The proposed method of treatment, storage or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.

I.M.2. Biennial Report: Pursuant to 40 CFR 264.75, the Permittee shall submit to the Regional Administrator, within one hundred and fifty (150) days of the effective date of the Permit and on March 1 of each even numbered year thereafter, a report documenting efforts to reduce the volume and toxicity of waste generated, including estimates of the reduction in volume or toxicity achieved since the previous report by the facility's waste minimization program certified in I.M.1.

PART II - GENERAL FACILITY CONDITIONS

II.A. GENERAL WASTE MANAGEMENT

II.A.1. The Permittee is authorized to receive from off-site regulated generators the wastes specified in Attachment BB. Wastes shall only be received from regulated generators with a valid State/EPA identification number, conditionally exempt small quantity generators, and legitimate household waste generators.

a. In specific emergency situations, the Permittee may accept dangerous wastes generated by regulated generators without a State/EPA identification number.

i. Emergency acceptance shall require prior written authorization, which may be via telecommunications (i.e. facsimile), from the Agency or the Department.

ii. If written authorization, pursuant to i. above, is not possible, and if delay of acceptance of such waste may result in potential harm to human health or the environment, the Permittee may accept the wastes without prior authorization. In such cases the Permittee shall notify the Agency or Department of the emergency situation within 24 hours of the arrival of the waste at the facility.

b. All wastes shall be managed only under the conditions of this Permit.

II.A.2. The Permittee shall inform the generator in writing that he has the appropriate permits for and will accept the dangerous waste the generator is shipping as required by WAC 173-303-290(3). The Permittee shall keep a copy of this written notice as part of the operating record until final closure of the facility is complete and certified.

II.A.3. The Permittee shall notify the Director in writing at least four weeks in advance of the date the Permittee expects to receive dangerous waste from a foreign source, as required by WAC 173-303-290(1) and 40 CFR 264.12(a). Notice of subsequent shipments of the same waste from the same foreign source in the same calendar year is not required.

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II.A.4. New test methods shall be used immediately upon the effective date of the Federal or State rules or laws that mandate the use of the test method.

II.A.5. Dangerous waste brought on-site cannot leave its respective unloading area until the manifest number, and facility container number for containerized waste, has been recorded on logging and tracking forms. Entry into the on-line computerized tracking system shall be done within 24 hours after manual entry of the information on forms.

II.A.6. Each regulated generator waste stream which is received by the Permittee more than twice a year shall undergo annual full characterization. Full characterization is defined as completing a waste profile sheet which shall identify the dangerous constituents and characteristics necessary for proper designation and management of the waste stream, along with accounting for 100% of the material (e.g., 30% oil, 70% water).

a. Except as specified in b. below, full characterization shall include or consist of:

i. Existing published or documented data on the dangerous waste or on waste generated from similar processes. The use of existing published or documented data shall include confirmation by the generator that the process generating the dangerous waste has not significantly changed; or

ii. Laboratory analysis of the waste stream consisting of chemical, physical, and/or biological analyses using methods which are approved by the Agency or Department. Analysis shall be performed by a laboratory accredited by Washington State under Chapter 173-50 WAC. Wastes shall be analyzed for all hazardous constituents except those which can be demonstrated not to be present in any of that generator's waste streams, or those which do not change the proper designation and management of the waste stream.

b. In the following circumstances a waste stream shall undergo full characterization consisting solely of laboratory analyses meeting the requirements of II.A.6.a.ii. above, and knowledge as necessary to designate a waste under WAC 173-303-080, Dangerous Waste Lists. Such characterization shall occur prior to receipt of the next shipment of that waste stream.

i. The permittee has been notified, or has reason to believe, that the process or operation generating the dangerous waste has significantly changed;

ii. There is a discrepancy between a generator's waste designation, as provided by the generator's waste profile and the Permittee's waste designation, as determined by the screening analysis and any further waste analysis;

iii. The first time a waste undergoes full characterization. This shall include but not be limited to all waste streams for which waste profiles are amended, such as pursuant to Permit Condition II.A.18.a.i.; and

iv. No more than five years from the last full characterization by laboratory analysis.

c. The following wastes are exempted from the requirement of b. above, periodic full characterization by laboratory analysis only:

i. Laboratory chemicals packaged in accordance with 40 CFR 264.316 and/or WAC 173-303-161 as applicable;

i. Empty product containers as defined in 40 CFR 261.7 and/or WAC 173-303-160 as applicable;

iii. Unused commercial products in the original product container(s) (i.e., off-specification or outdated materials);

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iv. Residue and debris from the clean up of spills or releases of:

A. A single known substance;

B. A commercial product; or

C. Other material for which a MSDS or waste profile can be provided;

v. Waste containing asbestos;

vi. Equipment removed from service (i.e., ballasts, batteries, cathode ray tubes, fluorescent light bulbs, hydraulic equipment, switches, transformers, and electrical equipment) that contains dangerous waste which can be adequately identified for proper designation and management;

vii. Debris from the demolition and/or dismantling of equipment from known processes and which is contaminated with dangerous waste which can be adequately identified for proper designation and management;

viii. Confirmed non-infectious waste streams (such as xylene, acetone, ethyl alcohol, or isopropyl alcohol) from medical laboratory tissue preparation and slide staining and fixing processes.

II.A.7. Dangerous wastes with values below 5,000 Btu/lb as generated, both received from off-site and generated on-site, shall not be incorporated into dangerous waste fuels. This requirement is consistent with the guidance regarding legitimate recycling of low-Btu wastes, as stated in the March 16, 1983 Federal Register (48FR11157) and subsequent federal updates.

a. Dangerous wastes are exempt from the requirements of this permit condition if:

i. They are received from conditionally exempt small quantity generators or legitimate household generators;

ii. It can be demonstrated that the dangerous waste is burned solely as an ingredient; or

iii. The final destination of the dangerous waste fuel is an industrial boiler or furnace that has achieved certification of compliance with final permit standards or interim emission standards under 40 CFR 266.102 or 266.103.

b. Phase separation of wastes constitutes treatment. The outputs of such treatment are thus wastes generated on-site and subject to the requirements of this condition.

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II.A.8. For all dangerous wastes which are subject to the 5,000 Btu/lb minimum requirement of Permit Condition II.A.7. and which are mixed with different wastestreams and/or wastes from different generators for the purpose of bulk transport to the facility, the Permittee shall obtain representative samples of the waste, as generated, prior to bulking. Such samples shall be subject to all appropriate analyses pursuant to Attachment CC and Permit Condition II.A.10. The Permittee is not required to sample wastes prior to bulking by the generator.

II.A.9. For all dangerous wastes which are subject to the 5,000 Btu/lb minimum requirement of Permit Condition II.A.7. and which are generated on-site, the Permittee shall obtain representative samples. Such samples shall be subject to analysis requirements of Permit Condition II.A.10.

II.A.10. For all materials listed under a. below that are also subject to Permit Condition II.A.7., the permittee shall determine the Btu value. Except as noted in b. below, the Permittee shall determine the Btu value of representative samples using Method D-2105 of the 1986 Annual Book of ASTM Standards.

a. Materials subject to the requirements of this permit condition shall be:

i. The 10% of each incoming container shipment of dangerous waste that is required to be sampled by the Waste Analysis Plan, Attachment CC, and

ii. All incoming bulk shipments of dangerous waste.

iii. All dangerous waste generated on-site; and

iv. All dangerous waste sampled pursuant to Permit Condition II.A.8.

b. The permittee shall not be required to determine the Btu value of waste samples under the following circumstances:

i. The permittee can demonstrate that the wastestream is an unused commercial product with a known heat content above 5,000 Btu/lb; or

ii. The Permittee can demonstrate:

A. The waste is a mixture of which all components are known; and

B. Existing published or documented data shows that all components of the waste have a known heat content greater than 5,000 Btu/lb; or

iii. The most recent waste profile of the wastestream indicates a value of greater than 7500 Btu/lb, plus three (3) consecutive shipments of that wastestream subsequent to the most recent waste profile all have values above 7500 Btu/lb.

II.A.11. Representative samples shall be collected from all bulk shipments of dangerous waste from off-site facilities.

II.A.12. A minimum of 10% of all incoming containers of dangerous waste from off-site facilities shall be individually sampled.

a. The containers to be sampled shall be chosen randomly. The Permittee shall maintain and follow written procedures which ensure that container sampling is random.

b. Every container shipment of every different waste stream from every generator shall be sampled as required by this permit condition.

II.A.13. For all samples of incoming dangerous waste from off-site facilities collected pursuant to Permit Conditions II.A.11. II.A.12., and II.A.18.b. in addition to all appropriate primary and secondary analyses in accordance with Attachment CC, the following tests shall always be performed on aqueous (water) phases:

Test Parameter	Test Method
a. pH	pH Analysis defined in Attachment CC
b. Cyanide If pH >6	Cyanide Spot Test defined in Attachment CC
c. Reactive Sulfide, If pH >7 and negative for cyanide	Test for Reactive Sulfide defined in Attachment CC

II.A.14. For all samples of incoming dangerous wast from off-site facilities collected pursuant to Permit Co litions II.A.11., II.A.12., and II.A.18.b., in addition to a l appropriate primary and secondary analyses in accordan with Attachment CC, the PCB Analysis as defined in Attachm t CC shall always be performed on non-aqueous phases.

II.A.15. The Permittee shall comply with all applic le requirements and prohibitions in 40 CFR Part 268 (Land isposal Restriction) for the storage and treatment of restricted wastes.

II.A.16. All testing performed as a result of the r quirements of 40 CFR Part 268, Subparts C or D, shall be pe formed as required by 40 CFR 264.13, General Waste A alysis.

II.A.17. The Permittee shall use the Toxicity Chara teristic Leaching Procedure (TCLP) or use knowledge of the waste to determine whether a waste exhibits the characteristic of toxicity, as defined in 40 CFR 261.24 and WAC 173-303-090(8).

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II.A.18. When there is a discrepancy between a Generator's dangerous waste designation, as provided by the generator profile or the manifest description, and the Permittee's dangerous waste designation, as determined by the screening analysis and any further waste analysis, the following steps shall be taken:

a. The generator shall be informed of the discrepancy and given the following options:

i. Amend the current profile or manifest, or submit a new profile which properly represents the waste; or

ii. Provide the Permittee permission to transport the load back to the generator or to an alternative permitted TSD facility.

b. The normal 10% requirement for sampling of incoming containers shall be increased. For shipments of incoming containers from that Generator, 50% of containers in all shipments shall be sampled for the six (6) month period following the discrepancy; however, in no case shall fewer than two such shipments be sampled following such a discrepancy. The results of these screenings shall be made available to the Department.

c. A significant manifest discrepancy shall be resolved within 15 days after receipt of the waste. If a longer period is required the Permittee shall notify the Department in a letter describing the discrepancy and attempts to reconcile it. Such a letter shall include a copy of the manifest or shipping paper at issue.

II.A.19. The Permittee may submit to the Department a proposal for measuring waste designation discrepancies which would substantiate a reduction in the number of incoming waste samples presently mandated. Department approval would be necessary before any reduction in sampling could occur. The proposal needs to address how the Permittee can support a request for less frequent sampling.

II.A.20. Rinsate generated from the management of listed dangerous waste, such as from container or tank cleaning, shall be managed as dangerous waste in accordance with Attachments II and JJ and the National Pollutant Discharge Elimination System (NPDES) Permit.

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II.A.21. [Note: This Permit Condition is a requirement necessary to demonstrate a net increase in protection under Washington's Hazardous Waste Siting Criteria and is also found as Permit Condition V.E.1.] The management of dangerous wastes from small quantity generators shall conform to the procedures for the management of fully regulated waste, this shall include storage of containers of such waste in buildings 2, 3 or 4 using the stacking patterns in Attachment II.

II.A.22. [Note: This Permit Condition is a requirement necessary to demonstrate a net increase in protection under Washington's Hazardous Waste Siting Criteria and is also found as Permit Condition V.E.2.] The management and storage of dangerous wastes in containers from exempted or excluded generators, including household hazardous wastes, shall at a minimum include:

a. Assuring smaller containers of incompatible wastes are not stored within the same larger outer containers;

b. Adherence to container tracking procedures in Attachment CC;

c. Adherence to inspection schedules and repair or corrective action requirements in Attachment EE; and

d. Use of covered storage with container management and storage area containment in accordance with WAC 173-303-630.

e. Adherence to the Moderate Risk Waste Fixed Facility Guidelines, Department publication No. 92-13.

II.A.23. All analyses performed in order to determine whether a waste exhibits the characteristic of ignitability shall be done with the most recent methods in SW-846. Currently those methods are Method 1010: the Pensky-Martens Closed Cup Method for Determining Ignitability and Method 1020: The Setaflash Closed Cup Method for Determining Ignitability.

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II.A.24. The Permittee shall store Water-reactive materials in accordance with Article 80.310 of the Uniform Fire Code (1991 Edition) as implemented and enforced by the City of Washougal Fire Department. The Department or Agency may enforce compliance with the UFC standards in the event that storage of water reactive materials should pose a threat to human health and the environment. For the purpose of this Permit Condition, water reactive materials include:

a. Known Uniform Fire Code (UFC) Class 1, Class 2, or Class 3 water reactive materials; and

b. Materials which react vigorously to water (similar to UFC Class 1, 2, or 3 water reactive materials) when subjected to the Water Mix Screen, Attachment CC.

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II.B. PREPAREDNESS AND PREVENTION

II.B.1 In accordance with 40 CFR Part 264.31 and WAC 173-303-340, the facility shall be designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of dangerous waste or dangerous waste constituent to air, soil, or surface or ground water which could threaten human health or the environment.

II.B.2 The Permittee shall ensure all water related safety equipment such as eyewash units and emergency showers shall remain operable at all times, including during periods of subfreezing temperatures.

II.B.3. A facility employee shall observe all loading and unloading of dangerous waste to or from tanker trucks and railcars occurring within the facility.

II.C. RECORDKEEPING AND REPORTING

II.C.1. In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall comply with all the applicable notification, certification, and recordkeeping requirements described in 40 CFR 268.7, and 40 CFR 264.73(b)(11), (12), (15), and (16).

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II.C.2. Operating Record: The Permittee shall maintain a written operating record at the facility, consisting of records kept for the length of time specified below. The record can be a compilation of various documents. The Permittee shall also record all information referenced in this Permit in the operating record within 48 hours of the information becoming available. The operating record shall include, but not be limited to, the information listed below.

a. The following records shall be maintained until closure and corrective action are complete and certified:

i. A current map showing the location of dangerous waste management units and non-regulated units within the facility;

ii. A map showing all locations of past dangerous waste management units if different from present locations;

iii. Assessment reports pursuant to Permit Condition V.D.8. and WAC 173-303-360(2)(k), of all incidents that require implementation of the contingency plan;

iv. Record of spills and releases;

v. Written reports and records of verbal notification to the Director and the Administrator to address releases, fires, and explosions;

vi. Summaries of all records of corrective action;

vii. All other environmental permits;

viii. Corrective action deed notification;

ix. Records and results of waste analyses required by WAC 173-303-300, pursuant to WAC 173-303-380(1)(c), which shall include at a minimum;

A. The date(s), exact place, and times of sampling or measurements;

B. The name of the individual(s) who performed the sampling or measurements;

C. The date(s) analyses were performed, demonstrating that EPA SW-846 holding times were satisfied;

D. The name of the individual(s) who performed the analyses;

E. The analytical techniques or method used

F. The analytical results;

G. The QA/QC summary; and

H. The type and model # of the equipment used for analysis.

x. Training records of current facility personnel;

xi. Certifications pursuant to 40 CFR 264.73(b)(9), Annual Waste Reduction Plan; and

xii. Facility construction records pursuant to Permit Condition V.C.5.

b. The following records shall be maintained for a minimum of 5 years. This time period may be extended by the Department or Agency in the event of enforcement action or notification by the Department or Agency that an investigation is ongoing. In the case of notification of investigation, the Permittee will not be required to keep the records longer than one (1) year past the normal time frame unless an enforcement action is issued:

i. Facility operation and maintenance records and reports prepared pursuant to this Permit;

ii. Date(s) and method(s) of treatment used per waste process operation including name(s) of personnel performing actual operation;

iii. Progress reports and any required notifications prepared pursuant to this Permit;

iv. The notice and certification required by a generator under 40 CFR 268.7. (Land Disposal Restrictions);

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v. Records of all inspection and monitoring information, including requirements of WAC 173-303-320(2)(d) and 395(1)(d) and including calibration and maintenance records which shall include at a minimum:

A. The date and time of data recording;

B. The name of the person taking and recording the information; and

C. The recorded information itself whether consisting of observation, data measurement, instrument reading or any other monitoring method.

vi. Records required by 40 CFR 264.1035(c)(3) through (c)(8) and 40 CFR 264.1064(d) and (e) for compliance with the Organic Air Emissions Standards for Process Vents and Equipment Leaks, 40 CFR Part 264 Subparts AA and BB; and

vii. Annual reports submitted in compliance with WAC 173-303-220(1), Generator Report - Form 4, unless the reports are necessary to supplement the facility operating record, in which case they must be retained until facility closure and corrective action are complete and certified.

c. The following records shall be maintained for a minimum of 3 years. This time period may be extended by the Department or Agency in the event of enforcement action or notification by the Department or Agency that an investigation is ongoing. In the case of notification of investigation, the Permittee will not be required to keep the records longer than one (1) year past the normal time frame unless an enforcement action is issued:

i. Annual reports submitted in compliance with WAC 173-303-390(2), TSD Facility Report - Form 5, unless the reports are necessary to supplement the facility operating record, in which case they must be retained until facility closure and corrective action are complete and certified;

ii. Manifests and any required unmanifested shipment or exception reports; and

iii. Training records of former facility personnel;

d. Current copies of the following documents as amended, revised, and modified shall be maintained at the facility until closure and corrective action are complete and certified:

i. Contingency Plan;

ii. Training Plan;

iii. Waste Analysis Plan;

iv. Documentation of arrangements made with local authorities pursuant to WAC 173-303-340;

v. All closure, interim measures and final corrective action cost estimates, financial assurance documents prepared pursuant to this Permit, as well as the company names and addresses of facility insurers;

vi. Closure Plan;

vii. For all new and converted "new" tank systems, pursuant to WAC 173-303-640(3) and 40 CFR 264.192:

A. An assessment, by an independent, registered professional engineer or independent qualified tank installation inspector not affiliated with the tank vendor, certified by an independent, registered professional engineer, that the tank system was installed properly and that all discrepancies have been repaired;

B. Results of tightness testing and integrity assessments; and

C. For all tanks which require corrosion protection, a written statement from a corrosion expert that attests to the proper design and installation of any corrosion protection measures.

viii. The results of periodic tightness testing and integrity assessments of all tank systems; and

ix. Documentation and information as required by 40 CFR Parts 264 Subparts AA and BB, Air Emission Standards for Process Vents and Equipment Leaks, except as noted in Permit Condition II.C.2.b.vi. This shall include but not be limited to;

A. The location of all affected units and the identification of all process vents;

B. Current data estimates on annual throughput and emission rates for affected vents;

C. Inspection schedules and recordkeeping procedures;

D. Description of procedures, structures, or equipment used at the facility to prevent releases to the atmosphere from process vents;

E. Monitoring and maintenance procedures; and

F. A list of information sources used in preparing the records.

x. Written container sampling procedures, pursuant to Permit Condition II.A.12.a.

II.C.3. The Permittee shall submit waste analysis or monitoring data within eight (8) weeks of receipt of a written request by the Department or Agency. If, by the end of the eight (8) week period, the requested data have not undergone Quality Assurance/Quality Control (QA/QC), and if the Department or Agency requests it, the Permittee shall submit the requested data in raw form. The Permittee shall identify all data submitted which has not undergone QA/QC.

II.D. CLOSURE

II.D.1. The Permittee shall submit a proposed background sampling plan to the Department at least eight (8) weeks in advance of the scheduled collection of background samples. The plan shall include a map showing the proposed sampling locations. The Department will have eight (8) weeks, from the date the Department receives the proposed background locations, to accept or deny the sampling proposal. Failure to respond within eight (8) weeks will constitute acceptance.

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II.D.2. The Permittee shall notify the Department at least 10 working days in advance of the scheduled collection of background samples.

II.D.3. The background analysis shall be statistically defensible considering local area conditions (e.g., soil heterogeneity, etc.). This shall require, at a minimum, a sufficient number of samples to provide a representative measure of background levels for hazardous constituents and substances.

II.D.4. The Permittee may perform additional background sampling or analysis. A proposal for additional sampling or analysis must be submitted and approved in accordance with Permit Condition II.D.1. and must meet the requirements of Permit Conditions II.D.2. and II.D.3.

II.D.5. If the Department determines that implementation of the approved background sampling plan has not adequately or accurately quantified background conditions, the Department may issue a final decision requiring additional sampling and analysis. The issuance of such a decision shall constitute an Agency action subject to the rights of appeal under Chapter 34.05 RCW.

II.D.6. Clean closure shall require the removal of all hazardous constituents listed in 40 CFR Part 261 Appendix VIII.

a. Removal to demonstrate clean closure shall mean attaining background environmental levels.

i. For the purposes of this permit condition, "background environmental level" shall mean the concentration of a hazardous substance determined by approved laboratory and statistical analyses of samples collected pursuant to Permit Condition II.D.1.

ii. If background environmental levels cannot be quantified for a hazardous constituent or substance, the practical quantitation limit (PQL) of the closure sample will be the standard.

iii. If the Department determines that implementation of the approved background sampling plan has not adequately or accurately quantified background conditions, the Department may issue a final decision requiring additional sampling and analysis. The issuance of such a decision shall constitute an Agency action subject to the rights of appeal under Chapter 34.05 RCW.

b. For hazardous constituents derived from waste or waste residues specified in WAC 173-303-610(2)(b)(ii) (state only wastes), removal shall also ensure the hazardous constituents are below the waste designation limits and the appropriate cleanup standards of Chapter 173-340 WAC.

c. The Department must approve of analytical and statistical methods used to determine whether soil samples from dangerous waste management areas demonstrate compliance with the standards for clean closure.

II.D.7. Sampling and analysis at the time of closure shall be conducted in accordance with the closure plan in Attachments HH and VV. The Department or Agency may require modification of the closure plan should the facility begin receiving different dangerous wastes (i.e., wastes requiring different management practices or changes to the Part A Permit) or if additional significant releases occur at the facility prior to the time of closure.

a. Within four (4) weeks of Notification of Closure pursuant to WAC 173-303-610(3)(c)(i) the Permittee shall submit to the Department a sampling plan. At a minimum the sampling plan shall identify the location of all soil and concrete samples to be taken. The sampling plan shall specify no less than the number of samples indicated in Attachment HH. The methods of selecting random and biased sampling locations shall be consistent with those indicated in Attachment HH. The Department will have eight (8) weeks from the date that the plan is received to require modification to the plan, or to approve the plan with or without changes. Failure to respond within eight (8) weeks will constitute approval of the plan.

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b. After the Notification of Closure pursuant to WAC 173-303-610(3)(c)(i) and at the request of the Department or Agency the Permittee shall provide the Department with the results of all previous analyses of soil or concrete samples from the facility.

c. The Permittee shall take biased soil samples from beneath locations of all stains and cracks in the concrete. Such samples shall be analyzed as biased soil samples pursuant to Attachments HH and VV.

d. If concrete from containment areas is to be left on-site or disposed of in a sanitary landfill, then the Permittee shall take biased samples of the concrete at locations of all cracks and stains. Such samples shall be analyzed as biased concrete samples pursuant to Attachments HH and VV.

e. The Permittee shall use approved analytical methods that achieve quantification limits adequate for demonstrating compliance with closure standards defined in Permit Condition II.D.6. To ensure this the Department may issue a final decision requiring specialized sample collection or analysis techniques. The issuance of such a decision shall constitute an Agency action subject to the rights of appeal under Chapter 34.05 RCW.

II.D.8. The following are specific laboratory procedures to be followed during closure:

a. When using GC/MS, peaks shall be identified as "Tentatively Identified Compounds" (TICs) if they are greater than 10% of the nearest internal standard response. If possible, up to 10 TICs shall be reported for each volatile organic analysis (VOA) and up to 20 TICs shall be reported for each semi-VOA. The Department may, with reason, require the identification of additional peaks. If a priority pollutant is discovered it shall be quantified.

b. When AA or ICP is utilized, cold vapor atomic absorption shall be used for mercury analysis.

c. Metal analysis shall use SW 846 Method 3050, or EPA method 200.2 for sample preparation for metals to be analyzed by flame AA or ICP.

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II.D.9. The activities of the independent registered engineer to assure that closure is conducted in accordance with the approved plan shall specifically include, but not be limited to, the following:

a. Observation of all pre-designated locations to be biased sampled;

b. The observation of the collection of background samples;

c. Review of tank decontamination records to determine that closure plan requirements for triple rinsing and rinsate management have been followed and that tanks have been adequately cleaned;

d. Determining compliance with sampling protocols; and

e. Review of laboratory results before discharge of decontaminated rinsate.

II.E. CLEAN UP OF RELEASED MATERIAL

II.E.1. In the event of a spill or nonpermitted discharge of dangerous waste the Permittee shall comply with the requirements of WAC 173-303-145. In addition to the requirements of WAC 173-303-145, the Permittee shall:

a. Take appropriate immediate action to protect human health and the environment; and

b. Clean up all released dangerous waste or hazardous substances. At a minimum the Department will require such clean ups to attain the facility closure standards.

II.E.2. Any spilled or leaked waste within secondary containment shall be removed immediately upon identification.

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II.F. FINANCIAL ASSURANCE AND LIABILITY REQUIREMENTS

II.F.1. The Permittee shall demonstrate continuous compliance with WAC 173-303-620(4) by providing documentation of financial assurance to the Director as required by WAC 173-303-620(10).

a. Such documentation shall be adjusted annually for inflation in compliance with WAC 173-303-620(3)(c) and entered into the facility operating record per WAC 173-303-620(3)(d) and Permit Condition II.C.2.d.v. Annual adjustment for inflation shall not require a permit modification under WAC 173-303-830.

i. Financial assurance, prior to future adjustment for inflation, shall be in at least the amount of the closure cost estimate in Attachment HH as revised by the requirements of Permit Condition II.F.3.

ii. The pay-in period of a trust fund shall not exceed the term of the Permit.

b. The Permittee shall provide documentation of financial assurance adequate for disposal or treatment of the contents and subsequent decontamination of any new dangerous waste management unit, no later than 60 days prior to the use such unit.

II.F.2. The Permittee shall report to the Director and the Administrator any claims made on the liability insurance fund. The report shall be submitted in writing within 30 days of the filing of such claims and shall contain information on the number and type of claims filed, the amount of each claim, and a description of the occurrence that led to the claim.

II.F.3. The Permittee shall submit to the Agency and the Department, no later than 90 days after the Permit effective date, a revised closure cost estimate and documentation of financial assurance based upon the requirements of this Permit.

a. The revised closure cost estimate must include closure costs for all permitted units at their maximum capacity, whether the units are existing or proposed.

b. Documentation of financial assurance must be provided for all existing units. Documentation of financial assurance for new units shall be provided pursuant to Permit Condition II.F.1.b.

II.G. Organic Air Emission Standards for Process Vents

II.G.1. The 40 CFR 264, Subpart AA air emission standards for process vents are applicable to two (2) units at the facility: the Batch Kettle Still #1 (Tank #4102) and the Batch Kettle Still #2 (Tank # 4111). Compliance with Subpart AA shall include, but not be limited to, complying with the reporting requirements of 40 CFR 264.1036.

II.G.2. The Permittee shall use an activated carbon air emission control unit, as described in Attachments EE, JJ, and NN, to control emissions from the units regulated under 40 CFR 264, Subpart AA. Pursuant to 40 CFR 264.1033(h)(1), testing of the unit, when in use, shall be performed at least daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity, whichever is greater.

a. The time required to consume 20 percent of the total carbon working capacity shall be determined and recorded pursuant to 40 CFR 264.1035(b)(4)(iii)(G).

b. Test procedures and instruments shall comply with the requirements of 40 CFR 264.1034(b).

c. Sampling shall be done immediately before and after the first carbon adsorber and immediately after the second carbon adsorber. When the removal efficiency of the first adsorber falls below 50% or when breakthrough of any compound through the second adsorber is indicated the first adsorber shall be replaced in accordance with Attachments EE and JJ.

II.G.3. The Permittee shall comply with air emission standards codified in 40 CFR 264 Subpart AA through the use of a control device as specified in Permit Condition II.G.2. Control devices shall reduce total organic emissions from all affected process vents associated with the two units defined in Permit Condition II.G.1. by 95 weight percent. All determinations undertaken to demonstrate compliance with this standard and any determinations of emissions, or emission reductions, associated with control devices and connecting closed vent systems shall be based on methods and procedures provided in 40 CFR 264.1034.

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II.G.4. The Permittee shall comply with all requirements of the Air Emission Monitoring Program for Process Vents provided in Attachment NN.

The Permittee's Air Monitoring Notebook, included in the facility's operating record, shall document compliance with both the Air Emission Monitoring Program and Conditions II.G.1. through II.G.4. In addition, besides providing the results of measurements taken pursuant to II.G.4., the Notebook shall contain calculated worst case emission rates for the range of processing conditions and feed compositions which are currently in use or anticipated at the facility. Relationships should be derived and presented, based on process vent flow rate (or velocity) and organic concentration measurements, showing the effect that changes in processing conditions (e.g., temperature, pressure, composition of the feed, and ambient temperature) have on resultant emission rates.

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II.H. Organic Air Emission Standards for Equipment Leaks

II.H.1. The Permittee shall comply with air emission standards for equipment leaks codified in 40 CFR 264 Subpart BB for all non-exempt valves, pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves/lines, flanges, and organic air emission control devices and systems which contain or contact hazardous wastes with organic concentrations of ten (10) percent (by weight) or greater, and where those wastes are managed in hazardous waste recycling, treatment, storage, or disposal units. This shall include, but not be limited to, complying with the reporting requirements of 40 CFR 264.1065.

II.H.2. The Permittee shall respond to each detected leak from a valve, pump, pressure relief device in liquid service, and flange or other connection device subject to the requirements of this section as soon as practicable, and shall comply with all applicable requirements of 40 CFR 264.1064(c).

II.H.3. The Permittee shall comply with all requirements of the Air Emission Monitoring Program for Equipment Leaks provided in Attachment NN.

The Permittee's Air Monitoring Notebook, included in the facility's operating record, shall document compliance with both the Air Emission Monitoring Program and Conditions II.H.1. and II.H.2.

II.I. Other Organic Air Emission Standards

II.I.1 The Permittee shall use activated carbon air emission control units as described in Attachments EE, JJ, and NN, to control emissions from the Process Containment Building and from tanks containing extremely hazardous waste. Testing of these units shall be performed at least daily when in use and shall be in accordance with Attachment NN.

II.I.2. Results of the carbon filter testing shall be recorded in the inspection log. The date and time of sampling, sampling readings, and name of sampler shall also be recorded in the inspection log.

II.I.3. The Permittee shall comply with requirements of the Southwest Air Pollution Control Authority and the permit SWAPCA 83CL-182 as revised. The Permittee shall submit to the Southwest Air Pollution Control Authority a written request to amend the permit SWAPCA 83CL-182, and the revised amendment issued, prior to any alteration, installation, or establishment of an air contaminant source or air contaminant control equipment.

PART III - CONTAINERS

III.A. CONTAINER MANAGEMENT AREAS AND ACCUMULATION LIMITS

III.A.1. The Permittee may store drummed waste in the following areas. Quantities may not exceed either the number of drums or gallons specified.

Indoor Storage	Storage Limit
Building 2 (S2-1 through S2-13)	660 drums (36,300 Gallons)
Building 3 (13 storage bays)	1,932 drums (106,260 Gallons)
East Arena (6 storage bays)	972 drums (53,460 Gallons)
West Arena (7 storage bays)	960 drums (52,800 Gallons)
PCB Storage Area	60 drums (3,300 Gallons)
Remaining 6 storage bays	900 drums (49,500 Gallons)
Building 4 (20 storage bays)	1,680 drums (92,400 Gallons)

III.A.2. Subject to conditions III.B.1., III.B.3., and III.B.4., wastes may be loaded, unloaded, and accumulated, up to the amounts specified, in the areas identified below (See Figure B1-2, Attachment BB). No container which contains dangerous waste shall be placed on a loading/unloading pad for more than 24 hours.

Loading/unloading pads	Accumulation Limits
Central Pad	176 drums (9,680 Gallons)
South Pad	264 drums (14,520 Gallons)

III.B. CONTAINER MANAGEMENT PRACTICES

III.B.1. Drums shall not be placed or stored in rows more than two (2) drums wide. The Permittee shall maintain aisle space within container storage buildings as specified in Attachment II of this Permit. A minimum of thirty-inch aisle space shall be maintained for loading/unloading pads. The Permittee shall maintain a minimum of one (1) foot of aisle space between the end of rows of containers and walls, except that all containers shall be stored more than three (3) feet from any door. All drums shall be at least 0.5 feet from the nearest containment berm.

III.B.2. The Permittee shall store flammable and combustible liquids in accordance with Article 79.203 of the Uniform Fire Code (1991 Edition) including limiting the stack height of containerized Class I-B and I-C flammable liquids to 1 drum, unless and until the Permittee receives written authorization for different storage arrangements from the City of Washougal Fire Department.

III.B.3. In addition to the requirements of WAC 173-303-630(7), all container storage areas shall have secondary containment capacity sufficient to contain 20 minutes of fire flow water pursuant to Article 79.115 of the Uniform Fire Code (1991 Edition).

III.B.4. Incoming containers on loading/unloading pads shall not be placed more than three (3) feet two (2) inches high. If containers are stacked on a pallet the height limit shall be increased six (6) inches.

III.B.5. Outgoing containers on loading/unloading pads shall not be placed more than six (6) feet four (4) inches high If containers are stacked on pallets, the height limit shall be increased by six (6) inches per pallet, but shall not exceed 12 additional inches.

III.B.6. No containers which contain dangerous wastes and which are required to be segregated or separated by 49 CFR 177.848 shall be placed on the same loading/unloading pad.

III.B.7. The Permittee shall ensure that an aisle which is at least eight (8) feet wide is maintained in front of areas requiring ingress/egress such as maneuvering of containers by equipment.

III.B.8. No containers, except those that are empty as defined in WAC 173-303-160, may be placed or stored on their sides.

III.B.9. Stacked drums within designated storage areas shall not be placed or stored higher than nine (9) feet six (6) inches high. If containers are stacked on pallets, the height limit shall be increased by six (6) inches per pallet, but shall not exceed 18 additional inches.

a. At no time shall any container be placed on top of a stack which is three (3) 55 gallon containers high.

b. At all times when drums are stacked three (3) high, provisions (e.g., library ladders) which are dedicated to each building must be made to allow for inspection.

III.B.10. The Permittee shall not store or place containers containing incompatible wastes in adjacent secondary containment areas without utilizing one of the following measures:

a. A compatible physical barrier capable of preventing drums or drum contents from entering the adjacent secondary containment area; or

b. Placing containers that are within 4.5 horizontal feet of the adjacent secondary containment area no higher than six (6) feet 10 inches high, including pallets.

III.B.11. Containers of dangerous waste or household hazardous waste shall not be placed or stored anywhere other than defined storage areas, process areas within secondary containment, or loading/unloading pads. Containers of dangerous waste shall not be placed in areas other than defined container storage areas for more than 24 hours.

III.B.12. The Permittee shall keep all dangerous waste containers securely closed except when adding or removing waste.

III.B.13. Containers in the PCB/dangerous waste storage area shall be stored such that the containers will not be in contact with spilled waste in the event that ten percent of the volume of all containers or the volume of the largest container, whichever is greater, is spilled in the containment area.

III.B.14. [Note: This Permit Condition is a requirement necessary to demonstrate a net increase in protection under Washington's Hazardous Waste Siting Criteria and is also found as Permit Condition V.E.4.] In addition to inspection procedures and schedule in Table F2-4 of Attachment EE, the integrity of the entire base of all container storage areas shall be inspected every six months, at a minimum. This inspection is to include the area under drums.

III.B.15. The Permittee shall record the results of all inspections of containers, container storage areas, and loading areas specified by this permit and its attachments, on an inspection form for entry into the facility operating record. In addition to the items specified in Table F2.4 of Attachment EE, the Permittee shall verify and record proper stacking arrangement of containers, segregation of incompatible wastes, and free access to fire extinguishers, exits and entrances.

III.B.16. The integrity of all containment systems shall be maintained. Cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of pads, berms, curbs, sumps, construction joints, and coatings of container storage areas shall be repaired. Repairs shall be completed within the week following detection of their need in accordance with Attachment EE (i.e., as a Priority 1 or Priority 2 response level repair or remedial action depending on the potential for an environmental release). All sumps shall either be lined with stainless steel attached to the concrete and sealed, or shall be coated with a chemical resistant coatings compatible with wastes stored in that area.

III.B.17. Pursuant to WAC 173-303-630(7)(a)(i) all container secondary containment systems shall be provided with an impermeable interior coating or lining that will render the containment sufficiently impervious to contain leaks, spills, and accumulated rainfall.

a. The coating or lining must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present.

b. The coating or lining must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical damage to the coating or lining can be identified and remedied before wastes could migrate from the system.

c. The coating or lining must be compatible with the waste stored in the containment system as specified in Attachment JJ.

III.C. CONDITION OF CONTAINERS

III.C.1. If a container holding dangerous waste is not in good condition (e.g., exhibits excessive rusting, structural defects, or any other condition that could lead to container rupture or leakage), the Permittee shall transfer the dangerous waste from that container to a compatible container which is in good condition, or to an overpack container, within 24 hours. The damaged container shall be managed as a dangerous waste unless it can be considered empty pursuant to WAC 173-303-160.

III.C.2 The contents of any container noted to be leaking will be transferred immediately to a compatible container which is in good condition or to an overpack container. The damaged container shall be managed as a dangerous waste unless it can be considered empty pursuant to WAC 173-303-160.

III.D. IDENTIFICATION OF CONTAINERS

III.D.1. Pursuant to WAC 173-303-630(3) the Permittee shall ensure that each container of dangerous waste is labeled in a manner which adequately identifies the major risk(s) associated with the contents.

a. The Permittee shall ensure that all dangerous waste containers are marked as specified by WAC 173-303-190(3)(b) and 40 CFR 262.32(b).

b. The Permittee shall ensure that all dangerous waste containers are marked and labeled in accordance with the requirements specified in U.S. Department of Transportation regulations 49 CFR Part 172.

III.D.2. For all dangerous waste containers the Permittee shall ensure that:

a. All labels placed by the Permittee are printed with indelible (waterproof) ink;

b. All labels placed by the Permittee are placed on the upper portion of the container side as close to the top as the drum design allows;

c. Labels are not obscured or otherwise unreadable;

d. Generator labels are not to be obscured by any labels placed by the Permittee; and

e. Dangerous waste containers are oriented so as to allow inspection of the labels identified in Permit Condition III.D.1., the container tracking number, and, to the extent possible, any labels which the generator placed upon the container.

III.D.3. Empty containers, as defined by WAC 173-303-160(2), shall have their Dangerous Waste labels removed immediately upon being rendered empty.

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III.E. COMPATIBILITY

III.E.1. The Permittee shall ensure that all containers used for dangerous waste management are made of or lined with materials which will not react with and are otherwise compatible with the dangerous waste to be stored.

III.E.2. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same container, and shall not place dangerous waste in an unwashed container that previously held an incompatible waste or material.

III.E.3. The Permittee shall ensure that all dedicated and non-dedicated equipment used for transfer of dangerous waste to or from containers (pumps, hoses, piping, valves, etc.) is compatible with the wastes, and is decontaminated before it is used for the transfer of incompatible wastes, as defined in WAC 173-303-395(1)(b).

III.E.4. Incompatible wastes, as defined in WAC 173-303-040, shall not be placed or stored within the same secondary containment area. Incoming containers in the loading/unloading areas and lab packs assembled in compliance with the procedures in Appendix B-1, Attachment AA will not be subject to this condition if they conform to Department of Transportation compatibility requirements.

III.F. APPROVED WASTES

The Permittee may store all dangerous wastes listed in the Part A Permit Application (Permit Attachment BB).

PART IV - TANK SYSTEMS

IV.A. EXISTING DANGEROUS WASTE TANK SYSTEMS

IV.A.1. The Permittee may store and/or treat dangerous wastes in the following tanks:

4100 through 4107, 4110 through 4113, 4130, 4131, 4150, 4151, 4200 through 4204, 4401 through 4408, 4601 through 4607, 4701, and 4801.

IV.B. INTEGRITY ASSESSMENT

IV.B.1 The Permittee shall review, pursuant to WAC 173-303-640(2)(c) and based on current tank integrity assessment results, the structural integrity of all dangerous waste management tank systems every five years starting from the date of Permit issuance or, for new tanks, starting from the date new tanks are put into dangerous waste service. See Table IV-1 for more frequent interval inspections of the tank interior. Results of the integrity assessments shall be included in the Operating Record accessible at the facility. Any tank system found to be leaking or unfit for service must be immediately removed from service and the Permittee shall comply with the requirements of WAC 173-303-640(7). A tank system shall not be returned to service until the Permittee has obtained the required certification.

IV.B.2. The tank integrity assessments performed every 5 years shall be done by an independent, registered, professional engineer. The initial assessment of new and converted "new" tank systems may be performed by an independent, qualified registered professional engineer or by an independent qualified installation inspector not affiliated with the tank vendor, and shall be certified by an independent, qualified registered professional engineer.

IV.B.3. Visual inspections referred to in Table IV-1 shall be done by an independent registered professional engineer or an independent National Association of Corrosion Engineers (NACE) Level II or Level III certified inspector at least once during each 5 year period. More frequent visual inspections called for in Table IV-1 can be done by a Permittee employee who is a registered engineer or a NACE Level II or Level III Certified Inspector.

C. APPROVED WASTES

Permit Attachment JJ identifies the dangerous wastes which the Permittee may store and/or treat in each tank system.

IV.D. TANK MANAGEMENT PRACTICES

IV.D.1. Unless the requirements of WAC 173-303-395(1)(b) are met, the Permittee shall not place dangerous waste into a tank system that has not been decontaminated and which was previously used for the management of incompatible wastes.

IV.D.2. Tank entry shall not be done until vapors, if present, are below 10 % of the Lower Explosive Limit (LEL).

IV.D.3. The integrity of tank and process area containment systems shall be maintained. Cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of pads, berms, curbs, sumps, construction joints, and coatings of tank system areas shall be repaired. Repairs shall be completed within the week following detection of their need in accordance with Attachment EE (i.e., as a Priority 1 or Priority 2 response level repair or remedial action depending on the potential for an environmental release). All sumps shall either be lined with stainless steel attached to the concrete and sealed, or shall be coated with chemical resistant coatings compatible with wastes stored in that area.

IV.D.4. Pursuant to WAC 173-303-640(4) tank and process area secondary containment systems shall be provided with an impermeable interior coating or lining that will render the system capable of preventing the migration of any wastes out of the system to the soil, ground water, or surface water at any time during the use of the tank system.

a. The coating or lining must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present.

b. The coating or lining must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical damage to the coating or lining can be identified and remedied before wastes could migrate from the system.

c. The coating or lining must be compatible with the waste stored in the containment system as specified in Attachment JJ.

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IV.D.5. The Process Containment Building shall meet all requirements pertinent to dangerous waste tank containment structures. This shall include, but not be limited to, construction, sealing and coating requirements specified in Attachment JJ and tank area inspection requirements specified in Attachment EE.

IV.D.6. All carbon steel tanks with a service rating of A, B or C as defined by Table F2-6 of Attachment EE, shall be provided with corrosion coupons installed in the vapor and liquid phases. All corrosion coupons shall be inspected no less frequently than once a year.

IV.D.7. All on ground tanks shall have undertank leak detection that meets the recommendations of API Standard 650, Item #650-281. Within 60 days of the Permit effective date the Permittee shall submit revised design drawings which demonstrate compliance with this standard. The Department will have 60 days from the date the design drawings are received to either accept or deny the demonstration. Failure to respond within 60 days will constitute acceptance.

IV.D.8. The Permittee shall store dangerous waste in tanks 4701 and 4801 in accordance with the requirements of this permit condition as specified below:

a. The Permittee shall not fill tank 4701 or 4801 to a level higher than 70.5 inches from the bottom of the tank when the combined specific gravity of material in the tank is less than 1.47.

b. The Permittee shall not fill tank 4701 or 4801 to a level higher than 61 inches from the bottom of the tank when the combined specific gravity of material in the tank is between 1.47 and 1.75.

c. In no case shall the Permittee store materials in tank 4701 or 4801 with a combined specific gravity of greater than 1.75.

d. In no case shall the Permittee fill tank 4701 or 4708 to a level higher than 12 inches below the top of the tank shell.

IV.E. CLOSURE

IV.E.1. When hydroblasting is used as a method for tank decontamination during closure, hydroblasting procedures shall follow the guidelines specified by the Agency and/or Ecology. At the time of Permit issuance, current guidelines are contained in EPA document 600/2-85/028: "Guide for Decontaminating Buildings, Structures and Equipment at Superfund Sites.

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PART V - FACILITY COMPLIANCE REQUIREMENTS

V.A. TANK COMPLIANCE REQUIREMENTS

V.A.1. For all tanks which undergo modification, permit modification procedures, pursuant to Permit Condition I.C.3., will be followed. Emergency modifications to correct unsafe conditions may be performed prior to a formal modification request, but such a written request must be submitted within 30 days after the start of modification. The Permittee shall notify the Department, via telephone, within 24 hours of any emergency modifications.

V.A.2. The Permittee shall vent all tanks storing extremely hazardous wastes through activated carbon canisters as specified in Attachment JJ. Operation of the control equipment for these tanks shall be continuous and capable of attaining performance standards as described in Attachment JJ. Monitoring, testing, repair, and record keeping associated with control of vapors from extremely hazardous waste tanks shall be consistent with procedures in Section II.I. of this Permit. The Permittee shall use the best demonstrated available technology consistent with primary safety concerns (e.g., risk of fire, injury, explosion, or other catastrophic failure) to capture vapors, generated as the result of a fire, which cannot be captured by the carbon canisters.

V.B. SPECIAL REQUIREMENTS FOR CONSTRUCTION

V.B.1 [Note: This Permit Condition is a requirement necessary to demonstrate a net increase in protection under Washington's Hazardous Waste Siting Criteria and is also found as Permit Condition V.E.3.] No new units for the management of dangerous waste from fully regulated generators or small quantity generators or household hazardous waste shall be constructed within the 100 year flood plain. At a minimum, finished floor elevations of all new construction for the management of these wastes shall be at 18.58 feet, referenced to the National Geodetic Vertical Datum (NGVD).

V.B.2. [Note: This Permit Condition is a requirement necessary to demonstrate a net increase in protection under Washington's Hazardous Waste Siting Criteria and is also found as Permit Condition V.E.3.] To ensure the facility is protected against a 500 year storm event the Permittee shall:

a. By the effective date of this Permit, present evidence that the finished floor elevations of all existing units for the management of dangerous waste from fully regulated generators or small quantity generators or household hazardous waste are above 18.43 feet NGVD; or

b. If portions of the existing facility have finished floor elevations below 18.43 feet NGVD, then the Permittee shall complete one of the following construction projects according to the schedule in Part V.C.2.:

i. Construct a containment berm with a minimum top elevation of 18.43 feet NGVD around all portions of the facility where dangerous waste from fully regulated generators or small quantity generators or household hazardous waste may be placed or handled; or

ii. Add to existing containment berms around all portions of the facility defined in i. above in order to achieve a minimum top elevation of 18.43 feet NGVD.

V.C. CONSTRUCTION SCHEDULE

V.C.1. For all new tanks, including existing tanks being relocated, the tank high level alarm and monitoring panel per Figures D2-35 through D2-38, Attachment JJ, shall be installed prior to placing the tank into service.

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V.C.2. The following construction activities shall be completed within the time specified. Time periods shall begin on the effective date of this Permit.

Facility Wide

12 months	*	Complete construction as required by Permit Condition V.B.2.b., if necessary.

Building 4

13.5 months	*	Complete construction of building (refer to Drawing 44001 in Attachment II)

Building 2 and 3

15 months	*	Complete upgrade and application of coating to secondary containment (refer to Drawing 88-25-S7 in Attachment II)

Loading/Unloading Pads

13.5 months	*	Complete construction of the south container loading/unloading pad (refer to Drawing D-88-25-S9 in Attachment II)
12.5 months	*	Complete construction and upgrade secondary containment of the central loading/unloading pad (refer to Drawing D-88-25-S7 in Attachment II)

Proposed Tank System

24 months	*	Complete installation of tanks and civil and structural construction, including west loading/unloading pad (refer to Drawing D-88-25-S4 in Attachment JJ)
24 months	*	Complete construction of the air emission control systems, including carbon adsorption systems (refer to Attachment JJ)

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V The following construction activities shall be completed within the time specified and the Department must be notified 120 days prior to initiation of their construction. Time periods shall begin on the effective date of this Permit.

Process Containment Building

60 months * Complete construction of building (refer to Appendix D-7 and Drawings D-88-25-S4 in Attachment JJ)

Railroad car loading/unloading area

60 months * Construct railcar load/unload area secondary containment (refer to Drawing D-88-25-S6 in Attachment JJ)

Storage Magazine in Building II

60 months * Install unit as described in Attachment II which meets the specifications of Article 77.203 of the 1991 edition of Uniform Fire Code Article

V.C 4. The Permittee shall maintain records of all facility construction operations. Such records shall be maintained at the facility until closure and corrective action are complete and certified, and shall include at a minimum:

a. Daily construction reports;

b. Photographs of stages of construction work;

c. Summary or minutes of construction meetings;

d. Material test results;

e. As-built designs as certified by a registered professional engineer;

f. Construction changes as certified by a registered professional engineer; and

g. All quality control procedures undertaken by the Permittee.

V.C.5. Within 60 days after construction, or a phase of construction, of a new or modified area is complete, the Permittee shall submit to the Department a formal report signed by the Permittee which demonstrates that the facility has been constructed in compliance with the Permit. The report shall incorporate, at a minimum, all of the elements defined in Permit Condition V.C.5.

V.D. GENERAL FACILITY COMPLIANCE REQUIREMENTS

V.D.1. The Permittee shall not operate the facility in exceedence of approved Interim Status tank storage and treatment capacity prior to the completion of all items specified in Permit Conditions V.C.1. and V.C.3. Approved Interim Status container storage capacity shall not be exceeded prior to completion of all items in Permit Condition V.C.2. Additionally, the Permittee shall not treat or store dangerous waste in tanks above approved Interim Status tank capacity prior to installation of new tanks under V.C.4.

V.D.2. The Permittee shall not conduct a significant expansion of dangerous waste management, as defined in WAC 173-303-282(3)(p), under this Permit until the conditions in Section V.E. of this Permit are implemented. Following implementation of conditions in Section V.E. the Permittee may expand to the capacities listed in Attachment BB subject to condition V.D.1.

V.D.3. The Permittee shall maintain within the Operating Record a map locating each management unit and locating each process, both ongoing and intermittent. The relocation of any processes shall be recorded within the operating record within 5 days of relocation.

V.D.4. The Permittee shall allow independent sampling and sample splitting when requested by the Department or the Agency. At the Permittee's request, the Department or the Agency will inform the Permittee of all analyses to be performed on split samples.

V.D.5. The Permittee shall submit samples for analysis by an independent, accredited laboratory upon request by the Department or the Agency. Such submittals shall be limited to two (2) events per year, and 12 samples per event.

V.D.6. Criteria for the clean up or the prevention of contamination of all environmental media shall ensure the protection of human health and the environment and shall be at least as stringent as standards for clean closure as defined in Section II.D. of this Permit.

V.D.7. Whenever an area used for the management of dangerous waste from fully regulated generators or small quantity generators or household hazardous waste is in use, the Permittee shall inspect the secondary containment including all sumps in that area for the presence of accumulated liquids at a minimum of once every 24 hours.

a. Any spills, releases, or accumulated precipitation shall be removed from secondary containment systems in as timely a manner as necessary to prevent overflow of sumps; in all cases such removal shall occur at least once every working shift or a minimum of every twenty four hours.

b. All spilled or released dangerous wastes from known sources shall be removed from secondary containment immediately upon occurrence or discovery.

c. All spilled or released dangerous wastes from unknown sources shall be adequately characterized for placement into compatible storage upon discovery. Such spilled or released dangerous waste shall be removed from secondary containment immediately upon being adequately characterized.

d. All materials in sumps in dangerous waste management areas which are covered by a roof shall be managed as spilled or leaked dangerous wastes unless and until the materials are demonstrated to be non-dangerous wastes.

V.D.8. The Permittee shall note in the facility operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident the Permittee shall submit a written report on the incident to the Department. Such a report shall at a minimum include all items specified in WAC 173-303-360(2)(k).

V.D.9. Facility inspections shall include, in addition to all items and procedures specified in Attachment EE, daily inspection of groundwater monitoring wells within secondary containment for pertinent items such as the loss of integrity of surface seals, frost heave, etc.

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V.E. REQUIREMENTS TO DEMONSTRATE A NET INCREASE IN PROTECTION UNDER WASHINGTON'S HAZARDOUS WASTE SITING CRITERIA

V.E.1. [This Permit Condition is also found as Permit Condition II.A.21.] The management of dangerous wastes from small quantity generators shall conform to the procedures for the management of fully regulated waste, this shall include storage of containers of such waste in Buildings 2, 3 or 4 using the stacking patterns in Attachment II.

V.E.2. [This Permit Condition is also found as Permit Condition II.A.22.] The management and storage of dangerous wastes in drums from exempted or excluded generators, including household hazardous wastes, shall at a minimum include:

a. Assuring smaller containers of incompatible wastes are not stored within the same larger outer containers;

b. Adherence to container tracking procedures in Attachment CC;

c. Adherence to inspection schedules and repair or corrective action requirements in Attachment EE;

d. Use of covered storage with container management and storage area containment in accordance with WAC 173-303-630; and

e. Adherence to the Moderate Risk Waste Fixed Facility Guidelines, Department publication No. 92-13.

V.E.3 [This Permit Condition is also found as Permit Conditions V.B.1. and V.B.2.] Special Requirements For Construction

a. No new units for the management of dangerous waste from fully regulated generators or small quantity generators or household hazardous waste shall be constructed within the 100 year flood plain. At a minimum, finished floor elevations of all new construction for the management of these wastes shall be at 18.58 feet, referenced to the National Geodetic Vertical Datum (NGVD).

b. To ensure the facility is protected against a 500 year storm event the Permittee shall:

i. By the effective date of this Permit, present evidence that the finished floor elevations of all existing units for the management of dangerous waste from fully regulated generators or small quantity generators or household hazardous waste are above 18.43 feet NGVD; or

ii. If portions of the existing facility have finished floor elevations below 18.43 feet NGVD, then the Permittee shall complete one of the following construction projects according to the schedule in Part V.C.2.:

A. Construct a containment berm with a minimum top elevation of 18.43 feet NGVD around all portions of the facility where dangerous waste from fully regulated generators or small quantity generators or household hazardous waste may be placed or handled; or

B. Add to existing containment berms around all portions of the facility defined in i. above in order to achieve a minimum top elevation of 18.43 feet NGVD.

V.E.4 [This Permit Condition is also found as Permit Condition III.B.14.] In addition to inspection procedures and schedule in Table F2-4 of Attachment EE, the integrity of the entire base of all container storage areas shall be inspected every six months, at a minimum. This inspection is to include the area under drums.

V.F. LAND DISPOSAL RESTRICTIONS

V.F.1. The Permittee shall not in any way dilute a restricted waste or the residue from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with 40 CFR Part 268, Subpart D.

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V.G. SCHEDULE EXTENSIONS

V.G.1. The Permittee shall notify the Department, in writing, as soon as possible of any deviations or expected deviations from any schedules of Parts I through VI or Attachments AA through MM of this Permit. The Permittee shall include with the notification all information supporting its claim that it has used best efforts to meet the required schedules. If the Director determines that the Permittee has made best efforts to meet the schedules of this Permit, the Director shall notify the Permittee in writing by certified mail that the Permittee has been granted an extension. Such a revision shall not require a permit modification under WAC 173-303-830. Copies of all letters pursuant to this permit condition shall be kept in the Operating Record.

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V.H. TRAFFIC MANAGEMENT

V.H.1. Clearly visible lines shall be maintained on all loading/unloading areas. These lines shall define container placement and truck parking areas.

V.H.2. Whenever a vehicle used for the transport of dangerous waste approaches a loading/unloading area, a facility employee shall be in such a position that he or she can both observe the approach of the vehicle and can signal to the driver to turn or stop.

V.H.3. Vehicles which are used for the transport of dangerous waste to or from the facility and which contain dangerous waste, shall be parked only in designated loading/unloading zones. There shall be no more than two (2) vehicles, including vehicles not used for dangerous waste transport, in any one loading/unloading zone at any one time. These limits may be exceeded in the event of emergency situations such as spill response.

V.I. CLOSURE OF INTERIM STATUS AREAS

V.I.1. The Permittee shall not receive waste into the Existing Tank System (as defined in Attachment AA) after commencing treatment or storage of dangerous waste in the Permitted Dangerous Waste Tank System.

V.I.2. Subsequent to the receipt of the known final volume of waste into the Existing Tank System (as defined in Attachment AA) the Permittee shall close the Existing Tank System and all loading/unloading pads no longer used for dangerous waste management.

a. Closure of these areas shall be conducted in accordance with a closure plan approved by the Department. The Permittee shall submit to the Department a closure plan for these areas within 60 days of the Permit effective date. The Permittee may not receive waste into the Proposed Tank System (as defined in Attachment AA) until the Department has approved the closure plan for the Existing Tank System.

b. Closure of these areas shall meet all of the closure standards of Section II.D. of this Permit for all structures and environmental media.

c. Pursuant to WAC 173-303-400 and 40 CFR 265.112 and 265.113, the following closure activities shall be completed within the specified times.

i. The Permittee shall notify the Department at least 45 days prior to the date on which he expects to begin closure. The date when he expects to begin closure shall be no later than 30 days after the date on which the Existing Tank System receives the known final volume of dangerous wastes.

ii. The Permittee shall treat or remove all dangerous wastes in accordance with the approved closure plan within ninety days after receiving the final volume of dangerous wastes.

iii. The Permittee shall complete closure activities in accordance with the approved closure plan within 180 days after receiving the final volume of dangerous wastes.

V.I.3. Should the Department determine that the Permittee has not achieved the clean closure standards for the Existing Tank System, pursuant to Permit Condition V.I.2.b., the Permittee shall submit an application for a post-closure permit within 180 days of notification of such a determination. The application shall meet all the requirements of WAC 173-303-400(3) and 40 CFR 265.117 through 265.120.

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V.J. PROHIBITIONS

V.J.1. The Permittee may not operate any of the following process units (as described in Attachment AA):

a. Aerosol Depressurization Unit;

b. Container Shredding System;

c. Container Compaction System; and

d. Small Quantity Treatment Area.

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PART VI - PERMIT BY RULE

VI.A. WASTEWATER TREATMENT UNIT

The Permittee may store, treat and discharge dangerous wastewater in and from a wastewater treatment unit(s) as defined in WAC 173-303-040.

VI.B. GENERAL CONDITIONS

VI.B.1. The Permittee shall design, operate, and maintain the wastewater treatment unit in accordance with the provisions of WAC 173-303-802(5)(a)(i),(ii), and (iii).

VI.B.2. The Permittee shall comply with the terms of the NPDES Permit as revised (Number WA-003998-5) for discharge from the wastewater treatment unit(s), unless authorized by the Department due to special circumstances or emergencies.

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PART VII - CORRECTIVE ACTION

VII. Corrective Action for Continuing Releases

Section 3004(u) of RCRA (Section 206 of HSWA), 42 USC Section 6924(u), and regulations codified at 40 CFR 264.101 require Corrective Action(s) to protect human health and the environment from all hazardous wastes or constituents released from solid waste management units (SWMUs) at the facility. Such Corrective Action is indicated regardless of when the waste was placed in the unit, and must be stipulated in all permits issued after November 8, 1984.

Section 3004(v) of RCRA, and the regulations promulgated pursuant thereto, directs the Permittee to implement Corrective Action(s) beyond the facility property boundary, where necessary to protect human health and the environment.

VII.A. RCRA Facility Investigation (RFI)

VII.A.1. Pursuant to the requirements for Corrective Action, the Permittee must complete a RCRA Facility Investigation (RFI). The Permittee has initiated RFI activities to comply with the 3008(h) Order (# 1088-09-03-3008(h)).

RFI activities undertaken pursuant to compliance with the 3008(h) Order, and reports on those investigations submitted prior to the effective date of the Permit, will be considered as having met Phase 1 of the RFI. Phase 1 of the RFI was therefore completed with the submittal of the June 28, 1991 RFI Report, and that report shall be considered for the purposes of this Permit as the Phase 1 RFI Report.

The 3008(h) Order will be rescinded by an Order of Rescission at or near the time this Section (VII.), including all requirements for plans, reports, and schedules for Corrective Action contained herein, becomes final and effective.

VII.A.2. The scope of Phase 2 of the RFI has been in large part anticipated by the Phase 1 RFI Report. The "Washougal Draft Phase II RFI Work Plan", submitted in March, 1992, shall be considered for the purposes of this permit as the draft Phase II Workplan. The Workplan must respond to the concerns stated below, and must comply with RFI Workplan criteria included in Attachment PP.

The Workplan must include an approximate schedule for initiating and completing Phase 2 investigatory activities. The Agencies will review, and then approve or disapprove the Workplan. If disapproved, the Permittee will be directed to modify the Workplan to meet the Agencies' concerns. Once an approved Workplan has been established, the Permittee will proceed to implement Phase 2 of the RFI in accordance with the Workplan.

As part of the Phase 2 investigation the Permittee shall at a minimum:

a. Examine and characterize the lower aquifer underlying the facility. The hydrogeologic properties of this water-bearing zone will be investigated, as well as the nature, extent, and anticipated fate of groundwater or non-aqueous phase liquid contamination here. Any monitoring wells installed in this effort shall comply with well construction, maintenance, and replacement requirements specified in Attachment QQ;

b. Evaluate the ability of the low permeability zone separating the two identified water-bearing zones to act as an aquitard. Through geophysical techniques, confirmatory borings, and pump tests, the investigation shall evaluate the continuity, thickness, and elevation of this zone, especially in southerly and easterly areas downgradient from source areas of groundwater contamination. The results of previous borings and the ground-penetrating radar study may be used as part of this evaluation. And,

c. Evaluate the ability of the underdrain located under 32nd Street to act as an interceptor for contaminated groundwater moving off-site. This evaluation should include an assessment of contaminant levels within the underdrain, and an identification of potential underdrain discharge points.

VII.A.3. Within ninety (90) days of aquisistion of all Phase 2 RFI field and analytical data, the Permittee shall submit a draft Phase 2 RFI Report to the Agencies. The Report shall include tabulated, quality assured data, and laboratory reports. The Report shall be prepared to comply with RFI Report criteria included in Attachment PP. If the investigation has identified a release or potential release which is not addressed in the approved Workplan, the Report should propose modifications to the Workplan for subsequent investigations.

The Report shall be reviewed by the Agencies, and either approved or disapproved. If disapproved, the Permittee will be directed to meet the Agencies' concerns.

The Agencies will determine, based upon the review: whether the Phase 2 RFI met the objectives of the Workplan; to what extent conclusions reached in the Report are supported by quality data and interpretations; and, whether further investigations appear to be warranted. If no changes are required to the draft Report, the Agencies will consider that Report the final Phase 2 RFI Report.

RFI Reports and Workplans shall be submitted according to the schedule in Attachment SS. If the Permittee disagrees with the Agencies' determinations regarding any RFI Reports or Workplans, the Permittee may initiate the dispute resolution process specified in Permit Condition VII.E.

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VII.B. Corrective Measure Study (CMS)

VII.B.1.A Corrective Measures Study (CMS) to identify appropriate remedies for the contamination present at the facility shall be completed according to Attachment RR, "CMS Process", and shall include the following:

CMS Workplan
Phase 1 CMS
Phase 2 CMS

a. CMS Workplan. Within ninety (90) days of Agency acceptance of the Phase 2 RFI Report the Permittee shall submit a CMS Workplan. The Workplan shall include an approximate CMS time schedule, and proposals for laboratory and bench scale studies (where appropriate). The Workplan will describe how viable corrective measures will be identified, and how the assessments of those measures will consider the specific conditions present at the facility.

The Workplan shall include a proposed list of specific Media Clean-up Standards. These Standards will be used for evaluating the effectiveness of the remedial technologies, and (if approved by the Agencies) used as the initial targets for demonstrating satisfactory clean-up. Initial Media Clean-up Standards must meet EPA health-based levels, Washington State Model Toxics Control Act Standards (see Attachment RR), and all applicable local, State, and Federal regulatory requirements. Proposals for revising the Standards, based upon constituent concentrations found in background sampling during the RFI or proposed CMS, may, however, be additionally included in the Workplan.

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The Agencies will review, and then approve or disapprove the Workplan. If disapproved, the Permittee will be directed to modify the Workplan to meet the Agencies' concerns. Once an approved Workplan has been established, the Permittee will proceed to implement Phase 1 of the CMS in accordance with the Workplan.

b. Phase 1 CMS. The Permittee shall identify viable corrective measures and evaluate each measure in the Study in terms of: its technical performance (i.e., its reliability, implementability, and effectiveness in reducing the toxicity, mobility, and volume of the contamination present to meet Media Clean-up Standards); its effect (both short and long-term) on human receptors and the environmental setting; its approximate cost; and, any relevant institutional concerns.

Within forty-five (45) days of completing Phase 1 activities described in the approved CMS Workplan and schedule, the Permittee shall submit a Phase 1 Report to the Agencies. The Report shall be prepared in accordance with criteria provided in Attachment RR, shall present the results of the analyses undertaken, and shall end by recommending a preferred measure or group of measures. The Agencies will review the Phase 1 CMS Report, and either approve or disapprove the Report. If disapproved, the Permittee will be directed to meet the Agencies' concerns.

The Agencies will determine, based upon the review: whether the Phase 1 CMS met the objectives of the Workplan; to what extent conclusions reached in the Report are supported by quality data and interpretations; and whether further studies appear to be warranted (e.g., if certain measures not preferred by the Permittee should be more fully evaluated). If no changes are required to the draft Report, the Agencies will consider that Report the final Phase 1 CMS Report, and direct the Permittee to proceed to the second phase of the CMS.

c. Phase 2 CMS. The Permittee shall perform a detailed technical, environmental, and human health assessment to evaluate the consequences of implementing a specific design of the recommended corrective measure(s).

Within forty-five (45) days of completing the Phase 2 activities described in the approved CMS Workplan and schedule, the Permittee shall submit a Phase 2 Report to the Agencies. The Report shall be prepared in accordance with criteria provided in Attachment RR, and will discuss the results of Phase 2 of the CMS. The Report shall defend the selection of the specific preferred corrective measure and conclude with an estimated timetable for remedy implementation. If the estimated time necessary for implementation of the remedy exceeds one (1) year, the Report shall propose specific intervals for the submittal of progress reports.

The Agencies will review the Phase 2 CMS Report, and either approve or disapprove the Report. If disapproved, the Permittee will be directed to meet the Agencies' concerns.

The Agencies will determine, based upon the review: whether the Phase 2 CMS met the objectives of the Workplan; to what extent conclusions reached in the Report are supported by quality data and interpretations; and, whether further studies appear to be warranted. If no changes are required to the draft Report, the Agencies will consider that Report the final Phase 2 CMS Report.

CMS Reports and Workplans shall be submitted according to the schedule in Attachment SS. If the Permittee disagrees with the Agencies' deter inations regarding any CMS Reports or Workplans, the ermittee may initiat the dispute resolution process specified in Permit ndition VII.E.

VI..B.2. If the Permittee has good cause to believe that the contamination and site-specific conditions present do not warrant a CMS, the Permittee may, in lieu of a CMS Workplan and within ninety (90) days of the Agencies' acceptance of the Phase 2 RFI Report, submit a proposal for implementing specific corrective easures to the Agencies. The proposal should be a detailed submittal, should be constructed similarly to the CMS Phase 1 and 2 reports described above, should convincingly state the rationale for the proposed measure(s), and should document the effectiveness of the chosen remedial measure(s) in meeting a proposed set of Media Clean-up Standards.

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The Agencies will review the proposal. In particular, for situations where there is a well defined "low risk", or where a relatively high quality remedy is being advocated by the Permittee, or where there appears to be few, or perhaps a single straightforward remedial option, a formal CMS may well not be indicated. If the Agencies agree with the Permittee that a CMS is not necessary, and approve the proposal, the proposal will be submitted to public review and comment, instead of CMS Reports. If the proposal is not approved, the Permittee will be directed to either change and re-submit the proposal, or abandon the proposal and submit a CMS Workplan.

VII.B.3. The Permittee's December 1988 "Initial Assessment of Corrective Measure Technologies" report, undertaken pursuant to compliance with the 3008(h) Order, may be submitted, or referenced, by the Permittee in an effort to comply with the provisions of VII.B.1. and VII.B.2. above.

VII.C. Remedy Selection

Following approval of the CMS Report, or approval of the corrective measure proposal described in VII.B.2. above, the Agencies will notify the Permittee that the preferred remedy should be proposed as a Corrective Measure Implementation Class III permit modification request, pursuant to 40 CFR 270.42(c). The modification request must include at a minimum: specific plans and details for implementation of the remedy; a proposed schedule of activities; a proposed monitoring well system and monitoring program; proposed Media Clean-up Standards and a plan for demonstrating compliance with those Standards; and, proposed reporting intervals.

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VII.D. Interim Measures

In response to the known contamination of groundwater underlying the facility, the Permittee shall implement Interim Measures to address the threat this contamination poses to human health and the environment. The Permittee shall develop Measures to both contain and diminish the known groundwater contamination (identified in the RFI) and substantially reduce the ability of contaminated source areas to further contribute to that contamination.

Groundwater:

VII.D.1. Within thirty (30) days of the effective date of the Permit, and quarterly thereafter (until a different monitoring interval is approved pursuant to Interim Measure implementation discussed below), the Permittee shall collect groundwater samples from "MC"-designated wells 1, 2, 2D, 7, 8, 8D, 8S, 10, 11, 12, 12D, 13, 13D, 14, 15, 15D, 16, 17, and 18. Samples will be analyzed for parameters and constituents listed in Table UU.1 of Attachment UU. The Permittee shall maintain records of the results of these analyses in the facility's Operating Record. Upon written request by the Agencies, these results shall be submitted within fifteen (15) days of the Permittee's receipt of the request.

VII.D.2. The Draft Interim Measures Work Plan submitted in March, 1992, shall be considered for the purposes of this Permit as the draft Groundwater Interim Measures Implementation Plan. The Plan must propose specific plans for the design, construction, installation, operation, and monitoring of a groundwater corrective action system which will begin remediating groundwater contamination, and minimize the off-site migration of contaminated groundwater and non-aqueous phase liquids. The Plan must include a schedule of Interim Measure activities which will propose a time frame for completing all aspects of the system. The Plan shall also specifically include:

a. A statement of the site-specific Interim Measure objectives, and a discussion of how the groundwater corrective action system proposed will meet the objectives;

b. Proposals for a recovery well system. The Permittee has submitted reports in March 1991 entitled "Chempro Washougal Facility Interim Corrective Measures Report" and "Chempro Washougal Facility Groundwater Treatment System Engineering Report and Operations and Maintenance Manual." The proposal may be based upon information contained in these reports, but shall be designed to incorporate the most recent information available concerning conditions at the site. The proposed system shall initially make use of recovery wells R1, R2, R3, R4, R5, R6, R7, and R8, installed by the Permittee in 1988 but never operated. In addition, the proposal will recommend either improvements or replacement of well MC-R, so that a higher performance recovery well continues to operate in this location. The system shall include observation wells in the immediate vicinity of all recovery wells (the Permittee may propose in the Plan to utilize existing monitoring wells to meet this requirement). The proposal shall recommend recovery well pumping rates, and a performance-monitoring scheme;

c. Proposals for well construction, maintenance, and replacement in accordance with Attachment QQ;

d. Proposals for a contaminated groundwater treatment and discharge system. The Permittee has submitted reports in March 1991 entitled "Chempro Washougal Facility Interim Corrective Measures Report" and "Chempro Washougal Facility Groundwater Treatment System Engineering Report and Operations and Maintenance Manual." The proposed system may draw upon information contained in these reports, but must be based on the specific requirements of this Permit Condition, and the most recent information available concerning conditions at the site. The system shall be designed to meet the likely treatment demands of groundwater recovered by the wells described in Permit Condition VII.D.2.b., but will include the flexibility, or added capacity, to treat larger volumes of water and different contaminant concentrations, if modifications to the recovery well system is deemed necessary. In addition, the system will be designed to meet all applicable local, state, and federal regulatory requirements;

e. A data collection, data management, and quality assurance plan for reporting results;

f. An Interim Measure Monitoring plan which meets the requirements detailed in Attachment UU; and,

g. A proposal for progress report intervals which coincide with Interim Measure activities and data collection.

The Agencies will review the Implementation Plan. Following the review the Agencies will either approve or disapprove the Plan. If disapproved, the Permittee will be directed to modify the Plan to meet the Agencies' concerns.

VII.D.3. During implementation and operation of the Interim Measure groundwater corrective action system the Permittee shall submit Progress Reports to the Agencies. These Reports shall commence on a date established in the approved plan, and shall be submitted on an interval set forth in the plan until which time as Interim Measures are judged by the Agencies to be no longer needed, or that time when Interim Measures become subsumed by implementation of long-term Corrective Measures. Based upon information contained in the Reports, the Agencies may direct the Permittee to take appropriate actions. These actions may include modifications to the Interim Measure system if the Agencies determine that system is not satisfactorily meeting the objectives of Interim Measures.

The Reports shall at a minimum include:

a. A discussion and summary of all Interim Measure-related activities undertaken during the time period;

b. Reports of the results of all sampling and monitoring completed pursuant to the Implementation plan; and,

c. A discussion, based on activities and sampling results described in a. and b. above, of changes in: the locations and levels of contamination at the facility; identified migration pathways (or potential pathways); the perceived effectiveness of the Interim Measure system; and impacts (or potential impacts) on human health and the environment since the last reporting period.

VII.D.4. During operation of the Interim Measure groundwater corrective action system the Permittee shall submit Annual Reports to the Agencies. These Reports shall commence on a date established in the approved Implementation Plan, and shall be submitted until which time as Interim Measures are judged by the Agencies to be no longer needed, or that time when Interim Measures become subsumed by implementation of long-term Corrective Measures. Based upon information contained in the Reports, the Agencies may direct the Permittee to take appropriate action. The Annual Reports shall at a minimum include:

a. Calculations and contour maps showing the rate and direction of groundwater flow in aquifer systems underlying the facility;

b. Any recommendations for changes to the system, based upon an evaluation of the system's effectiveness in meeting Interim Measure goals and objectives; and,

c. The results of an analysis of at least one groundwater sample for all 40 CFR 264 Appendix IX constituents. Such an analysis shall be performed to ensure that all hazardous constituents of concern in the groundwater are identified. Any wells chosen for sampling shall be proposed initially in the Interim Measure Implementation Plan, and are subject to the Agencies' approval. The Agencies may at this time request more than one well sample, depending on the possibility of multiple aquifer contamination, multiple plumes, or other current, site-specific factors.

If, based on new information, the Permittee later concludes that different wells are more appropriate for these purposes, new wells must be proposed in a Progress Report prior to the annual sampling. Again, selection of any new Appendix IX wells are subject to the Agencies' approval. This selection shall not require a permit modification.

Any constituents detected above their respective Appendix IX Practical Quantitation Limits must be included in the Interim Measure Monitoring constituent/parameter list, unless the Agencies direct the Permittee otherwise. Modification of the monitoring list in such a manner shall not require a permit modification.

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Source Areas:

VII.D.5. To meet the second objective of Interim Measures, contaminated source areas will be addressed. Past inspections of the facility, and conclusions reached in the Phase 1 RFI Report have identified soils generally underlying the facility processing area as a likely source of continuing groundwater contamination. The Permittee shall address source areas of groundwater and soil contamination by performing the following investigative/remedial steps:

Interim Measure Investigation (IMI) Workplan
IMI
Interim Measure Study (IMS) Workplan
IMS
Interim Measure Implementation

a. Interim Measures Investigation (IMI) Workplan. At least sixty (60) days prior to movement of the facility's tank system (to be completed by May 11, 1993 in accordance with Permit Condition V.C.3.), the Permittee shall submit an IMI Workplan. The Workplan shall describe how potential source areas for groundwater contamination may be investigated and characterized. Investigated source areas will at a minimum include two areas: an area in the solvent distillation area nearby the MC-R recovery well; and, an area adjacent to the office and laboratory where previously identified trenches with contaminated soils have been filled-in with concrete. The Workplan shall also propose an approximate IMI schedule. Following review of the Workplan, the Agencies will either approve or disapprove the Workplan. If disapproved, the Permittee will be directed to modify the Workplan to meet the Agencies' concerns.

b. IMI. The Permittee shall conduct an investigation of potential source areas of contamination according to the approved IMI Workplan. Within sixty (60) days of completion of IMI field activities the Permittee shall submit a draft IMI Report. The Report shall include tabulated, quality assured data, and laboratory reports. If the investigation has identified a source area or potential source area not addressed in the approved Workplan, the Report should propose modifications to the Workplan for subsequent investigations.

The Report shall be reviewed by the Agencies, and either approved or disapproved. If disapproved, the Permittee will be directed to meet the Agencies' concerns.

The Agencies will determine, based upon the review: whether the IMI met the objectives of the Workplan; to what extent conclusions reached in the Report are supported by quality data and interpretations; and, whether further investigations appear to be warranted. If no changes are required to the draft Report, the Agencies will consider that Report the final IMI Report.

c. Interim Measure Study (IMS) Workplan. Within sixty (60) days of the Agencies' approval of the IMI Report the Permittee shall submit an IMS Workplan. The Workplan will describe how viable Interim Measures for addressing contaminated source areas identified in the IMI Report will be selected, how assessments of those Measures will consider the specific conditions present at the site, how assessments of those Measures will include considerations of long term and Interim Measure groundwater remediation, and how Measures will be evaluated to determine their effectiveness in diminishing contributions from source areas to groundwater contamination. As part of the Study, contaminated soil removal must be evaluated as a possible remedial Measure. The Workplan shall also propose an approximate IMS and Interim Measure implementation schedule. Following review of the Workplan, the Agencies will either approve, or disapprove the Workplan. If disapproved, the Permittee will be directed to modify the Workplan to meet the Agencies' concerns.

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If the Permittee has good cause to believe that the contamination and site-specific conditions present do not warrant an IMS, the Permittee may, in lieu of an IMS Workplan and within thirty (30) days of the Agencies' acceptance of the IMI Report, submit a proposal for implementing specific interim measures to the Agencies. The proposal should be a detailed submittal, should be constructed similarly to the IMS Report and Implementation Workplan described in e. below, and should convincingly state the rationale for the proposed measure(s). In addition, the proposal should discuss how the proposed measure(s) will impact long term and Interim Measure groundwater remediation, and how the measure(s) will be monitored or evaluated to determine their effectiveness in diminishing contributions from source areas to groundwater contamination.

The Agencies will review the proposal. If the Agencies agree with the Permittee that an IMS is not necessary, and approve the proposal, the Permittee will be directed to commence Interim Measure activities per the approved proposal. If the proposal is not approved, the Permittee will be directed to either change and re-submit the proposal, or abandon the proposal and submit an IMS Workplan.

d. IMS. Upon approval of the IMS Workplan the Permittee shall conduct an IMS to identify and evaluate viable, and preferable, Interim Measures for addressing source areas of groundwater contamination. The IMS shall generally follow the requirements established for conducting a CMS, as stated in Permit Condition VII.B.1. (for both Phase 1 and Phase 2 of the CMS), but shall be tailored to the objective of minimizing the threat to human health and the environment through a relatively rapid removal or remediation of the groundwater contamination source.

e. IMS Report and Implementation Workplan. Within sixty (60) days of completion of the IMS the Permittee will submit a draft IMS Report and Implementation Workplan to the Agencies for addressing source areas of groundwater contamination. The Report shall discuss the results of the IMS and defend the selection of the preferred Interim Measure. The Permittee shall prepare the Report in general accordance with Attachment RR's requirements for CMS Reports, but shall tailor the Report to the specific objectives of Interim Measures. The Implementation Workplan shall propose activities for undertaking, monitoring, and reporting on the Interim Measures selected, and shall provide a schedule for the initiation and completion of these activities.

The Agencies will review, and approve or disapprove of the IMS Report and Implementation Workplan. If disapproved, the Permittee shall be directed to meet the Agencies' concerns regarding the Report and/or Workplan. Upon establishment of an approved Report and Workplan the Agencies will direct the Permittee to commence Interim Measure activities per the approved schedule and plan.

Interim Measure Reports and Workplans shall be submitted according to the schedule in Attachment TT. If the Permittee disagrees with the Agencies' determinations regarding any Interim Measure Reports or Workplans, the Permittee may initiate the dispute resolution process specified in Permit Condition VII.E.

Discovery of Release:

VII.D.6. If at any time during the term of this Permit the Permittee discovers a release of hazardous waste or hazardous constituents at or from the facility which is not at the time of discovery being addressed by Section VII. or other Permit Conditions, and may present an imminent threat to human health or the environment, the Permittee shall notify the Agencies in writing of the nature, source, extent, location, and magnitude of such a release.

This notification shall be submitted in two parts. First, within fifteen (15) calendar days of discovery of the release the Permittee shall submit in writing an initial notification report of the discovery. This notification shall alert the Agencies to the magnitude of the threat (as it is currently perceived by the Permittee).

Then, within sixty (60) days of such a discovery the Permittee must submit a comprehensive written report. The report shall discuss the Permittee's efforts to investigate and/or remediate the discovered release and shall specifically include:

a. The concentrations and estimated quantities of any hazardous wastes or hazardous constituents released;

b. The known, or expected, pathway(s) through which the contamination is migrating (or may migrate), and the extent, rate, and direction of that migration;

c. The projected fate and transport of the release;

d. The likely exposure pathway(s) for potential receptors, and the consequences of exposure to these receptors; and,

e. An outline of proposed Interim Measures to arrest the release, as well as a schedule for implementing the Measures. The schedule should be justified by a discussion of possible consequences arising from the delay in implementing Interim Measures.

In addition, if at any time during the term of this Permit the Permittee discovers a release of hazardous waste or hazardous constituents at or from the facility which is not at the time of discovery being addressed by Section VII. or other Permit Conditions, and does not present an imminent threat to human health or the environment, the Permittee may request review of voluntary measures proposed for addressing the release following notification to the Agencies in writing of the nature, source, extent, location, and magnitude of such a release.

VII.D.7. If, based either on information submitted in VII.D.6. above, or on information obtained during the investigation or monitoring of the facility, the Agencies determine at any time that an imminent threat to human health or the environment may result from a release at the facility, the Permittee will be directed by a notification from the Agencies to submit an Interim Measure implementation workplan designed to minimize that threat. The workplan must propose Interim Measures which would, to the fullest extent practicable, be consistent with the objectives (and contribute to the performance) of any longer-term remedy which may eventually required. In such a case Interim Measure actions and studies previously undertaken by the facility pursuant to compliance with the 3008(h) Order, or Permit Conditions VII.D.1. through VII.D.5. may be submitted, or referenced, by the Permittee.

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VII.E. Dispute Resolution

VII.E.1. In the event that the Agencies reject, in whole or in part, any plan, report, or schedule required by Part VII of this Permit, the following procedure will apply:

a. The Agencies will notify the Permittee in writing of the acceptance, rejection, or proposed modification to, the plan, schedule, or submittal. Such notice shall:

i. Identify the problem(s) and, where appropriate, suggest the exact changes which need to be made to the plan, schedule, or submittal;

ii. Provide an explanation and supporting documentation or data for why modification is needed; and,

iii. Provide a date by which comments on any modifications proposed by the Agencies must be received from the Permittee. The date in such a case will not be less than thirty (30) days from the date of the Permittee's receipt of the Agencies' notice.

b. In the event that the Agencies receive no written comments from the Permittee on any proposed modifications, those modifications will become effective five (5) days after the close of the comment period specified in Permit Condition VII.E.1.a.iii. The Agencies will then promptly notify the Permittee that the particular modifications have become effective.

c. In the event that the Permittee submits written comments on any modifications proposed by the Agencies, the Agencies shall, if practicable, make a final determination concerning those modifications within thirty (30) days after the end of the comment period. The Agencies will then promptly notify the Permittee in writing of the final decision. The notification shall:

i. Indicate the effective date of the specific modification. This date shall be no later than fifteen (15) days after the date of notification of the final modification decision;

ii. Include an explanation of how comments were considered in developing the final modification; and,

iii. Provide a copy of the final modification.

VII.E.2. Modifications to any plans, reports, or schedules initiated and finalized by the Agencies pursuant to Permit Condition VII.E.1. do not require permit modification, and are not subject to administrative appeal.

VII.F. Quality Assurance

VII.F.1. The Permittee shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures as identified in relevant EPA guidance documents for all sample collection and analysis activities performed pursuant to this Permit. Specifically, the Permittee shall follow EPA guidance for sampling and analysis contained in the most recent editions of the "RCRA Groundwater Monitoring Technical Enforcement Guidance Document" and "Test Methods for Evaluating Solid Waste (SW-846)".

VII.F.2. The Permittee shall inform the Agencies in Workplans which laboratories will be used to analyze all samples collected.

VII.F.3. The Permittee shall ensure that all laboratories performing analyses for the Permittee comply with EPA guidance documented in the most recent edition of "Test Methods for Evaluating Solid Waste (SW-846)", and participate in a quality assurance/quality control (QA/QC) program equivalent to that which is followed by EPA. As part of such a QA/QC program, and upon request by the Agencies, the Permittee shall have such laboratories perform analyses of samples provided by the Agencies to demonstrate the quality of the analytical data typically produced by them.

VII.F.4. The Permittee shall report all laboratory detection limits for all constituents included in analyses.

VII.F.5. The Permittee shall follow EPA guidance for evaluation of all data obtained pursuant to this Permit.

VII.G. New SWMUs

VII.G.1. The Permittee shall notify the Agencies in writing no later than thirty (30) days following the discovery of a newly-identified facility SWMU. Newly-identified SWMUs will be considered those SWMUs not specifically identified in the facility's RCRA Facility Assessment (RFA) which the Permittee discovers after the effective date of the Permit. Notification shall include: a thorough description of the SWMU; an identification of the solid wastes, hazardous wastes, and hazardous constituents (if any), managed at the SWMU; and information on the nature and character of any release, or potential release, from the SWMU.

VII.H. Nothing in this Permit shall limit the Agencies' authority to undertake, or require any person to undertake, response action or corrective action under any law, including (but not limited to): Sections 104 or 106 of CERCLA (42 USC Sections 9604 or 9606), and Section 7003 of RCRA (42 USC Section 6973). Nor shall any Permit Condition relieve the Permittee of any obligation under any law, including (but not limited to) Section 103 of CERCLA, to report releases of hazardous wastes, constituents, or substances to, at or from the facility.

VII.I. All plans, reports, and schedules required by the terms of this Permit are, upon approval by the Agencies, incorporated into this Permit. Any noncompliance with such approved plans, reports, and schedules shall be termed noncompliance with this Permit.

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VII.J. Failure to submit the information required in this Permit, or falsificati of any submitted information is grounds for termination of e Permit (40 CFR 270.43). All information submitted mus certified, as required by 40 CFR 270.11(d).

VII.K. In the event that the Agencies disapprove of any plan, report, or schedule required by this section (VII.), and approval of the submittal as specified in this permit does not require a Permit modification under 40 CFR 270.41, either the Agencies or the Permittee may initiate the dispute resoluti process specified in Permit Condition VII.E. Under this Permit condition each plan, report, and schedule shall be considered separately, and neither the process itself nor the revisions resulting therefrom shall affect the schedule of the other plans, reports, or schedules.

VII.L. Equivalent Materials and Methods

If certain equipment, materials, and methods are specified in this section (VII.), the Permittee is allowed to use an equivalent or superior. Use of such substantially equivalent or superior items shall not be considered a modification of the Permit, but the Permittee must place in the Operating Record such a revision, accompanied by a narrative explanation, and the date the revision became effective. The Agencies may judge the soundness of the Permittee's determination during inspections of the facility, or in responses to facility submittals, and take appropriate action. Updates to the EPA reference document SW-846 (changes made after the third edition) may also be considered equivalent or superior.

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VII.M. Schedule Extensions

To the extent that activities required by Part VII or Attachments NN through UU of this Permit are not completed in accordance with their respective schedules, and the Permittee can demonstrate to the Agencies' satisfaction that the Permittee used best efforts to accomplish those activities within the allotted timeframe, the Agencies shall grant the Permittee an extension to the respective schedules. For the purposes of this permit condition, "best efforts" shall include performance of all activities necessary to award contracts to outside contractors at the earliest opportunity after the information necessary to award those contracts is available to the Permittee; adequate funding; adequate planning; adequate operator staffing; adequate laboratory and process controls; and, operation of a back-up or auxilliary facility (or similar systems) by the Permittee when necessary to meet corrective action schedules in this Permit.

The Permittee shall notify the Agencies in writing as soon as possible of any deviations, or expected deviations, from corrective action schedules in this Permit. The notification shall include information to support the permittee's claim that "best efforts" were made to comply with the Permit's schedules. If the Agencies determine that the Permittee has indeed demonstrated that "best efforts" were made to meet the schedule(s), the Agencies shall notify the Permittee in writing that an extension has been granted, and provide revisions for all affected schedules. Such revision of permit schedules shall not require a permit modification.

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STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

FACT SHEET

FOR DANGEROUS WASTE STORAGE AND TREATMENT PERMIT
CHEMICAL PROCESSORS INC. (CHEMPRO)
WASHOUGAL FACILITY
WAD092300250

DW#220-754

The Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) are proposing to issue a Resource Conservation and Recovery Act (RCRA) Permit to Chemical Processors Inc. (Chempro) for its dangerous waste management facility located at 625 South 32nd Street, Washougal, WA 98671. The facility EPA/State I.D. number is WAD092300250. This fact sheet, prepared in accordance with the requirements of 40 CFR 124.8 and WAC 173-303-840(2)(f), describes the facility and the proposed dangerous waste storage and treatment activities.

PURPOSE OF THE PERMITTING PROCESS

Chempro is currently operating at the Washougal facility under interim status. The permitting process affords EPA, Ecology, interested citizens, and other governmental agencies the opportunity to evaluate whether the proposed facility will comply with the more stringent dangerous waste management requirements necessary for a final RCRA Permit. The draft permit sets forth all the applicable requirements with which Chempro must comply during the ten-year maximum duration of the permit. Permit modification may be required by Ecology or EPA , or may be requested by Chempro, at any time. These requirements include but are not limited to the regulations set forth in 40 CFR Parts 260-264, 270 and Chapter 173-303 WAC.

PROCEDURES FOR REACHING A FINAL DECISION

During the comment period the public may review and comment on the draft permit conditions prior to EPA and Ecology taking any final action on the permit. The comment period will begin on February 7, 1992 and will end on March 23, 1992. Any person interested in commenting on this draft permit must do so within this comment period.

All persons wishing to comment on this permit issuance or request a public hearing should submit their concerns in writing to either:

Ms. Dawnee Dahm Environmental Protection Agency Region 10 Mail Stop HW-106 1200 Sixth Avenue Seattle, WA 98101 (206) 553-2867	or	DOUGLAS BROWN DEPARTMENT OF ECOLOGY HAZARDOUS WASTE PERMITS PV 11 PO BOX 47600 OLYMPIA WA 98504-7600 (206) 459-6993

Commenters should include supporting material to allow their comments to be fully documented. Such material should include pertinent technical or legal references and citations.

A public hearing shall be scheduled if EPA and Ecology receive significant written interest to the draft permit conditions or permit application, or if a request for a public hearing within the above specified comment period is made. The hearing shall be held at a location convenient to residents near the proposed facility. Public notice of the hearing shall be given at least 30 days before the hearing. Any requests for a public hearing must be postmarked by the end of the comment period and be accompanied by a written description of the issues to be raised. Written requests for a public hearing should be addressed to Ms. Dahm or Mr. Werner at the above addresses.

When making a determination regarding the issuance of this permit to Chempro, EPA and Ecology will consider all written comments received during the public comment period; comments received during the public hearing (if held); the requirements contained in 40 CFR 124, 260-264, 270, and Chapter 173-303 WAC; and each agency's permitting policies.

When EPA and Ecology make a final decision to either issue, deny, or modify this draft permit, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final decision. The final decision will become effective thirty (30) days after the final decision notice unless a review is requested pursuant to 40 CFR 124.19 and WAC 173-303-845.

STATE ENVIRONMENTAL POLICY ACT

Chempro submitted a revised SEPA checklist to Ecology in April 1991. This checklist was forwarded to the City of Washougal. The City of Washougal subsequently transferred lead agency status to Ecology. Ecology has evaluated the SEPA checklist prepared by Chempro, added clarifications based on the Permit Application, and made a threshold determination of non-significance (DNS). The DNS is subject to public review and comment until February 24, 1992.

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FACILITY DESCRIPTION

The facility governed by this permit occupies approximately 5.2 acres of land. Figures B4-4 and B1-2, reproduced here from the permit application, illustrate the facility location and layout. The facility is bounded on the East by South 32nd St. Gibbons Creek is to the North, and the Columbia River is within 0.25 miles to the Southwest of the facility.

Industrial operations began at the current Chempro Washougal site in 1978. Initially phenolic resins were manufactured, later defoamers and water treatment chemicals were also manufactured. The facility began recovery of waste oils in 1980 and began other hazardous waste management activities in 1981. The storage and treatment of hazardous wastes have continued since then. Chemical Processors, Inc. purchased majority ownership of the site in June 1985, and complete ownership in late 1987.

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Waste is stored in containers and tanks at the facility. Waste treatment occurs primarily in tanks. Wastes and waste residues that can not be treated at the facility are sent off-site for treatment or disposal. No waste is disposed of at the facility.

Waste storage in containers occurs in buildings 1, 2, and 3 (see Figure B1-2). Under the proposed Permit, building 4 will be added for additional waste storage. All hazardous waste containers are stored within buildings at the facility. Waste storage and treatment in tanks will be moved from the existing tank system to the proposed dangerous waste tank system (see Figure B1-2) under the proposed Permit. Additional waste treatment will occur in the process containment building and the organic contaminant degradation area.

Permitted container storage capacity will be 209,110 gallons. Permitted tank storage capacity will be 170,257 gallons, and tank treatment capacity will be 33,500 gallons per day. All storage and treatment areas for dangerous waste will have adequate secondary containment.

Chemp currently treats a large number different waste types, and will inue to receive a variety of s under the proposed Permit. The m c treatment processes, and thei sociated dangerous waste strea as desc bed in the Permit Appli ation, are as follows:

* Distillation for Recycling
  - solvents
  - strippers
  - thin
* Dangerous fuel blendi
  - waste solvent
  - waste oil
* Consolidation and compaction
  - paints
  - cements
  - sealers
  - resins
  - containerized materials
* Solidification and stabilization
  - solids and sludges
* Waste sorting and specialized handling
  - lab packs
  - household hazardous wastes
  - discarded chemical products

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HSWA DETERMINATION

Pursuant to the Hazardous and Solid Waste Amendments of 1984 (HSWA), EPA has made a determination that there have been releases to the soil and groundwater from past practices at the Chempro, Washougal facility which could present a potential threat to human health or the environment. On September 30, 1988, EPA issued Chempro a RCRA Section 3008(h) Order (Order) for this facility. This Order establishes the requirements for Chempro to investigate, characterize, and remediate soil and groundwater contamination.

At this time the draft permit includes corrective action conditions similar to, but more comprehensive than, requirements contained in the facility's RCRA Section 3008(h) Order. The permit, for example, will require interim measures to address and contain known areas of contamination in the ground water and soil. Schedules are provided in the permit for completion of studies leading to overall corrective action (or soil and ground water remediation) at the facility. Until the permit becomes effective, the facility will remain subject to the requirements of the Order.

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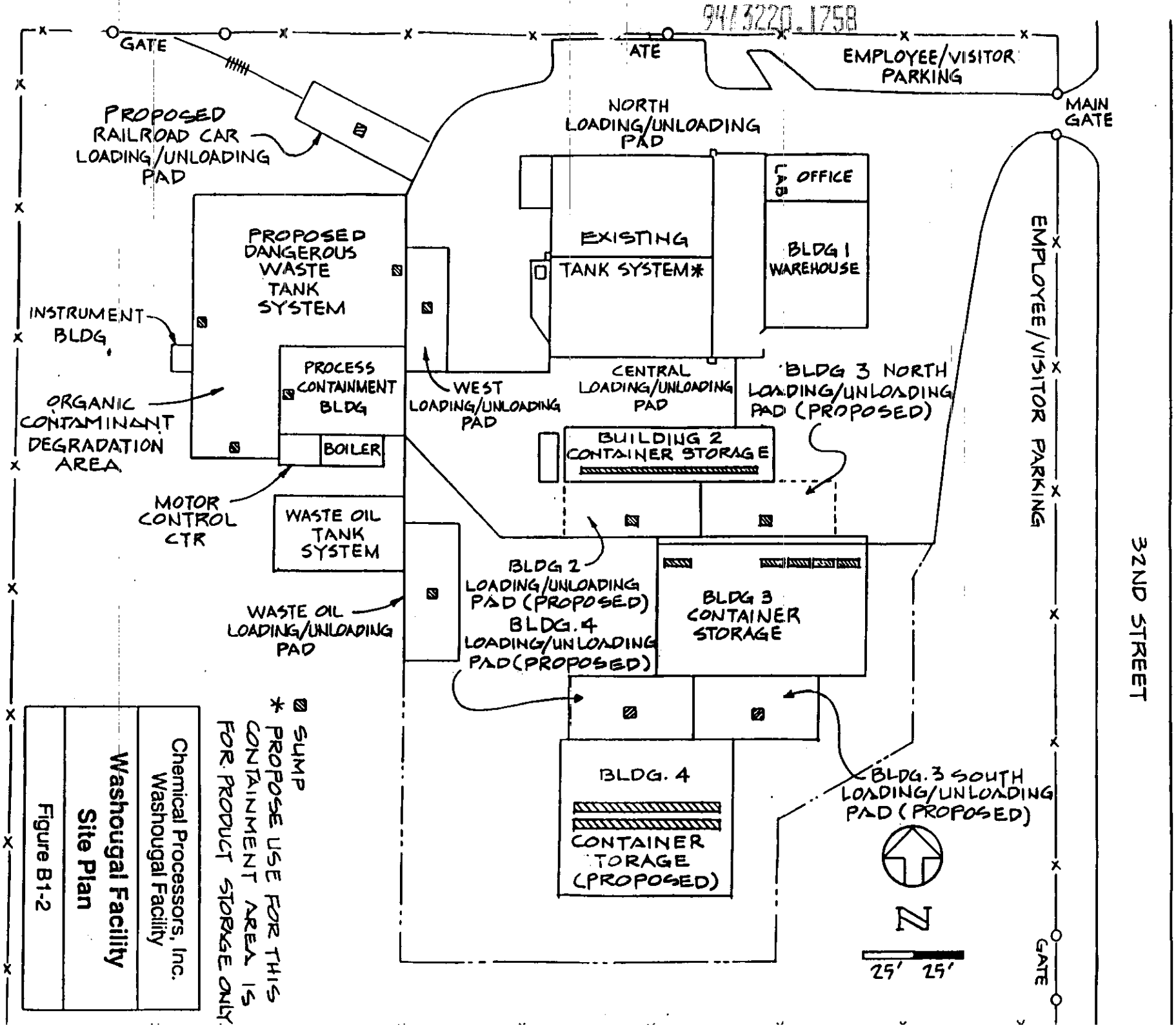

Chemical Processors, Inc.
Washougal Facility

Washougal Facility
Site Plan

Figure B1-2

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Draft Permit Review Summary Report

This document addresses comments on the February 7, 1992 version of the draft Burlington Environmental (formerly Chemical Processors) Inc. Washougal Facility Permit. Due to the fact that Burlington Environmental submitted substantial changes to the permit application during the comment period, the Department of Ecology (Ecology) has made several changes and additions to the permit so as to address inconsistencies and deficiencies in the permit application. Rationale for these revisions are provided in this document.

Comments on the draft operating permit were received from The Environmental Protection Agency (EPA), the City of Washougal, and Burlington Environmental. Each comment is summarized in this document and Ecology's response immediately follows.

Comments were received from Burlington Environmental on the corrective action portion of the draft permit (Part VII). As Washington State has not yet been delegated corrective action authority, this portion of the permit is issued under Federal authority by the EPA. Consequently, EPA has responded to all comments on this portion of the draft permit, these comments and responses begin on page 28. As ongoing Corrective Action has progressed since the issuance of the Draft Permit, EPA has also made some revisions to the Final Permit and its attachments to reflect these changes. These revisions are also identified on page 28.

All headings below refer to conditions in the Draft Permit, while citations in the responses refer to revised designations in the Final Permit.

The following revisions were made by the Department of Ecology.

General

- Permit Condition I.C.4. is added in order to specify the requirements for revisions to the permit and attachments subsequent to a modification.

- New Permit Condition III.B.2. is added in order to require flammable liquids to be stacked in accordance with the Uniform Fire Code until the Permittee receives written authorization from the City of Washougal Fire Department to do otherwise. Ecology reserves the right to require compliance with the UFC standards should the storage of these materials pose a threat to human health or the environment.

- Pursuant to WAC 173-303-283, new Permit Condition III.B.3. is added to require the Permittee to provide adequate container secondary containment for 20 minutes of fire control water as required by the Uniform Fire Code.

- New Permit Condition III.B.6. is added in order to require that DOT incompatibles will not be placed on the same loading/unloading pad.

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♦ Permit Condition III.B.13 has been added so as to require that containers in the PCB storage area are stored above the spill containment volume.

♦ The application is inconsistent about the requirement for corrosion coupons in tanks 4150, 4151, and 4403 through 4408. Consequently, Permit Condition IV.D.6. is added.

♦ Consistent with the June 15, 1992 additional information provided by Burlington, Permit Condition IV.D.7. is added to specify undertank leak detection requirements for all on-ground tanks at the facility.

♦ Permit Condition IV.D.8. is added to specify storage height limitations for tanks 4701 and 4801 consistent with the certifications for these tanks.

♦ As Table F2-6 in Attachment EE provides the same information as Table IV-1, Table IV-1 is deleted.

♦ Ecology believes that the permit must specify both closure and post-closure requirements for the existing interim status tank system. Consequently new Permit Conditions V.I.1., V.I.2., and V.I.3. are added. Note: Interim status closure of the existing tank system must address such things as soils and groundwater as well as structures and containment. With this intent, Permit Condition V.I.2.b. requires appropriate closure standards be met for "all structures and environmental media".

♦ The new processes added by Burlington in the most recent revisions to the permit application are not adequately described. Burlington's additional information, submitted June 15, 1992 in response to Ecology questions about these process, also does not provide adequate information. These process units cannot be permitted without further information. Consequently, Permit Condition V.J.1. was added to specifically disallow these activities.

♦ There is inconsistent information in the permit application on whether tanks 4403 and 4408 are vented to the carbon filters. Page D111 indicates they are but Figure D2-36 indicates they are not. Ecology interprets the permit application and Permit Condition V.A.2. to require that these tanks be vented to the carbon filters.

♦ There is inconsistent information in the permit application. The tank data sheets for tanks 4105 and 4131 incorrectly reference design drawing 10021, they should reference design drawing 30034. The tank data sheets have been amended by Ecology to reference the correct design drawing.

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♦ Corrosion and structural certifications for tanks 4120 and 4121 are included in the permit application. However, these tanks apparently are not planned for use at the facility. These certification statements have been removed from the permit application by Ecology.

♦ Several lines of text are missing from the top of page D82 of the permit application. The text can be understood if the missing information from the corresponding page of the previous version is inserted. The missing text, which reads "Lined tanks or steel tanks with a service rating of A or B will be provided with corrosion coupons" has been typed in to page D82 of the permit application by Ecology.

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List of Attachments

♦ The "Demonstration for Washougal Facility Part B Closure Analyses," submitted July 27, 1991, is included as Permit Attachment VV.

Attachment CC

♦ Appendix C-5 of the Permit Application is deleted from this attachment as Permit Condition II.A.6.c. replaces this information.

II.A.6.c.vi.

♦ This permit condition has been revised, "e.g." is changed to "i.e." This limits this profiling exclusion to only those items listed. Should the permittee wish to add other items permit modification procedures should be followed.

II.A.10.

♦ Permit Conditions II.A.10. and II.A.12. have been revised, and Permit Condition II.C.2.d.x. added, so as to clarify that sampling of container shipments must be random and that the Permittee must maintain written procedures which assure that such sampling is random.

II.C.2.b.

♦ The permit application does not specify that the annual inspection by a person familiar with the Uniform Fire Code will be documented as required by WAC 173-303-395(1)(d). Consequently, Permit Condition II.C.2.b.v. has been revised to require that these inspection results be kept for 5 years.

II.D.3.b.

♦ This draft condition is deleted. Recent federal guidance as well as Ecology's Toxic Cleanup Program are discouraging the exclusion of data points. The permittee should provide all data points.

III.B.11.

♦ Pe· it Condition III.B.15. is revised s as to remove the implicat n that only th· results of weekly inspections need to be recorded in the facility operating record.

IV.D.3. and IV.D.4.

♦ The specifications for the coating and inspection of the process containment building are not clear in the permit application. This building must be treated as a tank containment structure. Consequently, Permit Conditions IV.D.3. and IV.D.4. are revised and Permit Condition IV.D.5. is added.

V.A.1.

♦ This permit condit· n is revised in order to be consistent with permit modification procedures.

V.B.1., V.B.2. and V.B.3.

♦ Permit Condition V.B.1. is revised to incorporate the newly defined 100 year flood elevation as well as the City of Washougal's requirement that finished floor elevations be 1 foot above that level. Permit Condition V.B.2. is revised to incorporate the newly defined 500 year flood elevation. Draft Permit Condition V.B.3. is deleted.

V.D.6.

♦ This permit condition is revised in order to be consistent with new condition V.I.2.b. and also require clean up standards to assure protection of human health and the environment pursuant to WAC 173-303-145. Note: Ecology continues to believe that clean up criteria must address soils, waters, sediments, and air. However, as standards for these media are not explicitly defined in Section II.D., as referenced by this condition, this condition will now require protective clean up standards be met for "all environmental media." Ecology believes complete removal of the released dangerous waste should occur if feasible and in no case should spilled material remain in environmental media above acceptable risk based levels (e.g., MTCA standards).

V.D.7.

♦ Ecology believes that spilled or released dangerous waste in secondary containment must be handled differently than precipitation. There must be clear requirements for inspection and removal from containment of spilled or released waste. Procedures described in the permit application operate on the assumption that materials in the sumps is uncontaminated unless there is evidence of a spill or leak. Some of the sumps are inside of buildings, and any material in these sumps must be assumed to be contaminated. Consequently, Permit Condition V.D.7. is revised.

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V.E.3.

- Permit Conditions V.E.3.a. and V.E.3.b. are revised to be consistent with revisions to Permit Conditions V.B.1. and V.B.2. Draft Permit Condition V.E.3.c. is deleted.

V.H.2.

- This permit condition is revised in order to clarify when a facility employee must be present.

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The following comments were submitted by EPA Region 10.

General Comment

* Comments from the Washington State Department of Ecology have been included in a RCRA permit application Notice of Deficiency (NOD) to Burlington Environmental's Kent facility (WAD991281767). Given the delays already foreseen for issuing the Washougal permit -- e.g., responding to public comments and addressing recent information submitted by the facility -- the Environmental Protection Agency (EPA) requests that the Department of Ecology modify the Waste Analysis Plan contained in the Washougal permit to reflect, and be consistent with, comments in the Kent NOD.

♦ Revisions to the Kent facility application, as a result of the most recent NOD, have not changed the waste analysis plan (WAP) significantly from that of the Washougal facility. In addition, the two facilities are dissimilar enough that incorporation of the Kent WAP into the Washougal permit might not be appropriate. Ecology recognizes that there is still room for improvement in these waste analysis plans However, Ecology has added additional requirements (imposed by permit conditions). Ecology believes these additional conditions improve the waste analysis procedures at the Washougal facility and that reference to the Kent facility WAP is not necessary.

I.B.2.

* Please add the requirements of 40 CFR 270.30(j)(2) and (1)(9) to this condition.

♦ Agreed, see revised Permit Condition I.B.2.

I.H.

* Both 40 CFR 270.40 and WAC 173-303-830(2) *require* modification or revocation and reissuance in the event of change of owner or operator, not "may require" as this condition currently states. Revise this condition so as to specify this requirement.

♦ Agreed, see revised Permit Condition I.H.

I.K.

* The citation in this permit condition should be WAC 173-303-810(15) not WAC 173-303-830(15).

♦ Agreed, see revised Permit Condition I.K.

II.A.6.b.

* The reference in this paragraph should be to II.A.6.a.ii., not II.A.7.a.ii.

♦ Agreed, see revised Permit Condition II.A.6.b.

II.A.6.b.iii.

* The reference in this paragraph should be to II.A.18.a.i., not II.A.14.a.i.

♦ Agreed, see revised Permit Condition II.A.6.b.iii.

II.F.3.

* For clarity, change "no less than 90 days after the Permit effective date" to "no *later* than 90 days..."

♦ Agreed, see revised Permit Condition II.F.3.

II.G.

* The permit application is not currently consistent with the requirements of 40 CFR 264.1033(h)(1), which require testing *daily* or when no greater than 20% of the carbon capacity is consumed. Additionally, the adsorber must be replaced when *any* breakthrough occurs.

♦ Agreed, see new Permit Condition II.G.2. and revised Permit Condition II.G.3. Draft Permit Condition II.G.4. is deleted.

V.D.2.

* The references in this condition should be to V.E. not V.F.

♦ Agreed, see revised Permit Condition V.D.2.

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The following comment was submitted by the City of Washougal.

General Comment

* Washougal has reviewed the Burlington Environmental Part "B" Permit and is very concerned with its potential effect on their current household hazardous waste program.

Washougal has been working in partnership with Burlington Environmental to operate an effective household hazardous waste program in relation to the city's curbside recycling program. Changing Burlington's program needlessly will most likely adversely effect its efficiency. This will mean increased disposal of hazardous material to our landfills.

As there are apparently no regulations currently in affect to require modifications to the Burlington Environmental program, we do not fully understand why the suggested changes have been written into this permit.

♦ Ecology does not believe that the requirements for management of household hazardous waste are needless. There is a potential for this facility to manage relatively large quantities of these wastes. It is Ecology's intent that they be managed similarly to fully regulated waste in order to protect human health and the environment. These requirements have been imposed in order for the Washougal facility to demonstrate a "net increase in protection to human health and the environment" as required by the Dangerous Waste Regulations, WAC 173-303-282.

Management of much household hazardous waste is funded by grants from Ecology. These grants require the waste to be handled in approved treatment, storage, and disposal facilities. These permit requirements are consistent with the intent of the waste management grants. In addition, the management required in the permit is similar to State guidelines for the management of moderate risk waste. Moderate risk waste facilities will need solid waste management permits. Assuring that some of the major permitting requirements are met in the dangerous waste facility permit is efficient and appropriate. Ecology does not believe that these requirements will adversely affect Burlington's ability to manage household hazardous waste.

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The following comments were submitted by Burlington Environmental Inc.

Introduction

* Ecology should revise the permit to acknowledge the change in the company name from Chemical Processors, Inc. to Burlington Environmental Inc.

♦ Agreed, wherever it appears, the name Chemical Processors or Chempro has been changed to Burlington Environmental.

List of Attachments

* Since Attachment NN is included as part of the Part B Permit, there is no need to include Appendix F-8 of Attachment KK, since it is a redundant document.

♦ Agreed, delete Appendix F-8 of Attachment KK from the list of Attachments.

Definitions

* To include all of the definitions in this section, Definition 1. should reference (a) through (k), rather than (a) through (j).

♦ Agreed, see revised Definition 1.

I.C.3.

* The final sentence of this permit condition is unnecessary and should be deleted. Discussions with Ecology Headquarters and Northwest region staff have clarified that it will not be necessary to use the permit modification process to address changes from design drawings to as-built drawings, as long as a record of the changes is kept at the facility for review by Ecology staff. Additionally, Permit Condition V.C.5.e. requires that as-built designs certified by a registered professional engineer be maintained at the facility as part of the construction record until closure and corrective action are complete and certified. Permit Condition V.C.6. also requires that a report that includes the certified as-built designs be submitted to the Department within 60 days after construction or a phase of construction is complete.

♦ Subsequent discussions between Burlington Environmental and Ecology have clarified the procedures for permit modifications. Permit modifications are required for all changes from specifications in the facility permit. This includes as-built changes from specified designs. The permit modification procedures are consistent with the requirements of Permit Conditions V.C.5. and V.C.6. No revision is necessary.

I.E.9.

* is permit condition makes no provisions for schedule dela nor does it set a reasonable time for the Department to sched its inspection of completed construction projects. This condi n also d es not define the specific features or items for whic che Department intends to inspect the new or modified port on of the facility. It is intended that tanks which cur ntly are in use at the Washougal facility will be relocated int the new tank system secondary containment. It is not clear whether these tanks will be included in the inspection noted in this permit condition, or if only the new secondary containment and piping will be inspected.

♦ Ecology cannot at this time provide a schedule by which the inspection required by this permit condition will be performed. Such a schedule will be dependent upon the availability of Department personnel at the time the Permittee indicates an intent to place waste into the new or modified unit. Additionally, WAC 173-303-810(14)(a) requires the inspection by the Department be completed before waste is stored in any new *or modified* portion of the facility. Consequently, all relocated tanks, including ancillary equipment, <u>are</u> subject to this inspection.

* This permit condition requires that the Permittee and a registered professional engineer sign a letter stating that the facility has been constructed in compliance with the Permit, and Permit Condition V.C.6. requires that a registered professional engineer sign a report that certifies that the facility has been constructed in compliance with the Permit. Because of the redundancy with other permit conditions and dangerous waste requirements Burlington requests that this condition be deleted. If it must remain, at a minimum, this permit condition should clarify the intent of requiring an inspection of a new or modified area prior to its use. The condition should at least specify what will be inspected and the type of inspection that is intended to be performed.

♦ Department personnel may inspect a facility for compliance with any and all aspects of the regulations and the permit. No further clarification is needed in this regard. Additionally, WAC 173-303-810(14)(a) stipulates the requirements of this permit condition and its inclusion in the permit is appropriate. However, Ecology recognizes that there is some redundancy and confusion in the draft permit conditions. See revised Permit Conditions I.E.9. and V.C.5.

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I.L.

* This permit condition should allow the maintenance of some documents at the facility corporate headquarters.

♦ All required documents must be readily accessible to Department personnel when inspecting the facility. Ecology has agreed that for Burlington facilities in Seattle, in the vicinity of the corporate headquarters, that some documents need not be maintained at the facility. This is not appropriate for the Washougal facility. No revision is necessary.

I.M.2.

* The waste minimization program certification is in Permit Condition I.M.1., not I.I.1.

♦ Agreed, see revised Permit Condition I.M.2.

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II.A.1.

* This permit condition recognizes that the Permittee may, in specific emergency situations, accept dangerous wastes generated by regulated generators without a State/EPA identification number, if prior written approval is obtained from the Agency or the Department. If such an emergency situation arises during hours when the Department or the Agency does not normally operate (e.g., weekends, holidays), there may be no means of obtaining written approval prior to acceptance of the waste. In cases where delay of waste acceptance may not be protective of human health or the environment, the Permittee should be allowed to notify the Department or the Agency of the emergency situation and to accept the waste at the facility without prior approval. Suggested language is provided.

♦ Agreed, see revised Permit Condition II.A.1.

* This condition should specify that it applies to regulated wastes only.

♦ While the term "regulated" waste is not entirely clear, Ecology interprets Burlington Environmental's concern to be that the draft permit condition limits the facility to only accepting small quantity generator waste and household hazardous waste which is defined in the Part A Application. This is not Ecology's intent. See revised Permit Condition II.A.1.

II.A.6.

* This permit condition should be revised in order to be consistent with language resulting from the settlement of the appeal of the Georgetown facility permit.

♦ Agreed, see revise Permit Condition II.A.6.

II.A.7.

* This permit condition should be revised in order to be consistent with language resulting from the settlement of the appeal of the Georgetown facility permit. The condition also should exclude waste received from legitimate household generators and non-regulated waste from the requirements of the condition. Suggested language is provided.

♦ Agreed, see revised Permit Condition II.A.7.

II.A.13.

* This permit condition should specify that it applies to representative samples of wastes, since subsequent aliquots may be used for bench-scale testing, etc. Suggested language is provided.

♦ The permit condition already clearly requires the specified analyses of only samples taken pursuant to Permit Conditions II.A.11., II.A.12., and II.A.18.b. Ecology believes that the suggested change would introduce a potentially confusing redundancy. No revision is necessary.

II.A.14.

* As written, this permit condition may be construed to require that solid phases of dangerous wastes be analyzed for PCBs. It should be clarified that <u>liquid</u> non-aqueous phases are to be analyzed.

♦ The Departments has concern that solid phases may contain PCBs and consequently intends that solid phases be analyzed for PCBs. No revision is necessary.

* This permit condition should specify that it applies to representative samples of wastes, since subsequent aliquots may be used for bench-scale testing, etc. Suggested language is provided.

♦ The permit condition already clearly requires the specified analyses of only samples taken pursuant to Permit Conditions II.A.11., II.A.12., and II.A.18.b. Ecology believes that the suggested change would introduce a potentially confusing redundancy. No revision is necessary.

II.A.18.c.

* The final sentence of this condition is confusing. The word <u>include</u> should be inserted as shown below.

♦ Agreed, see revised Permit Condition II.A.18.c.

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II.A.21

* This is the first of several conditions appearing in the Draft Permit that also appear in Section V.E. of the Draft Permit as requirements to demonstrate a net increase in protection under Washington's hazardous waste facility siting criteria. This permit condition is identical to condition V.E.1. These conditions should incorporate the other permit conditions by reference. This will clarify that the conditions have been included specifically to address the siting criteria of WAC 173-303-282. The cross-reference will also help avoid confusion if future modifications to the permit are made.

♦ Ecology agrees that it will be helpful to cross reference identical permit conditions. See revised Permit Conditions II.A.21. and V.E.1.

II.A.22.

* There is no regulatory basis for including this permit condition and it should be deleted. Household hazardous wastes (HHW) are managed and stored at the Washougal facility. However, the management and storage of HHW is not fully regulated by the Washington State dangerous waste regulations or the federal hazardous waste regulations.

♦ The requirements of this condition are necessary for the Washougal facility to demonstrate a net increase in protection to human health and the environment pursuant to WAC 173-303-282. In addition these requirements are consistent with State guidelines for moderate risk waste facilities. No revision is necessary.

* This permit condition is identical to Condition V.E.2. The comments to Permit Condition II.A.21 above should be considered.

♦ Agreed, these conditions are now mutually referenced, see revised Permit Conditions II.A.22. and V.E.2.

II.A.24.

* This permit condition should be amended to recognize that the City of Washougal Fire Department may amend the requirements of the standard Uniform Fire Code (UFC). Also, the most recent version of the UFC is the 1991 edition, and Section 80.310 is properly designated as Article 80.310. Suggested language is provided.

♦ Ecology recognizes that the City of Washougal Fire Chief will implement and enforce the Fire Code within his jurisdiction. However, Ecology reserves the right to require compliance with the UFC standards in the event that storage of water reactive materials should pose a threat to human health and the environment. See revised Permit Condition II.A.24.

II.C.2.

* As noted in the comment to Permit Condition I.L. above, this condition should be amended to allow for the maintenance of certain records at the Burlington corporate headquarters.

♦ As noted above, this is not appropriate for the Washougal facility. No revision necessary.

II.C.2.a.ix.

* This permit condition specifies certain documents relating to the waste analysis plan that must be maintained at the facility until closure and corrective action are complete and certified. The information specified in this condition (except for G. and H.) is generally required by WAC 173-303-810(11) for monitoring information, as included already in Permit Condition I.F.2. We are not aware of any requirements for the information specified in II.C.2.a.ix. to be kept in the facility operating record until closure and corrective action are complete and certified. The information listed in this permit condition is not specified as being required to be recorded or kept in the operating record by the dangerous waste regulations. Therefore, this condition should be deleted.

♦ WAC 173-303-380(1)(c) requires that records and results of waste analyses required by WAC 173-303-300 (general waste analysis) be maintained in the operating record until closure of the facility. While neither WAC 173-303-380 nor -300 specify what records and results are to be maintained, Ecology believes that the type of records required by WAC 173-303-810(11) for monitoring information are appropriate records to be maintained for waste analysis. Additionally, it is Ecology's understanding from both the permit application and conversations with Burlington personnel that the information required by this permit condition is already routinely recorded by Burlington. Consequently this permit condition is retained, but is revised somewhat for clarity. See revised Permit Condition II.C.2.a.ix.

II.C.2.a.xii.

* This permit condition should be clarified to allow facility construction records as hard copies or as CADD computer files to be kept at the Washougal facility.

♦ This permit condition does not currently prevent records from being maintained as CADD files. However, the facility must be able to provide hard copies of these records upon request by the Department or Agency.

II.C.2.b.vii.

* The word "cast is an error; it should be replaced with the word <u>case</u>.

♦ Agreed, see revised Permit Condition II.C.2.b.vii.

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II.D. General Comment

* In the NOD issued October 4, 1990 by Ecology for the Pier 91 facility Part B Application, the Department stated that "closure cost estimates must be based on off-site, as well as third party treatment." Burlington Environmental investigated the impact of Ecology's request. In a document submitted to Ecology January 31, 1991, Burlington Environmental asserted that the exclusive use of off-site treatment for final closure of waste management facilities with on-site treatment available presents an undue burden to those facilities and does not appear to provide a net increase in protection to human health or the environment. At Ecology's request, additional contingency costs have been added to the waste elimination scenarios and disposal of decontamination rinsate for the Washougal facility. However, Burlington Environmental continues to assert that, in accordance with guidance, its use of third-party labor rather than off-site treatment to estimate third-party costs for final closure should be considered acceptable. Therefore, the final permit should allow revision of closure cost estimates to delete off-site treatment costs when on-site treatment capabilities will be available at final closure.

♦ The comment is noted. However, Ecology's maintains that closure cost estimates cannot assume the availability of the facility at the time of closure. No revision is necessary.

II.D.6.

* This permit condition should be amended to include a new paragraph II.D.6.a.iii., in order to be consistent with the agreed settlement of the Georgetown facility permit appeal.

♦ Agreed, see revised Permit Condition II.D.6.

II.D.7.

* This permit condition should be amended in order to be consistent with the agreed settlement of the appeal of the Georgetown facility permit.

♦ Agreed, see revised Permit Condition II.D.7.

II.e.1.b.

* On February 5, 1992, Ecology proposed new spill reporting requirements pursuant to WAC 173-303-145. The intended date of adoption for these amendments is May 19, 1992. This permit condition should be amended to reflect the amend language for this regulation. Suggested language is provided.

♦ WAC 173-303-145 has been revised again (effective 8/6/92). Neither Burlington's suggested language nor the draft permit language is consistent with the current regulation. See revised Permit Condition II.E.1.

II.F.3.

* The Washougal Facility Part B Permit should be revised to be consistent with Agency policy communicated to Northwest Enviroservice, Inc. in item no. 361 of the NOD issued to that company on October 3, 1991. The policy outlined in NOD item no. 361 states that documentation of financial assurance for closure of proposed units is not required until shortly before the units are to receive the first shipment of dangerous waste, although the closure cost estimate must still include closure of all permitted units at their maximum capacity. This approach should apply to proposed units at the Washougal facility that will not be used for dangerous waste management until more than 90 days after the effective date of the final Part B Permit. Suggested language is provided.

♦ Agreed, see revised Permit Conditions II.F.1. and II.F.3.

II.G.1.

* As this permit condition notes, the Batch Kettle Still #2 is tank #4111, but it is not the thin film evaporator. The thin film evaporator has been removed from the permit application, and references to it should therefore be deleted from this permit condition.

♦ Agreed, see revised Permit Condition II.G.1.

II.I.1.

* It is not clear from this permit condition what the "activated carbon air emission units" referred to are. If this refers to the units required by 40 CFR 264 Subpart AA, then this permit condition is redundant with Permit Condition II.G.3. In that case this permit condition should be deleted.

If the units referenced are the carbon canisters to be used for venting tanks containing dangerous waste that is designated extremely hazardous waste (EHW) as required by Permit Condition V.A.2., then this permit condition is meaningless without additional information. Suggested language is provided.

♦ Ecology agrees that the intent of this condition in the draft permit is unclear. This condition has been revised to clearly deal with only those carbon units used for the Process Containment Building and tanks containing EHW. Section II.G. has also been revised to clearly deal with only Subpart AA process vents. See revised condition II.I.1.

III.A.1.

* The storage arrangements in Buildings 2 and 3 have been altered, changing the maximum storage capacities of each. To reflect the new storage arrangements and capacity limits in these buildings, this permit condition should be revised.

♦ Agreed, see revised Permit Condition III.A.1.

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III.A.2.

* The loading/unloading pads have been relocated and consolidated. To reflect the new use and locations of the pads, this permit condition should be revised.

♦ Agreed, see revised Permit Condition III.A.2.

III.B.2.

* To be consistent with WAC 173-303-630(5)(c), this permit condition should specify a minimum of thirty-inch aisle space to be maintained on loading/unloading pads.

♦ Agreed, see revised Permit Condition III.B.4.

III.B.6.b.

* This permit condition should be revised to recognize that equipment other than library ladders may serve the intended purpose. Suggested language is provided.

♦ Agreed, see revised Permit Condition III.B.9.b.

III.B.7.

* Burlington requests that this permit condition be made congruent to Permit Condition III.B.6. in the Georgetown Facility Final Part B Permit. The Georgetown facility permit restricts drums stored in secondary containment areas adjacent to incompatible storage areas to be stacked only two drums high if they are within 4.5 feet from the adjacent secondary containment area, unless a physical barrier is present. This permit condition (in the Draft Washougal Permit) would severely restrict the distance which a drum stack is allowed to be placed from the adjacent secondary containment. There is no regulatory basis for imposing separation between adjacent storage areas exceeding thirty inches, as specified in WAC 173-303-630(5)(c). There is no basis for dangerous waste container storage requirements to be arbitrarily different between facilities when the same issue is being addressed. This is particularly true when permit conditions exceed regulatory requirements. Suggested language is provided.

♦ Ecology agrees to revise this permit condition so as to be consistent with the requirements of Permit Condition III.B.6. in the Georgetown Facility Final Part B Permit. See revised Permit Condition III.B.10.

III.B.8.

* This permit condition should be revised to recognize that containers of dangerous waste should be allowed to be temporarily stored in process areas while they are being processed or awaiting processing. Suggested language is provided.

♦ Agreed, see revised Permit Condition III.B.11.

III.B.10.

* This permit condition is identical to Condition V.E.4. See comments to Permit ndition II.A.21 above.

♦ Agreed, these conditions are now mutually referenced, see revised Permit Conditions III.B.14. and V.E.4.

III.B.12.

* Revisions to the Part B Permit Application have resulted in modifications to the secondary containment systems in the container storage buildings. The required secondary containment capacities for Buildings 2 and 4, and for Building 3 with the exception of the PCB storage area are provided solely by sumps rather than by the bermed storage areas. This permit condition should recognize that the secondary containment systems in these container storage ares does not include the storage areas themselves. Suggested language is provided.

♦ The comment is noted. However, integrity of secondary containment is still a high priority. No revision is necessary in this regard.

* The language in the final sentence in this permit condition should be clarified. As stated, this condition could be construed to indicate that all sumps lined with stainless steel will be coated with chemical resistant coatings, which is unnecessary. Suggested language is provided.

♦ Agreed, see revised Permit Condition III.B.16.

III.B.13.

* Revisions to the Part B Permit Application have resulted in modifications to the secondary containment systems in the container storage buildings. The required secondary containment capacities for Buildings 2 and 4, and for Building 3 with the exception of the PCB storage area are provided solely by sumps rather than by the bermed storage areas. This permit condition should recognize that the secondary containment systems in these container storage ares does not include the storage areas themselves. Suggested language is provided.

♦ The comment is noted. However, adequate coating of all secondary containment surfaces is still necessary. No revision is necessary in this regard.

* The language in the condition is redundant with paragraph c. in requiring that the lining or coating be compatible with the stored dangerous waste. Therefore, III.B.13.c. should be deleted.

♦ Ecology agrees that the draft condition is redundant. See revised Permit Condition III.B.17.

9W3220.776

* This permit condition should be consistent with the requirements of WAC 173-303-630(7)(a)(i) which apply to dangerous waste container secondary containment systems: which specify that these systems be sufficiently impervious; and do not specify that the system will prevent migration of waste into the concrete. Suggested language is provided.

♦ Agreed, see revised Permit Condition III.B.17.

III.D.1.

* This permit condition is arbitrary, unreasonable, and exceeds regulatory authority. WAC 173-303-190(2) & (3) require generators to mark and label containers in accordance with Department of Transportation (DOT) requirements. The DOT requirements apply only to any dangerous waste before transporting off-site. There is no regulatory basis for these markings to be placed on containers by the receiving facility.

Generators are required to designate their dangerous waste completely and accurately. If a generator has knowledge that the state codes apply to a wastestream, that information may be required to be included on the shipping papers. However, requiring the receiving facility to mark containers with state-designated waste codes would require Burlington to alter a generator's designation of his waste.

Burlington accepts wastes from outside of Washington State that are not regulated as hazardous wastes, but may be designated by the Washington State dangerous waste codes. This permit condition would necessitate that out-of-state generators obtain an EPA I.D. number in order to continue to send these wastes to the Washougal facility. Suggested language is provided.

♦ Ecology interprets the permit application to state that all containers will be labeled in accordance with DOT and EPA requirement. The permit condition has been revised to eliminate the implication that this is solely the Permittee's responsibility. However, whether or not the generator has placed the appropriate labels on containers, it is the permittee's responsibility to ensure that all containers are appropriately labeled. See revised Permit Condition III.D.1.

III.D.2.e.

* This permit condition should be revised to indicate that the requirement applies to containers of dangerous waste. The condition should also refer to the container tracking number rather than the Permittee drum number. Suggested language is provided.

♦ Agreed, see revised Permit Condition III.D.2.e.

IV.A.1.

* The regulated tank list has been revised. This permit condition should be amended to reflect the new tank list.

♦ Agreed, see revised Permit Condition IV.A.1.

WA 7210 177

IV.B.3.

* This permit condition should be revised to allow a company employee, rather than just a facility employee, who is a registered engineer or a NACE Level II or Level III Certified Inspector to perform the more frequent visual inspections.

♦ Agreed, see revised Permit Condition IV.B.3.

IV.D.1.

* This permit condition is not clear in its intent. It could be construed to require decontamination of a tank whether its previous contents were incompatible or not. Suggested language is provided.

♦ Ecology does not believe that it is possible to interpret the condition as the commenter has suggested. The condition clearly restricts waste only from a tank system that has not been decontaminated and was previously used for the management of incompatible waste.

IV.D.3.

* See comments to Permit Condition III.B.12. above.

♦ See revised Permit Condition IV.D.3.

IV.D.4.

* The requirements of this permit condition are beyond the scope of the referenced regulations. WAC 173-303-640(4)(b)(i) requires that tank system secondary containment systems be designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system into the soil, groundwater, or surface water at any time during the use of the tank. WAC 173-303-640(4)(c)(i) further requires that tank system secondary containment systems be, at a minimum, constructed of or lined with materials that are compatible with the waste(s) to be placed in the tank system, and have sufficient thickness to prevent failure owing to pressure gradients, physical contact with the waste, the stress of daily operations, etc. This condition should be revised to be consistent with regulatory requirements, or the requirements should be incorporated by reference into the permit and this condition deleted.

♦ See revised Permit Condition IV.D.4.

V.A.1.

* A phone or telecommunications number by which the Permittee may notify the Department within 24 hours of emergency modification, and that is staffed 24 hours a day, should be specified in this permit condition.

♦ Ecology believes that as telephone numbers may change, specifying a number in the permit is not appropriate. However, the current 24 hour number for the Southwest Region is (206) 753-2353.

DW 3220.178

V.A.2.

* The catalytic oxidation unit is no longer proposed for use at this facility. Reference to this equipment should be deleted from this permit condition.

♦ Agreed, see revised Permit Condition V.A.2.

* This permit condition should be revised to be consistent with the language agreed to as a result of the Georgetown permit appeal negotiations. Suggested language is provided.

♦ Agreed, see revised Permit Condition V.A.2.

* Appendix F-8 of Attachment KK was submitted to meet the requirements of 40 CFR 264 Subparts AA and BB. These subparts of the regulation do not apply to tanks. In the context of this permit condition, the information in Appendix F-8 of Attachment KK is not applied correctly. There is no basis for applying these standards to tanks containing dangerous wastes. Further, since Permit Condition II.I. addresses monitoring, testing, repair, and recordkeeping associated with control of vapors from tanks containing extremely hazardous waste, this permit condition should be amended to delete the use of Appendix F-8 for these purposes. Finally, since the permit includes Attachment NN as part of the Part B Permit, there is no need to include Appendix F-8, since it is a redundant document. Suggested language is provided.

♦ Ecology agrees to delete references to Attachment F-8 in favor of Section II.I. of the permit. See revised Permit Condition V.A.2.

V.B.1.

* This permit condition is identical to Condition V.E.3.a. See comments to Permit Condition II.A.21. above.

♦ Agreed, these conditions are now mutually referenced, see revised Permit Conditions V.B.1., V.B.2. and V.E.3.

V.B.2.

* This permit condition is identical to Condition V.E.3.b. See comments to Permit Condition II.A.21. above.

♦ Agreed, these conditions are now mutually referenced, see revised Permit Conditions V.B.1., V.B.2. and V.E.3.

* Permit Conditions V.B.2.a. and V.E.3.b.i. require that Burlington present evidence that all existing and proposed dangerous waste management units are above the 500-year flood plain. Permit Conditions V.B.3. and V.E.3.c. specify how the 500-year flood plain elevation will be determined if Ecology and the City of Washougal have not approved of the elevation by the effective date of the permit. Subsequently, Burlington has submitted a study to Ecology which presents information indicating the elevation of the 500-year flood in the vicinity of the Washougal facility. This study was also submitted to the City of

Washougal Department of Public Works, and to the Federal Emergency Management Agency (FEMA) for review. Since Burlington has already submitted the information described in the permit condition, Ecology and the City of Washougal can evaluate the evidence for the elevation of the 500-year flood prior to the effective date of the permit. If the elevation presented in the study is approved, this permit condition and Permit Conditions V.B.3., V.E.3.b., and V.E.3.c. should be deleted.

♦ The flood plain elevations in the Steigerwald Lake Flood Plain Study submitted by Burlington Environmental will be considered valid for the purposes of this permit. Consequently, Draft Permit Conditions V.B.3. and V.E.3.c. are deleted. However, the current permit application does not provide adequate information for Ecology to determine the elevations of all existing and proposed waste management units. Consequently, the requirements of Permit Conditions V.B.2. and V.E.3.b. have not been satisfied and these conditions are retained.

WA 4220 3 780

V.B.3.

* This permit condition is identical to Condition V.E.3.c. See comments to Permit Condition II.A.21. above.

♦ Draft Permit Conditions V.B.3. and V.E.3.c. are deleted.

V.C. General Comment

* The construction schedule for the Washougal facility, originally submitted to Ecology April 15, 1991, was based on Ecology's estimation that the Washougal Facility Final Part B Permit would be issued in September 1991. Since the final permit has not yet been issued, Burlington's construction schedule has been adversely impacted.

Unless Ecology approves construction activity under interim status, construction of the new tank system cannot commence until the final Part B Permit is effective. Construction of the proposed tank system was based on meeting a regulatory compliance date. Meeting this compliance date is not currently possible because of delays in issuance of the final Part B Permit for the Washougal facility. A schedule has been developed for construction of the proposed tank system, including relocating or decommissioning existing tanks, that spans 24 months. A revised copy of the construction schedule is included with Burlington's comments on the draft Part B Permit.

♦ Comment noted, see revised Section V.C.

V.C.1.

* This permit condition requires that high level alarms be installed on existing tanks in the existing tank system and that these alarms be wired to an alarm panel within six months of the effective date of the permit. According to the construction schedule, dismantling the existing tank system, including relocation and decommissioning of tanks, will commence approximately six months after the start of construction of the tank system pad. This would indicate that all of the instrument and electrical power wiring, conduit, and the associated installation costs for the initial installation will be nonrecoverable during the transfer of the tank system. Burlington does not consider this to be operationally reasonable or realistic in light of the general comment above. Burlington requests that this permit condition be revised to indicate that the high-level alarms be installed on tanks as they are put into service in the new proposed tank system. Suggested language is provided.

♦ Agreed, see revised Permit Condition V.C.1. and Ecology's response to Burlington's comment on Permit Condition V.C.3. below.

94-4275-1784

V.C.2.

* Revisions to the Washougal Facility Part B Permit Application have resulted in revisions to the construction schedule. This permit condition should be revised to be consistent with the revised schedule.

♦ See revised Permit Condition V.C.2.

V.C.3.

* Revisions to the Washougal Facility Part B Permit Application have resulted in the elimination of the catalytic oxidation system. Reference to the construction of this unit should be deleted from this permit condition.

♦ Agreed, see revised Permit Condition V.C.2.

* Burlington is under a regulatory mandate [WAC 173-303-640(4)] to complete construction of the proposed tank system at the Washougal facility by May 11, 1993. The construction schedule for the Washougal facility was based on Ecology's estimation that the permit would be issued in September 1991. Since the final permit has not yet been issued, Burlington's construction schedule has been adversely impacted.

Until the final permit is effective, construction of the new tank system cannot commence. Because of the regulatory deadline, operation cannot continue in the existing tank system after May 11, 1993. Completion of the new tank system cannot be accomplished by this date unless alternative compliance dates are negotiated with the Agency or the Department. A construction schedule for the proposed tank system has been developed, based on the best design information currently available, which spans 24 months. This schedule does not consider additional delays caused by severely inclement weather, permit modification approvals, availability of subcontractors, or other unforeseen events.

In light of these factors, Burlington requests that Ecology base the compliance date for completion of the proposed tank system and compliance with WAC 173-303-640(4) on the effective date of the final Part B Permit for the Washougal facility. Suggested language is provided.

♦ Ecology agrees to base permit compliance for completion of the proposed tank system on time elapsed from the permit effective date. Consequently, Draft Permit Condition V.C.3. is deleted and the new tank system compliance schedules are now included in Permit Condition V.C.2. See revised Permit Condition V.C.2.

The date by which the existing interim status tank area must comply with WAC 173-303-640(4) cannot be extended through a permit condition. Consequently, as the situation currently stands, Burlington must cease treatment and storage in the existing tank system by May 11, 1993. Ecology is willing to meet with Burlington in order to discuss means by which Burlington may be able to continue operations in this area after that date.

V.C.4.

* Revisions to the Washougal Facility Part B Permit have resulted in revisions to the construction schedule. This permit condition should be revised to be congruent with the revised constructions schedule, which indicates a completion time of 120 months for the railroad car loading/unloading pad (a discretionary unit).

♦ Ecology believes that the permitted facility should be constructed as described in the permit application. Ecology believes that sixty months is ample time for construction of the railroad car loading/unloading pad. No revision is necessary.

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V.C.6.

* This is a new permit condition that has never been presented or discussed between Ecology and Burlington for the Washougal facility. This condition will create significant, unreasonable, and unnecessary delays and operational constraints to an already impacted and greatly condensed construction schedule. The condition would make meeting the present construction schedule impossible to meet since transition of operations from the existing tank system to the new tank system could not be accomplished in an orderly manner.

Completion of construction is not as clear cut as this permit condition seems to imply. In cases where parts of a project must be executed sequentially, this condition will cause major delays in completing the overall project. Also, formal "as-built" documentation, required by this condition to be in a "formal report" would not be produced until after start-up. To meet the requirements of this permit condition, Burlington will have to shut down operations in the facility and deinventory the entire tank system, relocate all equipment, than prepare a report which could take up to 60 days to complete, and wait for the Director to conduct an inspection of the new area before the facility could then begin to receive waste and the new area could be commissioned. This time delay is unacceptable from a business and a project management standpoint.

Additionally, this condition and Permit Condition I.E.9. are redundant, inconsistent, and vague. There is no definition of what a "formal report" is or what form it is expected to take. Burlington is not aware of any regulatory basis for requiring these two documents to be submitted, nor why duplicate documents are necessary. Finally, although these conditions stipulate that the Director must inform the Permittee within 15 days if he/she intends to inspect the new or modified areas, there are no limits on the amount of time that could pass before the actual inspection takes place.

♦ Ecology agrees that the requirements of Permit Condition V.C.6.b. were confusing in light of the requirements of Permit Condition I.E.9. Consequently, the requirement that the Permittee submit a report prior to storing or treating dangerous waste has been eliminated. However, Ecology still believes it is necessary that a report containing the specified material be provided in order to help verify compliance with the facility permit. Consequently, the requirement to submit the report is retained, and this document will be due within 60 days after construction. Additionally, as WAC 173-303-810(14)(a) stipulates the inspection requirements found in Permit Condition I.E.9., this condition is retained as well. However, both permit conditions have been revised for clarification and to eliminate any potential redundancies. See revised Permit Conditions I.E.9. and V.C.5.

V.D.1.

* The last sentence should specify that the limitation applies to Interim Status tank capacity. This condition should also clarify that completion of the items in Permit Conditions V.C.1. and V.C.3. only limits tank treatment and storage capacities, and that V.C.2. only limits container storage capacity. Suggested language is provided.

♦ Agreed, see revised Permit Condition V.D.1.

V.D.2.

* The references to Permit Condition V.F. seem to be in error. The condition should be revised to reference Permit Condition V.E.

♦ Agreed, see revised Permit Condition V.D.2.

FW4270.1784

V.D.3.

* This permit condition should be revised to specify that it applies to dangerous waste management units and processes.

♦ Because of the need to identify potential solid waste management units records of the locations of all facility process operations should be maintained. No revision is necessary.

V.D.5.

* This permit condition should be amended to be consistent with the Georgetown Permit Condition II.A.5., which allows the Department or Agency to request samples up to twice a year, and 12 samples per event.

♦ Agreed, see revised Permit Condition V.D.5.

V.D.7.

* This permit condition should be amended to specify that it applies to dangerous waste tank secondary containment systems.

♦ Ecology believes that timely removal of material from sumps is important for all waste management areas. See revised permit condition V.D.7.

V.D.10.

* While Burlington generally agrees with the intent of this permit condition, the terms should be clarified. Ecology should define, for the purposes of this condition, what is meant by "problems," "regarding design, construction, or maintenance," "threat," "discovery," etc. so that the requirements of the condition are not misconstrued.

♦ This draft condition has been deleted.

V.E.1.

* This permit condition is identical to Permit Condition II.A.21. See comments to that condition above.

♦ Agreed, these conditions are now mutually referenced, see revised Permit Conditions V.E.1. and II.A.21.

V.E.2.

* This permit condition is identical to Permit Condition II.A.22. See comments to that condition above.

♦ Agreed, these conditions are now mutually referenced, see revised Permit Conditions V.E.2. and II.A.22.

V.E.3.

* This permit condition is identical to Permit Conditions V.B.1., V.B.2., and V.B.3. See comments to these conditions above.

♦ Agreed, these conditions are now mutually referenced, and Draft Permit Condition V.B.3. is deleted. See revised Permit Conditions V.E.3., V.B.1., and V.B.3.

94320.1785

V.E.4.

* This permit condition is identical to Permit Condition III.B.10. See comments to that condition above.

♦ Agreed, these conditions are now mutually referenced, see revised Permit Conditions V.E.4. and III.B.11.

V.H.2.

* This permit condition should be revised to specify that it applies to dangerous waste transport vehicles that actually contain dangerous waste. Suggested language is provided.

♦ Ecology is concerned that empty vehicles, through careless driving, could also damage containerized waste stacked on the loading\unloading pads. No revision is necessary in this regard.

V.H.3.

* This permit condition is confusing as written, and should be clarified. Additionally, the condition should be revised to be consistent with Georgetown Facility Part B Permit Condition II.I.3., which allows for exceptions in cases of emergencies. Suggested language is provided.

During discussions with Ecology on the Georgetown Facility Part B Permit, it was clarified that this condition was not intended to limit forklifts or other container handling equipment on the loading/unloading pads. Burlington offers this comment to elucidate that this is still Ecology's intent.

♦ It is still Ecology's intent that this condition is not intended to limit forklifts or other similar container handling equipment on the loading/unloading pads. Consequently, the language specifying that this condition applies to vehicles used for the transport of dangerous waste "to or from the facility" is retained. Ecology agrees that the limit may be exceeded in the event of emergencies. See revised Permit Condition V.H.3.

RESPONSE TO PUBLIC COMMENTS (Section VII.)

NOTE: The draft Interim Measures and Phase II RFI workplans called for in Permit Conditions VII.A.2. and VII.D.2. were submitted in March 1992. These permit conditions have been revised accordingly. Conforming revisions were also made to Attachment SS (Schedule for completion of RFI and CMS) and Attachment TT (Schedule for completion of Interim Measures.

VII.A.2

Comment:

A time frame for the Agency to review and respond to submittals from the Permittee is not set here or elsewhere. Practical time frames should be established to prevent undue delays. This Permit condition should be revised to set reasonable time limits for the Agency to review the RFI Workplan. Time limits of sixty (60) days for report review and thirty (30) days for comment review by the Agency are suggested.

Response:

The agencies agree with BE that timely agency review of facility submittals is desirable, and usually in the best interests of all parties. At the time that BE submits reports or workplans to the agencies for review, it is entirely appropriate for BE to request that the agencies respond within a certain timeframe. The agencies would then consider the rationale provided for requesting certain response times, and attempt to meet reasonable requests. The agencies cannot include permit conditions, however, restricting its review time. Such restriction may act in certain cases to endanger human health or the environment.

VII.A.3

Comment:

Thirty days presents an unreasonably short amount of time to prepare a draft Phase 2 RFI Report considering the magnitude of the Phase II investigation, and the time it will take to compile and quality assure laboratory data. Ninety (90) days would be a reasonable time frame. This requirement should be revised to read:

"VII.A.3 Within ninety (90) days of acquisition of all Phase 2 RFI field and analytical data, the Permittee shall submit a draft Phase 2 RFI Report to the Agencies..."

Response:

BE's suggestion is acceptable to the agencies. The suggested wording will replace language presently contained in the draft permit, and Attachment SS will be revised.

VII.B.1.A(a)

Comment:

Sixty days is inadequate for the development of a corrective measures study (CMS) work plan considering the magnitude of the project. Burlington Environmental requests this time frame be extended to 90 days.

Response:

BE's suggestion is acceptable to the agencies. The suggested timeframe of ninety (90) days will replace the sixty day timeframe presently contained in the draft permit, and Attachment SS will be revised.

VII.B.1.A(c)

Comment:

The permit does not define what "completion" of the Phase II CMS will be considered to be. The requirements for this task should be defined in the permit. Also, the 30-day schedule for the completion of the Phase II CMS may be unreasonable depending on the required scope of the CMS activities. Burlington recommends that the Phase II CMS report be submitted within 90 days.

Response:

The agencies agree with BE that the permit does not define "completion." Attachment RR, however, provides the focus of the Phase 2 CMS, and it was the agencies' intent that the word "completion" refer simply to the end of all Phase 2 data-collecting and analysis activities. As the facility notes, Attachment SS in the draft permit presently requires that both the draft Phase 1 and Phase 2 CMS Reports be submitted "30 days after scheduled completion of work in the Workplan."

The agencies interpret the facility's comment to basically express a concern that enough time be allowed for completion and submittal of CMS Reports. The agencies will extend the "30 day" language to forty-five days (as proposed by BE in comments on Attachment SS). In addition, the facility is reminded that schedule extensions may be requested for these submittals (as provided in permit condition VII.M.). For clarity, the permi language will be changed to read:

'VII.B.1.b. (second paragraph) Within forty-five (45) days of completing Phase 1 activities described in the approved CMS Workplan and schedule, the Permittee shall submit a Phase 1 Report to the Agencies. The Report shall be prepared in accordance with criteria provided in Attachment RR, shall present the results of the analysis undertaken, and shall end by recommending a preferred measure or group of measures. The Agencies will review...'

'VII.B.1.c. (second paragraph) Within forty-five (45) days of completing Phase 2 activities described in the approved CMS Workplan and schedule, the Permittee shall submit a Phase 2 Report to the Agencies. The Report shall be prepared in accordance with criteria provided in Attachment RR, and will discuss the results of the Phase 2 CMS. The Report shall defend the selection of the specific preferred corrective measure, and conclude with an estimated timetable for remedy implementation...'

VII.B.2.

Comment:

As noted above, the deadline for the completion of a proposal for implementing specific corrective measures should be changed to 90 days instead of 60 days.

Response:

BE's suggestion is acceptable to the agencies. The suggested timeframe of ninety (90) days will replace the sixty day timeframe presently contained in the draft permit.

VII.D.2(c)

Comment:

This condition should be expanded to include other approved methods. These methods may consist of combinations of U.S. EPA-suggested practices such as auger and cable tool drilling. All drilling methods and well installation techniques will be subject to agency approval.

Response:

BE's suggestion is generally acceptable to the agencies. The permit condition and Attachment will be changed to read:

'VII.D.2.c. proposals for well construction, maintenance, and replacement in accordance with Attachment QQ;'

'Attachment QQ: (first paragraph) New and existing wells, operated for the purposes of this Permit, shall meet all applicable state and federal laws. In addition, the permittee shall specifically meet Requirements 1-7 below, or propose equivalent or superior methods for the Agencies' approval. Such substitution and approval will not require a permit modification. Moreover, minor deviations from the stated methods deemed necessary by the Permittee due to unforeseen events in the field shall not require permit modification. In this latter case, a notation describing and explaining the deviation must be placed in the facility's Operating Record.'

Attachment QQ, Requirement 4., will then end with the third paragraph (i.e., the fourth paragraph, which discusses equivalent or superior methods, will be deleted).

VII.D.2(f)

Comment:

The interim measures (IM) Monitoring Plan is included within the Draft IM Work Plan. The proposed monitoring plan is consistent with Attachment UU, with the exception of the sampling for parameters/constituents per Method 8280. There is no indication from the documented site history or current practices that dioxins are present. The routine sampling for dioxins represents a misappropriation of resources dedicated to correcting any past releases to the environment at the site. Therefore, this Permit condition should be deleted.

9117220.1789

Response:

The re[illegible]rement for dioxin/furan sampling and analysis was included in the dra[illegible]t permit because of detections of three compounds in [illegible]pendix IX sampling reported in the Phase 1 RFI Report. Although BE claims there is no documented evidence that these constituents were handled at the facility, the detections obtained conservatively suggest the possibility that past practices or releases from the site may have been the source of the contamination.

Because of the relatively low levels of dioxin/furan detections, and low risk associated with these detections, the permit language will be modified so that these analyses are not required "routinely." The Method 8280 constituents will therefore be removed from Table UU.1. Sampling for dioxins/furans must be undertaken annually, however and new requirements for these analyses will be included in VII.D.4.c.

VII.D.4(c)

Comment:

Based on extensive sampling, Burlington contends that the parameter list included in the Phase I RFI Report and proposed in the Draft Phase II RFI and the Draft IM Work Plan adequately characterizes the conditions at the site. The requirements for groundwater sampling including analysis for 40 CFR 264 Appendix IX constituents should be deleted from the Permit conditions.

Response:

The agencies have required the facility to perform yearly Appendix IX sampling on a selected well (or wells). BE has handled, and will continue to handle, a wide variety of hazardous wastes. It is possible that in the future other constituents not detected to date, as well as certain breakdown products not previously detected, will be present in contaminated groundwater at the site. The requirement is a conservative approach, intended to assure that all constituents of concern are brought to the attention of both the facility and the agencies. This information is vital to the proper management of the site, and to decision-making in the Corrective Action process. The permit condition, therefore, will not be deleted.

VII.D.5(b)

Comment:

Thirty days presents an unreasonably short amount of time to prepare a draft IMI Report considering the magnitude of the investigation, and the time it will take to compile and QA laboratory data. This permit condition should be revised to allow a minimum of 60 days for acquisition of all field and analytical data will be required to prepare a Draft IM Investigation report.

Response:

BE's suggestion is acceptable to the agencies. The suggested timeframe of sixty (60) days will replace the thirty day timeframe presently contained in the draft permit, and Attachment TT will be revised.

VII.D.5(c)

Comment:

Thirty days presents an unreasonably short amount of time to prepare an IMS Workplan considering the magnitude of the investigation. This permit condition should be revised to allow a minimum of 60 days for preparing the IMS Workplan or the proposal for implementing specific interim measures.

Response:

BE's suggestion is acceptable to the agencies. The suggested timeframe of sixty (60) days will replace the thirty day timeframe presently contained in the draft permit, and Attachment TT will be revised.

VII.D.5(e)

Comment:

Thirty days presents an unreasonably short amount of time to prepare a draft IMS Report and Implementation Workplan considering the magnitude of the investigation. This permit condition should be revised to allow a minimum of 60 days for preparing the Draft IMS Report and Implementation Work Plan.

Response:

BE's suggestion is acceptable to the agencies. The suggested timeframe of sixty (60) days will replace the thirty day timeframe presently contained in the draft permit, and Attachment TT will be revised.

Attachment PP:

Comment:

Pg. 1,2
Burlington suggests that the term "calculation" be replaced with "estimation" throughout Attachment PP (I.a.8), I.c.3), and I.c.4)). The term "calculation" implies a quantitative determination derived through a mathematical process, whereas "estimation" implies an approximation of extent and/or value. Due to inherent limitations involved in the monitoring of groundwater though the placement and sampling of wells, the term "estimation" is considered more appropriate.

0013220.192

Response:

The agencies are aware that the determinations of groundwater flow directions, contaminant movement directions, and hazardous constituent concentration profiles may be compromised by the quality and extent of the data obtained, and the veracity of any assumptions used during analysis. These determinations, therefore, may be fairly described as "estimations," or approximations. The agencies do not, however, agree that such determinations cannot be based on a quantitative process. All determinations should obviously be supported by appropriate measurement and sampling data.

BE's suggestion for new permit language is acceptable to the agencies. The suggested wording ('estimation') will replace language presently contained in the draft permit ("calculation").

Attachment QQ, 4.:

Comment:

This requires that well decommissioning requires "ample notice". This is vague. This condition should be revised to include a set time frame for notification, for example, fifteen (15) days.

Response:

BE's suggestion is generally acceptable to the agencies. Attachment QQ, Requirement 4. (first paragraph), will be changed to read:

'If any well must be decommissioned... At least fifteen (15) days prior to decommissioning, the Permittee shall give notice in writing to the Agencies, explaining the rationale for the decision.'

SW220.793

Attachment RR, page 1:

Comment:

This Attachment states that "The Work Plan shall propose and provide information to support, a set of Media Cleanup Standards for all hazardous constituents of concern identified in the RFI. The Standards must be based on:

a) ...EPA health-based action values...

b) The background levels of any constituents"

The health-based action values referenced are included in the proposed corrective action rule for solid waste management units (SWMUs) (55 FR 30798; July 27, 1990). The Attachment RR wording quoted above implies that the action levels will be used as cleanup standards. This is not the intended use of the action levels as outlined in the proposed regulations. Instead, the action levels are established to trigger a corrective measures study. That is, if an action level is exceeded, a CMS is triggered to determine what CM are needed, if any, and what the cleanup level should be.

The statement "Standards must be based on...background" is unclear and may be read that background will be the cleanup standard. This interpretation may be extremely conservative, does not allow for risk-based evaluation of the contaminant, and is contrary to the proposed corrective actions regulations for SWMUs. Additionally, the condition does not specify which definition of "background" will apply. MTCA defines "background" by two different definitions, and the dangerous

waste regulations define "background" by another definition that does not resemble the MTCA definitions.

The draft Permit text quoted above should be revised to define "background" for the purposes of this Permit condition. The Attachment should also be revised to state that background levels will be considered when developing cleanup standards and that standards will be based on the criteria listed in Attachment RR a) (excluding the action levels), c), and d).

Response:

The agencies agree with BE that the Subpart S Action Levels are intended to trigger CMS activities. Although Action Levels may be more conservative than approved Media Clean-up Standards, the approved Standards must be protective, and EPA considers clean-up concentrations assuming a 10^{-6} risk level to be appropriate benchmarks for establishing remedial goals. Although there will not be a strict presumption that the final clean-up will attain a 10^{-6} risk level, EPA (in the proposed Subpart S Rule, 55 FR 30798, 7/27/90) envisions this risk level as the "point of departure" for establishing remedial goals. The Action Levels, therefore, are used to establish initial clean-up values to which adjustments can be later made. Adjustments away from the Action Level (based on such site-specific factors as present and future land use, multiple contaminants, multiple exposure pathways, etc.) may be made in a more or less conservative direction.

The wording "standards must be based on..." was intended as simply a lead-in to the categories of standards presented. Language in the two paragraphs following these standards explains how the standards may be used in formulating site-specific Media Clean-up Standards.

BE has noted that there are various definitions of "background," depending on the regulatory program, and has requested that the permit define the term. For the purposes of the permit, the term background is used in the context of RCRA Corrective Action. RCRA Corrective Action is primarily focused on contamination resulting from solid waste management practices and releases. Background conditions in all media, therefore, are described by constituent concentrations which have not been affected by contamination resulting from any of the facility's (current or past) solid waste management practices and releases.

To meet BE's concerns, and for clarity, the second and third paragraphs of Attachment RR will be changed to read:

> 'The Workplan shall propose...According to the rationale described below, the Standards shall be based upon:...
>
> a) the Maximum..., or EPA health-based values (see...

b) the background levels of any constituents. To establish site-specific levels the Permittee must submit the analytical results from sampling activities, and a report supporting the Permittee's claim that these results represent true and legitimate background conditions and concentrations. The agencies will then review the information submitted and either determine the background concentrations or request that the Permittee, prior to a determination, submit additional information.

[c) and d) will be removed. Then,]

'If background levels are determined to be above MCLs and EPA health-based values, Clean-up Standards will be based on these background levels. If, on the other hand, background levels are below MCLs and EPA health-based values, Clean-up Standards for constituents of concern shall be based on either MCLs or EPA health-based values. In this latter case, the Permittee may, where appropriate, propose clean-up levels which are more or less conservative than these values according to established EPA Rules and guidance.

NOTE: (1) in proposing Clean-up Standards, the Permittee should consider all applicable federal, state, and local laws, including requirements established in the Washington State Model Toxics Control Act (MTCA);

(2) Clean-up Standards for hazardous constituents of concern identified in the RFI, or corrective action monitoring, for which there are no EPA health-based values available will be established from background levels;

(3) the Permittee is not required to perform a site-specific background determination. In the absence of such a determination the agencies will presume the background concentrations of all hazardous constituents to be their respective media-specific SW-846 Practical Quantitation Limits (PQLs).'

WA3210.795

Attachment SS:

Comment:

Draft Phase II Report
This Attachment should be revised to be consistent with the comments on Permit condition VII.A.3 above. The Attachment should read "90 days after acquisition of all Phase II RFI field and analytical data".

Draft CMS Phase I Report
This Attachment should be revised to be consistent with the comments on Permit condition VII.B.1.A(a) above. The Attachment should read "45 days" rather than "30 days".

Draft CMS Phase II Report
This Attachment should be revised to be consistent with the comments on Permit condition VII.A.3 above. The Attachment should read "45 days" rather than "30 days".

Response:

BE's suggestions are acceptable to the agencies. The suggested timeframes will replace the timeframes presently contained in the draft permit schedule.

Attachment TT:

Comment:

Draft IM Investigation Report
This Attachment should be revised to be consistent with the comments on Permit condition VII.D.5(b) above. The Attachment should read "60 days after acquisition of all IMI field and analytical data".

Draft IM Study Work Plan
This Attachment should be revised to be consistent with the comments on Permit condition VII.D.5.(c) above. The Attachment should read "60 days after the approval of the IM Investigation Report."

Draft IM Study Report and Implementation Work Plan
This Attachment should be revised to be consistent with the comments on Permit condition VII.D.5.(e) above. The Attachment should read "60 days after acquisition of all IMS field and analytical data."

94-320-796

Response:

BE's suggestions are generally acceptable to the agencies. The suggested timeframes will replace the timeframes presently contained in the draft permit schedule. The draft IMS Report and Implementation Workplan shall be due 60 days after completion of work in the IMS workplan.

Attachment UU:

Comment:

Water-Level Elevations
Coupled water-level measurements, made at both high and low tide, are of limited value since runoff-induced river level changes have a much greater effect on lower aquifer water levels than tides do. These changes in river levels are, for all practical purposes, unpredictable.

This Attachment should be revised to read as follows:

"Permittee shall obtain all water-level elevation measurements within a single 24-hour period. Concurrent with water-level measurements, permittee will continuously record Columbia River water levels and barometric pressure."

Response:

The agencies' intent with this and other permit conditions is to require BE to determine flow directions in groundwater underlying the Washougal facility. There are various influences on those flow directions, and for the purposes of assessing how well interim measures are containing contamination and where groundwater flow will carry contaminants of concern, the facility should undertake measures to correlate monitoring well water levels with these influences.

For clarity, this section of Attachment UU will be revised to read:

'All water level elevation measurements taken pursuant to requirements in the Permit shall be obtained prior to purging of the wells, and at least within a 24 hour period. Such measurements shall be used by the Permittee to determine groundwater flow directions. In order to account for tidal and/or river level fluctuations which may influence groundwater flow directions, the Permittee shall either couple sampling events such that measurements at each well are taken both at high tide (± 1/2 hour) and low tide (± 1/2 hour), or propose an alternative scheme which addresses this concern.'

Attachment VV, Table VV.1:

Comment:

The parameters/constituents per Method 8280 should be eliminated from the proposed indicator parameter list. There is no indication from the documented site history or current activities that dioxin are present. The routine sampling for dioxin represents a misappropriation of resources dedicated to correcting past releases to the environment at the site.

Response:

The draft permit does not contain an Attachment VV. Attachment UU, however, contains Table 1, and the agencies interpret the comment to refer to this table. Table 1 will be revised, for the reasons provided in the response to comments on permit condition VII.D.2.f.

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04/11/94

HANFORD SITE COMMENTS ON THE SECOND DRAFT OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF DANGEROUS WASTE FOR THE HANFORD FACILITY

ATTACHMENT 16

BURLINGTON ENVIRONMENTAL, INC. (PIER 91 FACILITY) PERMIT

0027220.799

PERMIT
FOR THE STORAGE AND TREATMENT
OF DANGEROUS WASTE

Washington State
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600
Telephone: (206) 459-6000

WA 4270 890

Issued in accordance with the applicable provisions of the Hazardous Waste Management Act, Chapter 70.105 RCW, and the regulations promulgated thereunder in Chapter 173-303 WAC.

ISSUED TO:

Burlington Environmental, Inc.
(Operator, Pier 91 Facility)
2203 Airport Way So., Suite 400
Seattle, Washington 98134
Telephone: (206) 223-0500
EPA ID No. WAD 0008129917

and

The Port of Seattle (Owner)
P.O. Box 1209
Pier 66
Seattle, WA 98111
Telephone: (206) 728-3000

This Permit is effective as of August 26, 1992 and shall remain in effect until August 26, 2002 unless revoked and reissued, modified, or terminated under WAC 173-303-830(3) and (5) or continued in accordance with WAC 173-303-806(7).

ISSUED BY: WASHINGTON DEPARTMENT OF ECOLOGY

Cindy J. Gilder

Cindy J. Gilder, Section Head
Hazardous Waste Permits
Department of Ecology

Date 7-22-92

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WA 022 818

INTRODUCTION

PERMITTEE: BURLINGTON ENVIRONMENTAL, INC.
EPA/STATE IDENTIFICATION NUMBER: WAD000812917

Pursuant to:

> Chapter 70.105 RCW, the Hazardous Waste Management Act of 1976, as amended, and regulations codified in Washington Administrative Code (WAC) 173-303.

A Permit is issued to Burlington Environmental, Inc. as operator (hereafter called the Permittee), and The Port of Seattle as owner, to operate a dangerous waste storage and treatment facility (Pier 91) located at 2001 W. Garfield St., Seattle, Washington at latitude 47 degrees 38 minutes 08 seconds North and longitude 122 degrees 22 minutes 50 seconds West.

The Permittee must comply with all terms and conditions set forth in this Permit and in Attachments AA through MM. When this Permit and the above attachments conflict, the wording of the Permit will prevail. The Permittee must also comply with all applicable state regulations, including Chapter 173-303 WAC (Attachment KK) and as specified in the Permit.

Applicable state and federal regulations are those which are in effect on the date of final administrative action on this Permit and any self implementing statutory provisions and related regulations which, according to the requirements of RCRA (as amended), or state law, are automatically applicable to the Permittee's dangerous waste management activities, notwithstanding the conditions of this Permit.

This Permit is based upon the administrative record, as required by WAC 173-303-840. The Permittee's failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time, shall be grounds for the termination or modification of this Permit and/or initiation of an enforcement action, including criminal proceedings. The Permittee must inform the Director of any deviation from permit conditions or changes from information provided in the Part B permit application. In particular, the Permittee shall inform the Director of any proposed changes that might affect the ability of the Permittee to comply with applicable regulations and permit conditions, or which may alter any of the conditions of the Permit in any way.

The Department shall enforce all conditions of this Permit for which the State of Washington is authorized and all conditions which are

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designated in this Permit as state requirements only. Any challenges of any permit condition that concern state requirements, (i.e., conditions of this Permit for which the State of Washington received final authorization or conditions which are designated in the Permit as state requirements only) shall be appealed to the Department in accordance with WAC 173-303-845. In the event that the Department does not maintain final authorization, the Environmental Protection Agency will enforce all permit conditions except those which are state-only requirements.

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LIST OF ATTACHMENTS

The following listed documents are hereby incorporated, in their entirety, by reference into this Permit. Some of the documents are excerpts from the Permittee's Dangerous Waste Permit Application (most recently amended April 1992). The Department has, as deemed necessary, modified specific language in the attachments. These modifications are described in the permit conditions (Parts I through VI), and thereby supersede the language of the attachment. These incorporated attachments are enforceable conditions of this Permit, as modified by the specific permit condition.

Attachment AA	Description of the Final Status Operational Areas and General Provisions (Section B of the Permit Application)
Attachment BB	Part A Dangerous Waste Permit Application, to be effective upon issuance of the Permit (Section A of the Permit Application)
Attachment CC	Waste Analysis Plan (Sections C2.0 through C.2.8.2, inclusive, and Appendices C-2 through C-4, inclusive, of the Permit Application)
Attachment DD	Security Procedures and Equipment (Sections F1.0 through F1.2, inclusive, of the Permit Application)
Attachment EE	Inspection Schedule (Sections F2.0 through F2.2.3, inclusive, and Appendices F-1 through F-8, inclusive, of the Permit Application)
Attachment FF	Personnel Training Plan (Section H and Appendix H-1 of the Permit Application)
Attachment GG	Contingency Plan (Section G and Appendices G-1 through G-4, inclusive, of the Permit Application)
Attachment HH	Closure Plan (Section I and Appendices I-3 through I-6, inclusive, of the Permit Application)
Attachment II	Dangerous Waste Tanks (Sections D1.0 through D1.8.2, inclusive, and Appendices D-1 through D-10, inclusive, of the Permit Application)

LIST OF ATTACHMENTS (CONTINUED)

Attachment JJ	Preparedness and Prevention Measures (Sections F3.0 through F5.2, inclusive, of the Permit Application)
Attachment KK	Chapter 173-303 WAC (April 1991)
Attachment LL	List of Analytes for the Pier 91 Part B Closure Plan
Attachment MM	Description of the Permittee's Treatment and Storage Area

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DEFINITIONS

For purposes of this Permit, the following definitions shall apply:

a. The term "**Permit**" shall mean the Permit issued by the Washington State Department of Ecology, pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC.

b. The term "**Director**" shall mean the Director of the Washington State Department of Ecology or a designated representative. The Section Head (with the address as specified on page one of this Permit) is a duly authorized and designated representative of the Director for purposes of this Permit.

c. The term "**Department**" shall mean the Washington State Department of Ecology, (with the address as specified on page one of this Permit).

d. The terms "**facility**" or "**site**" shall mean that property leased from the Port of Seattle by the Permittee as well as all contiguous property owned by the Port of Seattle, including structures, appurtenances, and improvements.

e. The term "**Permittee's treatment and storage area**" shall mean that portion of the facility defined in Attachment MM.

f. The term "**new tank system**" is defined to mean tank systems which have never been used for dangerous waste management at this site before, existing tanks planned for conversion to manage regulated waste, existing tanks being relocated under this Permit, and tanks out of active service for more than 1 year which are proposed for regulated waste usage.

g. The term "**release**" shall mean any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

h. All definitions contained in WAC 173-303-040 are hereby incorporated, in their entirety, by reference into this Permit. Any of the definitions used above, (a) through (g), shall supersede any definition of the same term given in WAC 173-303-040. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

PART I - ST DARD CONDITIONS

I.A. EFFECT OF PI T

The Permittee is authorized to store and treat dangerous waste in accordance with the conditions of this Permit and in accordance with the applicable provisions of Chapter 173-303 WAC. Any storage or treatment of dangerous waste by the Permittee at this facility that is not authorized by this Permit or Chapter 173-303 WAC and for which a permit is required by Chapter 173-303 WAC, is prohibited. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege. Issuance of this Permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

DW 4225.607

I.B. GENERAL PERMIT CONDITIONS

I.B.1. The general permit conditions under WAC 173-303-810, final facility standards under WAC 173-303-600, and, when the Permittee is a generator, generator requirements under WAC 173-303-170, are incorporated by reference into this Permit and must be adhered to by the Permittee.

I.B.2. The list of attachments on Pages 5 and 6 are incorporated by reference into this Permit. The Permittee's operations must be in accordance to the contents of the attachments and this Permit.

I.C. PERMIT ACTIONS

I.C.1 This Permit may be modified, revoked and reissued, or terminated for cause, as specified in WAC 173-303-830(3). The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition.

I.C.2. This Permit may be renewed as specifi d in WAC 173-303-810(3) and Permit Condition I.E.2. Review of any application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

I.C.3. Permit modification at the request of the Permittee will be done according to the three tiered modification system, WAC 173-303-830(4) and Department guidance documents. This includes any modification from design drawings to as-builts.

I.D. SEVERABILITY

I.D.1. The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision which forms the basis for any condition of this Permit does not affect the validity of any other state or federal statutory or regulatory basis for said condition.

I.D.2. In the event that a condition of this Permit is stayed for any reason, the Permittee shall continue to comply with the related applicable and relevant interim status standards in WAC 173-303-400 until final resolution of the stayed condition unless the Director determines compliance with the related applicable and relevant interim status standards would be technologically incompatible with compliance with other conditions of this Permit which have not been stayed.

I.E. DUTIES AND REQUIREMENTS

I.E.1. The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency Permit. Any Permit noncompliance, other than noncompliance authorized by an emergency Permit, constitutes a violation of Chapter 70.105 RCW and is grounds for revocation and reissuance, or modification; or for denial of a Permit renewal application.

I.E.2. If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a Permit at least 180 days prior to Permit expiration.

I.E.3. It shall not be defense for the Permittee, in an enforcement action that it would have been necessary, to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.

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I.E.4. In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health or the environment.

I.E.5. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit.

I.E.6. The Permittee shall furnish to the Director, within a reasonable time, any relevant information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or termination this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit.

I.E.7. Pursuant to WAC 173-303-810(10), the Permittee shall allow the Director, or authorized representatives, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

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c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

d. Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by Chapter 70.105 RCW, any substances or parameters at any location.

I.E.8. The Permittee may not commence treatment or storage of dangerous waste in any new or modified portion of the facility until the Permittee has submitted to the Director, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and

a. The Director, or his authorized representative, has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the Permit; or

b. The Director has either waived the inspection or has not within 15 days notified the Permittee of his intent to inspect.

I.E.9. Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Director, the Permittee shall promptly submit such facts or information.

I.F. MONITORING AND RECORDS

I.F.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from WAC 173-303-110 or an equivalent method approved by the Director. Laboratory methods must be those specified in WAC 173-303-110(3)(a) or an equivalent method as specified in Attachment CC.

I.F.2. Pursuant to WAC 173-303-810(11), records of monitoring information shall specify.

a. The dates, exact place, and times of sampling or measurements;

b. The individuals who performed the sampling or measurements;

c. The dates analyses were performed;

e. The individuals who performed the analyses;

f. The analytical techniques or methods used; and

g. The results of such analyses.

I.G. COMPLIANCE NOT CONSTITUTING DEFENSE

Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under any state law governing protection of public health or the environment.

I.H. TRANSFER OF PERMITS

This Permit is not transferable to any person, except after notice to the Director. The Director may require modification or revocation and reissuance of the Permit pursuant to WAC 173-303-830(2). Before transferring ownership or operation of any portion of the Permittee's treatment and storage area prior to final closure of that area, the Permittee shall notify the new owner or operator in writing of the requirements of this Permit.

I.I. PERMIT EXPIRATION AND CONTINUATION

This Permit and all conditions herein will remain in effect beyond the Permit's expiration date until final permit determination if the Permittee has submitted a timely, complete application (under WAC 173-303-806), and, through no fault of the Permittee, the Director has not made a final permit determination as set forth in WAC 173-303-840. This Permit may be modified or revoked and reissued as necessary, in accordance with WAC 173-303-830(3).

I.J. REPORTS, NOTIFICATIONS AND SUBMISSIONS

All reports, notifications or other submissions which are required by this Permit to be sent or given to the Director should be sent certified mail or given to:

Supervisor, Hazardous Waste Section
Department of Ecology
Northwest Regional Office
3190 160th Ave S.E.
Bellevue, Washington 98008-5452
Telephone: (206) 649-7000

This phone number and address may change.

I.K. CONFIDENTIAL INFORMATION

Any information submitted by the Permittee to the Director may be claimed as confidential by the Permittee in accordance with applicable provisions of WAC 173-303-830(15).

I.L. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

Current copies of the following documents, as amended, revised, and modified, shall be maintained at the facility. Where noted in this Permit, documentation at the facility may be made by reference to records at the Burlington Environmental corporate office, which is located at 2203 Airport Way South, Seattle, WA. These documents must be maintained until closure is complete and certified by an independent, registered professional engineer, unless a lesser time is specified in the Permit.

1. The Permit and all Attachments;

2. The Part B Permit application; and

3. The facility operating record.

PART II - GENERAL CONDITIONS

II.A. GENERAL WASTE MANAGEMENT

II.A.1. The Permittee is authorized to receive the dangerous waste specified in Attachment BB from sources off-site, except that the Permittee may not accept ignitable wastes with a flash point of less than 100°F. Dangerous wastes shall only be received from regulated generators with a valid State/EPA identification number, conditionally exempt small quantity generators, and legitimate household waste generators. In specific emergency situations, the Permittee may also accept dangerous wastes generated by regulated generators without a State/EPA identification number. Such emergency acceptance shall require prior written authorization, which may be via telecommunications (i.e., facsmile), from the Department. These wastes shall be managed only under the conditions of this Permit.

II.A.2. The Permittee must inform the generator in writing that he has the appropriate permits for and will accept the dangerous waste the generator is shipping as required by WAC 173-303-290(3). The Permittee must keep a copy of this written notice as part of the operating record (this may be by reference to records at the corporate office) until final closure of the facility is complete and certified.

II.A.3. The Permittee shall notify the Director in writing at least four weeks in advance of the date the Permittee expects to receive dangerous waste from a foreign source, as required by WAC 173-303-290(1). Notice of subsequent shipments of the same waste from the same foreign source in the same calendar year is not required.

II.A.4. New test methods shall be used immediately upon the effective date of the State laws or regulations which mandate the use of the test methods.

II.A.5. Dangerous waste brought on-site cannot leave the unloading area until the manifest number has been recorded on logging and tracking forms.

II.A.6. Each regulated generator's dangerous waste stream which is received by the Permittee more than twice a year shall undergo annual full characterization. Full characterization is defined as completing a waste profile sheet which shall identify the dangerous constituents and characteristics necessary for proper designation and management of the waste stream, along with accounting for 100% of the material (e.g., 30% oil, 70% water).

a. Except as specified in b. below, full characterization shall include or consist of:

i. Existing published or documented data on the dangerous waste or on waste generated from similar processes. The use of existing published or documented data shall include confirmation by the generator that the process generating the dangerous waste has not significantly changed; or

ii. Laboratory analysis of the waste stream consisting of chemical, physical, and/or biological analyses using methods which are accepted by the Department. Analysis shall be performed by a laboratory accredited by Washington State under Chapter 173-50 WAC. Wastes shall be analyzed for all hazardous constituents except those which can be demonstrated not to be present in any of that generator's waste streams, or those which do not change the proper designation and management of the waste stream.

b. In the following circumstances a waste stream shall undergo full characterization consisting solely of laboratory analyses meeting the requirements of II.A.6.a.ii. above, and knowledge as necessary to designate a waste under WAC 173-303-080, Dangerous Waste Lists. Such characterization shall occur prior to receipt of the next shipment of that waste stream.

i. The Permittee has been notified, or has reason to believe, that the process or operation generating the dangerous waste has significantly changed;

ii. There is a discrepancy between a generator's waste designation, as provided by the generator's waste profile and the Permittee's waste designation, as determined by the screening analysis and any further waste analysis;

iii. The first time a waste undergoes full characterization. This shall include but not be limited to all waste streams for which waste profiles are amended, such as pursuant to Permit Condition II.A.16.a.i.; and

iv. No more than five years from the last full characterization by laboratory analysis.

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II.A.7. Dangerous wastes with values below 5,000 Btu/lb as generated, both received from off-site and generated on-site, shall not be incorporated into dangerous waste fuels. This requirement is consistent with the guidance regarding legitimate recycling of low-Btu wastes, as stated in the March 16, 1983 Federal Register (48FR11157) and subsequent federal updates.

a. Dangerous wastes are exempt from the requirements of this permit condition if:

i. They are received from conditionally exempt small quantity generators;

ii. It can be demonstrated that the dangerous waste is burned solely as an ingredient; or

iii. The final destination of the dangerous waste fuel is an industrial boiler or furnace that has achieved certification of compliance with final permit standards or interim emission standards under 40 CFR 266.102 or 266.103.

b. Phase separation of wastes constitutes treatment. The outputs of such treatment are thus wastes generated on-site and subject to the requirements of this condition.

II.A.8. For all dangerous wastes which are subject to the 5,000 Btu/lb minimum requirement of Permit Condition II.A.7. and which are mixed with different waste streams and/or wastes from different generators for the purpose of bulk transport to the facility, the Permittee shall obtain representative samples of the waste, as generated, prior to bulking. Such samples shall be subject to all appropriate analyses pursuant to Attachment CC and Permit Condition II.A.10. The Permittee is not required to sample wastes prior to bulking by the generator.

II.A.9. For all dangerous wastes which are subject to the 5,000 Btu/lb minimum requirement of Permit Condition II.A.7. and which are generated on-site, the Permittee shall obtain representative samples. Such samples shall be subject to analysis requirements of Permit Condition II.A.10.

II.A.10. For all materials listed under a. below that are also subject to Permit Condition II.A.7., the Permittee shall determine the Btu value. Except as noted in b. below, the Permittee shall determine the Btu value of representative samples using Method D-2105 of the 1986 Annual Book of ASTM Standards.

a. Materials subject to the requirements of this permit condition shall be:

i. All incoming bulk shipments of dangerous waste;

ii. All dangerous waste generated on-site; and

iii. All dangerous waste sampled pursuant to Permit Condition II.A.8.

b. The Permittee shall not be required to determine the Btu value of waste samples using method D-2105 under the following circumstances:

i. The Permittee can demonstrate that the waste stream is an unused commercial product with a known heat content above 5,000 Btu/lb; or

ii. The Permittee can demonstrate:

A. The waste is a mixture of which all components are known; and

B. Existing published or documented data shows that all components of the waste have a known heat content greater than 5,000 Btu/lb; or

iii. The most recent waste profile of the waste stream indicates a value of at least 7500 Btu/lb, and the waste received matches the profile.

A. For the purposes of this condition, in order to demonstrate that a waste matches the profile, the following tests as described in Attachment CC shall always be performed:

I. Physical description;

II. Ignitability screen;

III. Specific gravity (Density); and

IV. Chlorinated solvent screen.

B. Should the results of any of the tests required in A. above disagree with the waste profile, the discrepancy must be rectified pursuant to Permit Condition II.A.16. and the Permittee shall determine the Btu value of the waste using method D-2105 prior to incorporating it into dangerous waste fuel.

II.A.11. Each incoming shipment of dangerous waste from off-site facilities shall be sampled and in addition to all appropriate primary and secondary analyses in accordance with Attachment CC, the following tests shall always be performed on aqueous (water) phases:

Test Parameter	Test Method
a. pH	pH Analysis defined in Attachment CC
b. Cyanide, If pH >6	Cyanide Spot Test defined in Attachment CC
c. Reactive Sulfide, If pH >7 and negative for cyanide	Test for Reactive Sulfide defined in Attachment CC

II.A.12. Each incoming shipment of dangerous waste from off-site facilities shall be sampled and in addition to all appropriate primary and secondary analyses in accordance with Attachment CC, the PCB Analysis, as defined in Attachment CC, shall always be performed on non-aqueous phases.

II.A.13. The Permittee must use the Toxicity Characteristic Leaching Procedure (TCLP) or use knowledge of the waste to determine whether a waste exhibits the characteristic of toxicity, as defined in WAC 173-303-090(8).

II.A.14. When there is a discrepancy between a Generator's dangerous waste designation, as provided by the generator profile or the manifest description, and the Permittee's dangerous waste designation, as determined by the screening analysis and any further waste analysis, the following steps shall be taken:

a. The generator shall be informed of the discrepancy and given the following options:

i. Amend the current profile or manifest, or submit a new profile which properly represents the waste; or

ii. Provide the Permittee permission to transport the load back to the generator (if also a TSD) or to an alternative permitted TSD facility.

b. A significant manifest discrepancy shall be resolved within 15 days after receipt of the waste. If a longer period is required the Permittee shall notify the Department in a letter describing the discrepancy and attempts to reconcile it. Such notice shall include a copy of the manifest or shipping paper at issue.

II.A.15. Rinsate generated from the management of listed dangerous waste, such as from tank cleaning, shall be managed as dangerous waste in accordance with the Attachment II.

II.A.16. All analyses performed in order to determine whether a waste exhibits the characteristic of ignitability or has a flash point which is acceptable for receipt at the facility shall be done with the most recent methods in SW-846. Currently those methods are Method 1010: the Pensky-Martens Closed Cup Method for Determining Ignitability and Method 1020: The Setaflash Closed Cup Method for Determining Ignitability.

II.B. PREPAREDNESS AND PREVENTION

II.B.1. The Permittee shall ensure all water related safety equipment such as eyewash units and emergency showers shall remain operable at all times, including during periods of subfreezing temperatures.

II.B.2. In accordance with WAC 173-303-340 the facility shall be designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of dangerous waste or dangerous waste constituents to air, soil, or surface or ground water which could threaten human health or the environment.

II.B.3. A Permittee employee shall observe all loading and unloading of dangerous waste to or from tanker trucks occurring within the Permittee's treatment and storage area.

II.C. RECORDKEEPING AND REPORTING

II.C.1. Operating Record: The Permittee shall maintain a written operating record at the facility, consisting of records kept for the length of time specified below. The record can be a compilation of various documents and when specifically noted may be by reference to records maintained at the corporate office, located at 2203 Airport Way South, Seattle, WA. The Permittee shall also record all information referenced in this Permit in the operating record within 48 hours of the information becoming available. The operating record shall include, but not be limited to, the information listed below.

a. The following records shall be maintained until closure and corrective action are complete and certified:

i. A current map showing the location of dangerous waste management units and non-regulated units within the facility;

ii. A map showing all locations of past dangerous waste management units if different from present locations;

iii. Assessment reports, as per WAC 173-303-360(2)(k), of all incidents that require implementation of the contingency plan (may be by reference to records at the corporate office);

iv. Record of spills and releases (may be by reference to records at the corporate office);

v. Written reports and records of verbal notification to the Director to address releases, fires, and explosions (may be by reference to records at the corporate office);

vi. Summaries of all records of corrective action;

vii. All other environmental permits (current copies shall be maintained at the facility, past copies may be by reference to records at the corporate office);

viii. Corrective action deed notification (may be by reference to records at the corporate office);

ix. The following information, as it relates to the waste analysis plan;

A. The date(s), exact place, and times of sampling or measurements;

B. The name of the individual(s) who performed the sampling or measurements;

C. The date(s) analyses were performed, demonstrating that EPA SW-846 holding times were satisfied;

D. The name of the individual(s) who performed the analyses;

E. The analytical techniques or method used (may be by reference to records at the corporate office);

F. The analytical results;

G. The QA/QC summary (may be by reference to records at the corporate office); and

H. The type and model # of the equipment used for analysis (may be by reference to records at the corporate office).

x. Training records of current Permittee facility personnel;

xi. Facility construction records pursuant to Permit Condition IV.B.2. (may be by reference to records at the corporate office).

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b. The following records shall be maintained for a minimum of 5 years. This time period may be extended by the Department in the event of enforcement action or notification by the Department that an investigation is ongoing. In the case of notification of investigation, the Permittee will not be required to keep the records longer than one (1) year past the normal time frame unless an enforcement action is issued:

i. Facility operation and maintenance records and reports prepared pursuant to this Permit;

ii. Date(s) and method(s) of treatment used per dangerous waste process operation including name(s) of personnel performing actual operation;

iii. Progress reports and any required notifications prepared pursuant to this Permit (may be by reference to records at the corporate office);

iv. Records of all inspection and monitoring information, including all calibration and maintenance records which shall include at a minimum:

A. The date and time of data recording;

B. The name of the person taking and recording the information; and

C. The recorded information itself whether consisting of observation, data measurement, instrument reading or any other monitoring method.

v. Annual reports submitted in compliance with WAC 173-303-220(1), Generator Report - Form 4 unless the reports are necessary to supplement information required by a. above, in which case they must be retained until facility closure and corrective action are complete and certified. (may be by reference to records at the corporate office).

c. The following records shall be maintained for a minimum of 3 years. This time period may be extended by the Department in the event of enforcement action or notification by the Department that an

investigation is ongoing. In the case of notification of investigation, the Permittee will not be required to keep the records longer than one (1) year past the normal time frame unless an enforcement action is issued:

i. The records of all inspections and analyses required by Permit Condition IV.A.3.b.;

ii. Manifests and any required unmanifested shipment or exception reports;

iii. Training records of former Permittee facility personnel; and

iv. Annual reports submitted in compliance with WAC 173-303-390(2), TSD Facility Report - Form 5, unless the reports are necessary to supplement information required by a. above, in which case they must be retained until facility closure and corrective action are complete and certified. (may be by reference to records at the corporate office).

d. Current copies of the following documents as amended, revised, and modified shall be maintained at the facility until closure and corrective action are complete and certified:

i. Contingency Plan;

ii. Training Plan;

iii. Waste Analysis Plan;

iv. Documentation of arrangements made with local authorities pursuant to WAC 173-303-340;

v. All closure, interim measures and final corrective action cost estimates, financial assurance documents prepared pursuant to this Permit, as well as the company names and addresses of Permittee insurers;

vi. Closure Plan;

vii. For all new and converted "new" tank systems, pursuant to WAC 173-303-640(3):

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A. An assessment, by an independent, registered professional engineer or independent qualified tank installation inspector not affiliated with the tank vendor, certified by an independent, registered professional engineer, that the tank system was installed properly and that all discrepancies have been repaired;

B. Results of tightness testing and integrity assessments; and

C. For all tanks which require corrosion protection, a written statement from a corrosion expert that attests to the proper design and installation of any corrosion protection measures.

viii. The results of periodic tightness testing and integrity assessments of all tank systems; and

ix. The results of tightness testing of the interspace area between tank bottoms pursuant to Permit Condition IV.A.3.d.

II.C.2. The Permittee shall submit waste analysis or monitoring data within eight (8) weeks of receipt of a written request by the Department. If, by the end of the eight (8) week period, the requested data have not undergone Quality Assurance/Quality Control (QA/QC), and if the Department requests it, the Permittee shall submit the requested data in raw form. The Permittee shall identify all data submitted which has not undergone QA/QC.

II.D. CLOSURE

II.D.1. The Permittee shall submit a proposed background sampling plan to the Department at least eight (8) weeks in advance of the scheduled collection of background samples. The plan shall include a map showing the proposed sampling locations. The Department will have eight (8) weeks, from the date the Department receives the proposed background locations, to accept or deny the sampling proposal. Failure to respond within eight (8) weeks will constitute acceptance.

II.D.2. The Permittee shall notify the Department at least 10 working days in advance of the scheduled collection of background samples.

II.D.3. Analysis of background samples for constituents which are also specified for analysis in closure samples shall be performed by the methods indicated for closure samples in Attachments HH and LL.

II.D.4. The background analysis shall be statistically defensible considering local area conditions (e.g., soil heterogeneity, etc.). This shall require at a minimum:

a. A sufficient number of samples to provide a representative measure of background levels for hazardous constituents and substances; and

b. The exclusion of outliers to the distribution of background samples from any determination of background environmental levels of hazardous constituents and substances.

II.D.5. The Permittee may perform additional background sampling or analysis. A proposal for additional sampling or analysis must be submitted and approved in accordance with Permit Condition II.D.1. and must meet the requirements of Permit Conditions II.D.2. and II.D.3.

II.D.6. If the Department determines that implementation of the approved background sampling plan has not adequately or accurately quantified background conditions, the Department may issue a final decision requiring additional sampling and analysis. The issuance of such a decision shall constitute an Agency action subject to the rights of appeal under Chapter 34.05 RCW.

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II.D.7. Clean closure shall require the removal of all hazardous constituents listed in WAC 173-303-9905.

a. Removal to demonstrate clean closure shall mean attaining background environmental levels.

i. For the purposes of this permit condition, "background environmental level" shall mean the concentration of a hazardous substance determined by approved laboratory and statistical analyses of samples collected pursuant to Permit Condition II.D.1.

ii. If background environmental levels cannot be quantified for a hazardous constituent or substance, the practical quantitation limit (PQL) of the closure sample will be the standard.

b. For hazardous constituents derived from waste or waste residues specified in WAC 173-303-610(2)(b)(ii) (state only wastes), removal shall also assure the hazardous constituents are below the waste designation limits and the appropriate cleanup standards of Chapter 173-340 WAC.

c. The Department must approve of analytical and statistical methods used to determine whether soil samples from dangerous waste management areas demonstrate compliance with the standards for clean closure.

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II 8. Sampling and analysis at the time of closure shall be conducted in accordance with the closure plan in Attachments HH and LL. The Department may require modification of the closure plan should the facility begin receiving different dangerous wastes (i.e., wastes requiring different management practices or changes to the Part A Permit) or if additional significant releases occur at the facility prior to the time of closure.

a. Within four (4) weeks of Notification of Closure pursuant to WAC 173-303-610(3)(c)(i) the Permittee shall submit to the Department a sampling plan. At a minimum the sampling plan shall identify the location of all soil and concrete samples to be taken. The sampling plan shall specify no less than the number of samples indicated in attachment HH and Permit Conditions II.D.8.c. and II.D.8.d. The methods of selecting random and biased sampling locations shall be consistent with those indicated in attachment HH. The Department will have eight (8) weeks from the date that the plan is received to require modification to the plan, or to approve the plan with or without changes. Failure to respond within eight (8) weeks will constitute approval of the plan.

b. After the Notification of Closure pursuant to WAC 173-303-610(3)(c)(i) and at the request of the Department the Permittee shall provide the Department with the results of all previous analyses of soil or concrete samples from the treatment and storage area.

c. The Permittee shall take biased soil samples from beneath locations of all stains and cracks in the concrete. Such samples shall be analyzed as biased soil samples pursuant to Attachments HH and LL. For the purposes of the financial assurance requirements of Permit Condition II.F.1. the Permittee shall assume closure soil sampling and analysis will require at a minimum:

i. Five (5) biased samples beneath cracks or stains;

ii. 16 biased samples beneath sumps; and

iii. 39 random samples.

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d. If concrete from containment areas is to be left on-site or disposed of in a sanitary landfill, then the Permittee shall take biased samples of the concrete at locations of all cracks and stains. Such samples shall be analyzed as biased concrete samples pursuant to Attachments HH and LL.

e. The Permittee shall use approved analytical methods that achieve quantification limits adequate for demonstrating compliance with closure standards defined in Permit Condition II.D.7. To ensure this, the Department may issue a final decision requiring specialized sample collection or analysis techniques. The issuance of such a decision shall constitute an Agency action subject to the rights of appeal under Chapter 34.05 RCW.

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II.D.9. All piping in the Permittee's treatment and storage area which may have contained dangerous waste including piping under the surface of the secondary containment shall be disposed of in a RCRA permitted hazardous waste disposal facility or decontaminated in accordance with the procedures and standards for tanks and piping in the closure plan, Attachment HH.

II.D.10. The following are specific laboratory procedures to be followed during closure:

a. When using GC/MS, peaks shall be identified as "Tentatively Identified Compounds" (TICs) if they are greater than 10% of the nearest internal standard response. If possible, up to 10 TICs shall be reported for each volatile organic analysis (VOA) and up to 20 TICs shall be reported for each semi-VOA. The Department may, with reason, require the identification of additional peaks. If a priority pollutant is discovered it shall be quantified.

b. When AA or ICP is utilized, cold vapor atomic absorption, or the most recent SW-846 method for low level mercury detection, shall be used for mercury analysis.

c. Metal analysis shall use SW-846 Method 3050, or EPA method 200.2, or the most recent SW-846 digestion techniques for sample preparation for metals to be analyzed by flame AA or ICP.

II.D.11. The activities of the independent registered engineer to assure that closure is conducted in accordance with the

approved plan shall specifically include, but not be limited to, the following:

a. Observation of all pre-designated locations to be biased sampled;

b. The observation of the collection of background samples;

c. Review of tank decontamination records to determine that closure plan requirements for triple rinsing and rinsate management have been followed and that tanks have been adequately cleaned;

d. Determining compliance with sampling protocols; and

e. Review of laboratory results before discharge of decontaminated rinsate.

II.D.12. Should a corrective measures workplan approved by the Environmental Protection Agency indicate that soil and/or concrete removal is required and should such removal be deferred until facility closure, the Permittee shall revise the facility closure plan. Such a revision shall not be subject to the permit modification requirements of Permit Condition I.C.3.

a. The Permittee shall submit to the Department within eight (8) weeks of final approval of the workplan:

i. A revised closure plan and closure cost estimate incorporating the requirements of the workplan; and

ii. Revised financial assurance documentation based on the closure cost estimate prepared pursuant to i. above.

b. The Department will have eight (8) weeks from the date that the submittals pursuant to a. above are received to require modification to the submittals, or to approve the submittals with or without changes. Failure to respond within eight (8) weeks will constitute approval of the submittals.

II.E. CLEAN UP OF RELEASED MATERIAL

II.E.1. In the event of a spill or nonpermitted discharge of dangerous waste the Permittee shall comply with the requirements of WAC 173-303-145. In addition to the requirements of WAC 173-303-145, the Permittee shall:

a. Take appropriate immediate action to protect human health and the environment; and

b. Clean up all released dangerous waste or hazardous substances. At a minimum the Department will require such clean ups to attain the facility closure standards.

II.E.2. Any spilled or leaked dangerous waste within secondary containment shall be removed immediately upon identification.

II.F. FINANCIAL ASSURANCE AND LIABILITY REQUIREMENTS

II.F.1. The Permittee shall demonstrate continuous compliance with WAC 173-303-620(4) by providing documentation of financial assurance to the Director as required by WAC 173-303-620(10).

a. Such documentation shall be adjusted annually for inflation in compliance with WAC 173-303-620(3)(c) and entered into the facility operating record per WAC 173-303-620(3)(d) and Permit Condition II.C.2.c.v. Annual adjustment for inflation shall not require a permit modification under WAC 173-303-830.

i. Financial assurance, prior to future adjustment for inflation, shall be in at least the amount of the closure cost estimate in Attachment HH as revised by the requirements of Permit Condition II.F.3.

ii. The pay-in period of a trust fund shall not exceed the term of the Permit.

b. The Permittee shall provide documentation of financial assurance adequate for disposal or treatment of the contents and subsequent decontamination of any new dangerous waste management tank, no later than 60 days prior to the use of such tank.

II.F.2. The Permittee shall report to the Director any claims made on the liability insurance fund. The report shall be

submitted in writing within 30 days of the filing of such claims and shall contain information on the number and type of claims filed, the amount of each claim, and a description of the occurrence that led to the claim.

II.F.3. The Permittee shall submit to the Department, no less than 90 days after the Permit effective date, a revised closure cost estimate and financial assurance based upon the requirements of this Permit, including but not be limited to the requirements of Permit Conditions II.D.8.

II.G. AIR EMISSION STANDARDS

II.G.1. The Permittee shall comply with requirements of the Puget Sound Air Pollution Control Agency (PSAPCA). These requirements include but are not limited to the following:

a. Annual registration including an air emissions inventory to provide a description of existing treatment processes and units which are or could potentially be a source of air emissions.

b. Submittal of a Notice of Construction for proposed waste management processes and associated waste management units which could potentially be a source of air emissions.

PART III - TANK SYSTEMS

III.A. EXISTING DANGEROUS WASTE TANK SYSTEMS

III.A.1. The Permittee may store and/or treat dangerous wastes in the following tanks:

2307 through 2310, 2313, and 2701 through 2710.

III.B. INTEGRITY ASSESSMENT

III.B.1 The Permittee shall review, pursuant to WAC 173-303-640(2)(c) and based on current tank integrity assessment results, the structural integrity of all dangerous waste management tank systems every five years starting from the date of Permit issuance or, for new tanks, starting from the date new tanks are put into dangerous waste service. See Table III-1 for more frequent interval inspections of the tank interior. Results of the integrity assessments shall be included in the Operating Record accessible at the facility. Any tank system found to be leaking or unfit for service must be immediately removed from service and the Permittee shall comply with the requirements of WAC 173-303-640(7). A tank system shall not be returned to service until the Permittee has obtained the required certification.

III.B.2. The tank integrity assessments performed every 5 years shall be done by an independent, registered, professional engineer. The initial assessment of new and converted "new" tank systems may be performed by an independent, qualified registered professional engineer, or by an independent qualified installation inspector not affiliated with the tank vendor, and shall be certified by an independent, qualified registered professional engineer.

III.B.3. Visual inspections referred to in Table III-1 must be done by an independent registered professional engineer or an independent National Association of Corrosion Engineers (NACE) Level II or Level III certified inspector at least once during each 5 year period. More frequent visual inspections called for in Table III-1 can be done by a Permittee employee who is a registered engineer or a NACE Level II or Level III certified inspector.

III.C. TANK MANAGEMENT PRACTICES

III.C.1. Unless the requirements of WAC 173-303-395(1)(b) are met, the Permittee shall not place dangerous waste into a tank system that has not been decontaminated and which was previously used for the management of incompatible wastes.

III.C.2. Tank entry shall not be done until vapors, if present, are below 10 % of the Lower Explosive Limit (LEL).

III.C.3. The integrity of the coating or lining required for containment systems by WAC 173-303-640 (4)(e)(ii)(D) shall be maintained.

a. The coating or lining must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present.

b. The coating or lining must be of adequate thickness or strength such that the normal operation of equipment and personnel within the given area will not immediately degrade or physically damage the coating or lining.

c. The coating or lining must be compatible with the waste stored in the containment system as specified in Attachment II.

III.C.4. All construction joints in containment slabs in which water stops were not installed internal to the joint shall be inspected daily. Such inspections shall check for joint integrity, adhesion of sealants, cracks, gaps, and any other signs of deterioration. Results of the inspections shall be entered into the facility operating record.

III.C.5. The integrity of all containment systems shall be maintained. Cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of pads, berms curbs, sumps, construction joints, and coatings of storage and treatment areas shall be repaired. Repairs shall be completed within the week following detection of their need in accordance with Attachment EE (i.e., as a Priority 1 or Priority 2 response level repair or remedial action depending on the potential for an environmental release). All sumps shall be lined in accordance with specifications in Attachment II.

III.D. CLOSURE

III.D.1. When hydroblasting is used as a method for tank decontamination during closure, hydroblasting procedures shall follow the guidelines specified by the Department. At the time of Permit issuance, current guidelines are contained in EPA document 600/2-85/028: "Guide for Decontaminating Buildings, Structures and Equipment at Superfund Sites.

EPA 7024.84

Table III-1. TANK INTEGRITY ASSESSMENT SCHEDULE

Rating	Construction Material	Inspection Method	Inspection Frequency Storage	Inspection Frequency Corrosive Processing
A	Carbon or Stainless Steel, uncoated or unlined	Ultrasonic Interior Visual	1 year 1 year	
A	Carbon or Stainless Steel, coated or lined	Corrosion Coupon Interior Visual	1 year 2 years	
A	Polyethylene,	Interior Visual	1 year	1 year
A	Fiberglass	Acoustic Emissions Interior Visual	2 years 2 years	
B	Carbon or Stainless Steel, uncoated or unlined	Ultrasonic Interior Visual	2 years 2 years	
B	Carbon or Stainless Steel, coated or lined	Corrosion Coupon Interior Visual	1 year 4 years	
B	Polyethylene,	Interior Visual	2 years	1 year
B	Fiberglass	Acoustic Emissions Interior Visual	2 years 2 years	
C	Carbon or Stainless Steel, uncoated or unlined	Ultrasonic Interior Visual	3 years 3 years	
C	Carbon or Stainless Steel, coated or lined	Corrosion Coupon Interior Visual	1 year 4 years	
C	Polyethylene,	Interior Visual	2 years	1 year
C	Fiberglass	Acoustic Emissions Interior Visual	2 years 2 years	

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Key for Table III-1.

1. Rating "A" tanks provide lethal and highly toxic service posing the most severe risk in the event of a failure.
2. Rating "B" tanks pose a moderate to high risk from a tank failure.
3. Rating "C" poses a low to moderate hazard in the event of tank failure.

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PART IV - COMPLIANCE REQUIREMENTS

IV.A. TANK COMPLIANCE REQUIREMENTS

IV.A.1. For all tanks which undergo modification, permit modification procedures, pursuant to Permit Condition I.C.3., will be followed. Emergency modifications to correct unsafe conditions may be performed prior to a formal modification request, but such a written request must be submitted within 30 days after the start of modification. The Permittee shall notify the Department, via telephone, within 24 hours of any emergency modifications.

IV.A.2. The Permittee shall vent through activated carbon canisters or catalytic oxidation units all tanks storing material contaminated with organics which could emit toxic vapors during tank filling or because of tank breathing. The Permittee shall use the best demonstrated available technology consistent with primary safety concerns (e.g., risk of fire or explosion) to capture vapors, generated as the result of a fire, which cannot be captured by the carbon canisters or catalytic oxidation units.

IV.A.3. The Permittee shall assure that the leak detection systems for tanks 2701, 2703, and 2705-2708 are capable of collecting and detecting any leaked material. Such assurance shall require that, at a minimum:

a. The Permittee shall provide a means of detecting any liquid which may be present at the lowest point of the interspace area between the tank bottoms. Within eight (8) weeks of the Permit effective date the Permittee shall submit to the Department a determination, certified by an independent registered professional engineer, of the location of the lowest point of the interspace area between the tank bottoms and plans for appropriate leak detection systems. The Department shall have eight (8) weeks from the date the determination and plans are received to accept or deny the submittal. Failure to respond within eight (8) weeks will constitute acceptance.

i. If the determination of Permit Condition IV.A.3.a. indicates the bottom of the interspace area between the tank bottoms is flat or convex (i.e., the middle is higher than the perimeter) detection at the lowest point shall require detection at no less than six points evenly distributed about the perimeter of the tank.

ii. If the determination of Permit Condition IV.A.3.a.i. indicates the bottom of the interspace area between the tank bottoms is concave (i.e., the middle is lower than the perimeter) detection must be at the true lowest point.

b. The Permittee shall inspect the leak detection system for evidence of accumulated liquids no less frequently than every 24 hours.

i. Inspections shall be in performed in accordance with an inspection plan approved in accordance with Permit Condition IV.A.3.c.

ii. Any liquid detected in the interspace area between the tank bottoms shall be promptly removed and appropriately treated or disposed.

iii. If any liquid detected in the interspace area between the tank bottoms is determined to be leaked material, the tank shall be immediately taken out of service, all contents shall be removed within 24 hours, and the tank shall not be returned to service until repaired and certified pursuant to Permit Conditions III.B.1. and IV.A.5.

c. The Permittee shall submit to the Department within eight (8) weeks of the Permit effective date a revised inspection plan which includes the methodology for inspecting the leak detection system for the presence of accumulated liquid. The Department will have eight (8) weeks from the date the proposed methodology is received to either accept or deny the proposal. Failure to respond within (8) weeks shall constitute acceptance. The inspection plan shall assure, at a minimum:

i. The inspection procedure will detect any liquid accumulated in the interspace area between the tank bottoms; and

ii. Procedures will promptly determine whether any accumulated liquid is condensation or leaked material;

d. The Permittee shall perform periodic tightness tests on the interspace area between the tank bottoms.

i. The Permittee shall submit to the Department within eight (8) weeks of the Permit effective date proposed methodology for the tightness test. The Department will have eight (8) weeks from the date the proposed methodology is received to either accept or deny the proposal. Failure to respond within eight (8) weeks will constitute acceptance.

ii. Tightness tests in accordance with Permit Condition IV.A.3.d.i. shall be performed within four (4) weeks after method approval by the Department and no less than once every 6 months thereafter.

iii. The results of all tightness tests shall be reviewed and certified by an independent, registered professional engineer and maintained in the operating record until facility closure.

iv. Any tank for which the interspace area between the tank bottoms cannot be certified as tight shall be immediately taken out of service.

IV.A.4. The Permittee may store or treat dangerous waste in tanks 2701, 2703, and 2705-2708 for six (6) months following the Permit effective date. After six (6) months from the Permit effective date, the Permittee shall not store or treat dangerous waste in tanks 2701, 2703, or 2705-2708 unless all submittals required by Permit Condition IV.A.3. have been approved by the Department, a leak detection system has been installed pursuant to Permit Condition IV.A.3.a., and the initial tightness test pursuant to Permit Condition IV.A.3.D.ii. has been completed and certified. The Permittee may request an extension to the schedule of this condition pursuant to Permit Condition IV.D.

IV.A.5. The Permittee shall notify the Department within 24 hours of discovering any leakage from tanks 2701, 2703, or 2705-2708. If any of these tanks are found to be leaking and if the Permittee wishes to return the tank to service, the Permittee shall notify the Department prior to implementing any repairs as required by Permit Condition III.B.1. The Department may require additional design changes before the tank is returned to service.

IV.B. CONSTRUCTION SCHEDULE

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IV.B.1. The following construction activities shall be completed within the time specified. Time periods shall begin on the effective date of this Permit.

Loading/unloading Pad (See Figure IV-1)

7 months	* Construct pad

Area A (See Figure IV-1)

5 months	* Upgrade secondary containment to meet Permit requirements, remove tanks 106 and 108
14 months	* Install tanks 2702 and 2704

Area B (See Figure IV-1)

5 months	* Upgrade secondary containment to meet Permit requirements
9 months	* Retrofit double bottoms on tanks 2701 and 2703

Area C (See Figure IV-1)

6 months	* Upgrade secondary containment to meet Permit requirements
10 months	* Place tank 2709 into service. Tank 2709 shall be designed and constructed in accordance with all specifications in Figure D1-11, Attachment II; Drawings 43007 and 44006, Appendix D-8 of Attachment II; and the structural and corrosion integrity assessments of Appendix D-9 of Attachment II.
20 months	* Install tank 2307
24 months	* Install tank 2308
28 months	* Install tank 2309

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32 months * Install tank 2310

36 months * Place tank 2710 into service. Tank 2710 shall be designed and constructed in accordance with all specifications in Figure D1-11, Attachment II; Drawings 43007 and 44006, Appendix D-8 of Attachment II; and the structural and corrosion integrity assessments of Appendix D-9 of Attachment II.

IV.B.2. The Permittee shall maintain records of all construction operations occurring in the Permittee's treatment and storage area. Such records may be maintained at the corporate office, but shall be made available at the facility within 24 hours of a request by the Director or an authorized representative. Records shall be maintained until closure and corrective action are complete and certified, and shall include at a minimum:

a. Daily construction reports;

b. Photographs of stages of construction work;

c. Summary or minutes of construction meetings;

d. Material test results;

e. As-built designs as certified by a registered professional engineer;

f. Construction changes as certified by a registered professional engineer; and

g. All quality control procedures undertaken by the Permittee.

IV.B.3. Within 60 days after construction, or a phase of construction, of a new or modified area is complete, the Permittee shall submit to the Department a formal report signed by the Permittee and by an independent, registered professional engineer that certifies that the facility has been constructed in compliance with the Permit.

i. The report shall incorporate, at a minimum, all of the elements defined in Permit Condition IV.B.2.

ii. The Permittee shall not store or treat dangerous waste in the new or modified area until the report has been submitted and the Director or his authorized representative has inspected the facility or waived the inspection pursuant to Permit Condition I.E.9.

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IV.C. GENERAL COMPLIANCE REQUIREMENTS

IV.C.1. The Permittee shall not operate in exceedence of approved Interim Status capacity prior to the completion of all items specified in Permit Condition IV.B.I.

IV.C.2. The Permittee shall maintain within the Operating Record a map locating each management unit and locating each process, both ongoing and intermittent. The relocation of any processes shall be recorded within the operating record within 5 days of relocation.

IV.C.3. The Permittee shall allow independent sampling and sample splitting when requested by the Department. At the Permittee's request, the Department will inform the Permittee of all analyses to be performed on split samples.

IV.C.4. The Permittee shall submit samples for analysis by an independent, accredited laboratory upon request by the Department. Such submittals shall be limited to two (2) events per year, and 12 samples per event.

IV.C.5. Criteria for the clean up or the prevention of contamination of soil, ground water, surface water, sediments, or air within a spill area shall be at least as stringent as standards for clean closure as defined in Section II.D. of this Permit.

IV.C.6. Any accumulated precipitation shall be removed from secondary containment systems in as timely a manner as necessary to prevent overflow of sumps; in all cases such removal shall occur at least once every working shift or a minimum of every 24 hours.

IV.C.7. The Permittee shall note in the facility operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident the Permittee shall submit a written report on the incident to the Department. Such a report shall at a minimum include all items specified in WAC 173-303-360(2)(k).

IV.C.8. The Permittee's treatment and storage area inspections shall include, in addition to all items and procedures specified in Attachment EE, daily inspection of groundwater monitoring wells within secondary containment for pertinent items such as the loss of integrity of surface seals, frost heave, etc.

IV.C.9. The Permittee shall comply with requirements of the Seattle Fire Department. These requirements include, but are not limited to, the following:

a. Providing approved automatic fire control equipment to newly installed or refurbished tanks over 110 gallons containing Class I flammable of Class II combustible liquids;

b. Submittal and Seattle Fire Department approval of construction plans prior to installation of each above-ground storage tank;

c. Meeting tank-to-tank and tank-to-property line separation requirements set forth by the Seattle Fire Code for each tank installation; and

d. Acquisition of all required Fire Department permits.

IV.C.10. All tanks removed from service shall be disposed of in a RCRA permitted hazardous waste disposal facility or decontaminated in accordance with the procedures and standards for tanks in the closure plan, Attachment HH. This shall include the tanks designated under Interim Status as numbers 106, 108, and 113-118.

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IV.D. SCHEDULE EXTENSIONS

IV.D.1. The Permittee shall notify the Department, in writing, as soon as possible of any deviations or expected deviations from any schedules of Parts I through V or Attachments AA through MM of this Permit. The Permittee shall include with the notification all information supporting its claim that it has used best efforts to meet the required schedules. If the Director determines that the Permittee has made best efforts to meet the schedules of this Permit, the Director shall notify the Permittee in writing by certified mail that the Permittee has been granted an extension. Such a revision shall not require a permit modification under WAC 173-303-830. Copies of all letters pursuant to this Permit Condition shall be kept in the Operating Record.

IV.E. TRAFFIC MANAGEMENT

IV.E.1 Whenever a vehicle used for the transport of dangerous waste enters the Permittee's treatment and storage area, a facility employee shall be in such a position that he or she can observe the approach of the vehicle towards the loading/unloading area and can signal to the driver to turn or to stop.

IV.E.2. Vehicles used for the transport of dangerous waste to or from the facility shall be parked only in the designated loading/unloading area while engaged in loading or unloading.

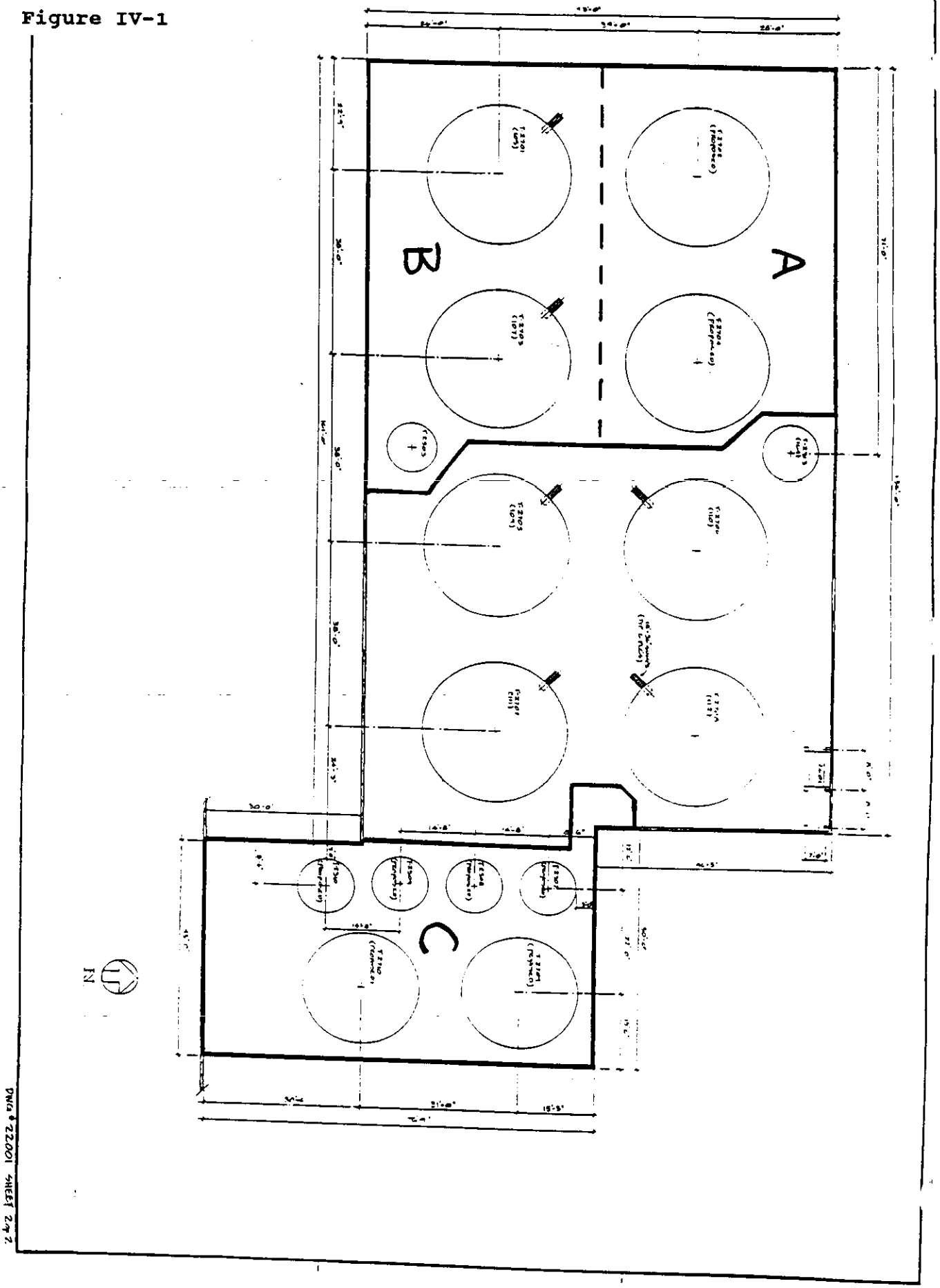
IV.F. CLOSURE OF INTERIM STATUS AREAS

IV.F.1. The Permittee shall close all portions of the Permittee's treatment and storage areas as defined in attachment MM and which are not addressed in the final facility closure plan, Attachment HH.

a. Closure of these areas shall be conducted in accordance with a closure plan approved by the Department. The Permittee shall submit to the Department a closure plan for these areas within 60 days of the Permit effective date.

b. Closure of these areas shall meet the all of the closure standards of Permit Condition II.D.7.

Figure IV-1



PART V - PERMIT BY RULE

V.A. WASTEWATER TREATMENT UNIT

V.A.1. The Permittee may store and treat dangerous wastewater in a wastewater treatment unit(s) as defined in WAC 173-303-040.

V.B. GENERAL CONDITIONS

V.B.1. The Permittee shall design, operate, and maintain the wastewater treatment unit in accordance with the provisions of WAC 173-303-802(5)(a)(i),(ii), and (iii).

V.B.2. The Permittee shall comply with the terms of the Municipality of Metropolitan Seattle (METRO) Industrial Wastewater Discharge Permit Number 7099, or subsequent permit, for the discharge from the wastewater treatment unit(s) unless authorized by METRO due to special circumstances or emergencies.

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PART VI - CORRECTIVE ACTION

VI.A.1. Pursuant to WAC 17 -303-645(12) the Permittee shall institute corrective action as necessary to protect human health and the environment for all releases of dangerous waste or constituents from any solid waste ma gement unit, regardless of the time at which waste was pl d in such a unit. In order to satisfy this requirement the Permittee shall:

a. Comply with the requirements of the Agreed Order for this facility, Environmental Protection Agency Docket No. [1089-11-06-3008(h)], for as long as the Agreed Order is in effect. Should corrective measures be required pursuant to the Agreed Order prior to the issuance of the final facility permit referenced in b. below, the permittee shall provide assurance of financial responsibility adequate for completing the corrective measures. Such financial assurance shall be in a form specified by WAC 173-303-620(4) and meet the requirements of WAC 173-303-620(9) and (10).

b. Comply with the requirements of a final facility permit issued by the Environmental Protection Agency when that permit supersedes the Agreed Order referenced in a. above.

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List of Analytes for the Pier 91 Part B Closure Plan

Analyte	SW-846 Method	Detection Limit of Liquid after Distillation, Digestion or Extraction (ug/l)
Antimony (Sb)	7041	3
Arsenic (As)	7060	1
Barium (Ba)	6010	2
Beryllium (Be)	6010	0.3
Cadmium (Cd)	6010	4
Chromium (Cr)	6010	7
Copper (Cu)	6010	6
Lead (Pb)	7421	1
Mercury (Hg)	7470 or 7471	0.2
Nickel (Ni)	6010	15
Selenium (Se)	7740	2
Silver (Ag)	6010	7
Thallium (Tl)	7841	1
Zinc (Zn)	6010	2
Sulfide	9030	(see Method)
PCBs	8080	(see Method)
TPH	418.1 (not SW-846)	(see Method)
Volatiles (see attached method list of analytes)	8240	(see Method)
Semi-Volatiles (see attached method list of analytes)	8270	(see Method)

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METHOD 6010

INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROSCOPY

1.0 SCOPE AND APPLICATION

1.1 Inductively coupled plasma atomic emission spectroscopy (ICP) determines elements including metals in solution. The method is applicable to a large number of metals and wastes. All matrices, including ground water, aqueous samples, EP extracts, industrial wastes, soils, sludges, sediments, and other solid wastes, require digestion prior to analysis.

1.2 Elements for which Method 6010 is applicable are listed in Table 1. Detection limits, sensitivity, and optimum ranges of the metals will vary with the matrices and model of spectrometer. The data shown in Table 1 provide concentration ranges for clean aqueous samples. Use of this method is restricted to spectroscopists who are knowledgeable in the correction of spectral, chemical, and physical interferences.

1.3 The method of standard addition (MSA) (Paragraph 8.5.3) shall be used for the analysis of all EP extracts and sample digests unless either serial dilution or matrix spike addition demonstrates that it is not required.

2.0 SUMMARY OF METHOD

2.1 Prior to analysis, samples must be solubilized or digested using appropriate Sample Preparation Methods (e.g., Methods 3005-3050).

2.2 Method 6010 describes the simultaneous, or sequential, multielemental determination of elements by ICP. The method measures element-emitted light by optical spectrometry. Samples are nebulized and the resulting aerosol is transported to the plasma torch. Element-specific atomic-line emission spectra are produced by a radio-frequency inductively coupled plasma. The spectra are dispersed by a grating spectrometer, and the intensities of the lines are monitored by photomultiplier tubes. Background correction is required for trace element determination. Background must be measured adjacent to analyte lines on samples during analysis. The position selected for the background-intensity measurement, on either or both sides of the analytical line, will be determined by the complexity of the spectrum adjacent to the analyte line. The position used must be free of spectral interference and reflect the same change in background intensity as occurs at the analyte wavelength measured. Background correction is not required in cases of line broadening where a background correction measurement would actually degrade the analytical result. The possibility of additional interferences named in Section 3.0 should also be recognized and appropriate corrections made; tests for their presence are described in Section 8.5.

TABLE 1. RECOMMENDED WAVELENGTHS AND ESTIMATED INSTRUMENTAL DETECTION LIMITS

Element	Wavelength[a] (nm)	Estimated Detection Limit[b] (ug/L)
Aluminum	308.215	45
Antimony	206.833	32
Arsenic	193.696	53
Barium	455.403	2
Beryllium	313.042	0.3
Boron	249.773	5
Cadmium	226.502	4
Calcium	317.933	10
Chromium	267.716	7
Cobalt	228.616	7
Copper	324.754	6
Iron	259.940	7
Lead	220.353	42
Magnesium	279.079	30
Manganese	257.610	2
Molybdenum	202.030	8
Nickel	231.604	15
Potassium	766.491	See note c
Selenium	196.026	75
Silicon	288.158	58
Silver	328.068	7
Sodium	588.995	29
Thallium	190.864	40
Vanadium	292.402	8
Zinc	213.856	2

[a]The wavelengths listed are recommended because of their sensitivity and overall acceptance. Other wavelengths may be substituted if they can provide the needed sensitivity and are treated with the same corrective techniques for spectral interference (see Paragraph 3.1). In time, other elements may be added as more information becomes available and as required.

[b]The estimated instrumental detection limits shown are taken from Reference 1 in Section 10.0 below. They are given as a guide for an instrumental limit. The actual method detection limits are sample dependent and may vary as the sample matrix varies.

[c]Highly dependent on operating conditions and plasma position.

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ANTIMONY (ATOMIC ABSORPTION, FURNACE TECHNIQUE)

1.0 SCOPE AND APPLICATION

1.1 See Section 1.0 of Method 7000.

2.0 SUMMARY OF METHOD

2.1 See Section 2.0 of Method 7000.

3.0 INTERFERENCES

3.1 See Section 3.0 of Method 7000 if interferences are suspected.

3.2 High lead concentration may cause a measurable spectral interference on the 217.6-nm line. If this interference is expected, the secondary wavelength should be employed or Zeeman background correction used.

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4.0 APPARATUS AND MATERIALS

4.1 For basic apparatus, see Section 4.0 of Method 7000.

4.2 Instrument parameters (general):

4.2.1 **Drying time and temp:** 30 sec at 125°C.
4.2.2 **Ashing time and temp:** 30 sec at 800°C.
4.2.3 **Atomizing time and temp:** 10 sec at 2700°C.
4.2.4 **Purge gas:** Argon or nitrogen.
4.2.5 **Wavelength:** 217.6 nm (primary); 231.1 nm (alternate).
4.2.6 **Background correction:** Required.
4.2.7 Other operating parameters should be set as specified by the particular instrument manufacturer.

NOTE: The above concentration values and instrument conditions are for a Perkin-Elmer HGA-2100, based on the use of a 20-uL injection, continuous-flow purge gas, and nonpyrolytic graphite. Smaller sizes of furnace devices or those employing faster rates of atomization can be operated using lower atomization temperatures for shorter time periods than the above-recommended settings.

5.0 REAGENTS

5.1 See Section 5.0 of Method 7000.

5.2 Preparation of standards:

5.2.1 Stock solution: Carefully weigh 2.7426 g of antimony potassium tartrate (analytical reagent grade) and dissolve in Type II water. Dilute to 1 liter with Type II water; 1 mL = 1 mg Sb (1,000 mg/L). Alternatively, procure a certified standard from a supplier and verify by comparison with a second standard.

5.2.2 Prepare dilutions of the stock solution to be used as calibration standards at the time of analysis. The calibration standards should contain 0.2% (v/v) HNO_3 and 1-2% (v/v) HCl, prepared using the same types of acid and at the same concentrations as in the sample after processing.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 See Chapter Three, Section 3.1.3, Sample Handling and Preservation.

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7.0 PROCEDURE

7.1 Sample preparation: The procedures for preparation of the sample are given in Method 3005. Method 3005, a soft digestion, is presently the only digestion procedure recommended for Sb. It yields better recoveries than either Method 3010 or Method 3050. There is no hard digestion for Sb at this time.

NOTE: The addition of HCl acid to the digestate prevents the furnace analysis of this digestate for many other metals.

7.2 See Method 7000, Paragraph 7.3, Furnace Procedure. The calculation is given in Method 7000, Paragraph 7.4.

8.0 QUALITY CONTROL

8.1 See Section 8.0 of Method 7000.

9.0 METHOD PERFORMANCE

9.1 Precision and accuracy data are not available at this time.

9.2 The performance characteristics for an aqueous sample free of interferences are:

Optimum concentration range: 20-300 ug/L.
Detection limit: 3 ug/L.

METHOD 7060

ARSENIC (ATOMIC ABSORPTION, FURNACE TECHNIQUE)

1.0 SCOPE AND APPLICATION

1.1 Method 7060 is an atomic absorption procedure approved for determining the concentration of arsenic in wastes, mobility procedure extracts, soils, and ground water. All samples must be subjected to an appropriate dissolution step prior to analysis.

2.0 SUMMARY OF METHOD

2.1 Prior to analysis by Method 7060, samples must be prepared in order to convert organic forms of arsenic to inorganic forms, to minimize organic interferences, and to convert the sample to a suitable solution for analysis. The sample preparation procedure varies depending on the sample matrix. Aqueous samples are subjected to the acid digestion procedure described in this method. Sludge samples are prepared using the procedure described in Method 3050.

2.2 Following the appropriate dissolution of the sample, a representative aliquot of the digestate is spiked with a nickel nitrate solution and is placed manually or by means of an automatic sampler into a graphite tube furnace. The sample aliquot is then slowly evaporated to dryness, charred (ashed), and atomized. The absorption of hollow cathode or EDL radiation during atomization will be proportional to the arsenic concentration.

2.3 The typical detection limit for this method is 1 ug/L.

3.0 INTERFERENCES

3.1 Elemental arsenic and many of its compounds are volatile; therefore, samples may be subject to losses of arsenic during sample preparation. Spike samples and relevant standard reference materials should be processed to determine if the chosen dissolution method is appropriate.

3.2 Likewise, caution must be employed during the selection of temperature and times for the dry and char (ash) cycles. A nickel nitrate solution must be added to all digestates prior to analysis to minimize volatilization losses during drying and ashing.

3.3 In addition to the normal interferences experienced during graphite furnace analysis, arsenic analysis can suffer from severe nonspecific absorption and light scattering caused by matrix components during atomization. Arsenic analysis is particularly susceptible to these problems because of its low analytical wavelength (193.7 nm). Simultaneous background

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METHOD 7421

LEAD (ATOMIC ABSORPTION, FURNACE TECHNIQUE)

1.0 SCOPE AND APPLICATION

1.1 See Section 1.0 of Method 7000.

2.0 SUMMARY OF METHOD

2.1 See Section 2.0 of Method 7000.

3.0 INTERFERENCES

3.1 See Section 3.0 of Method 7000 if interferences are suspected.

3.2 Background correction is required.

3.3 If poor recoveries are obtained, a matrix modifier may be necessary. Add 10 uL of phosphoric acid (Paragraph 5.3) to 1 mL of prepared sample in the furnace sampler cup and mix well.

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4.0 APPARATUS AND MATERIALS

4.1 For basic apparatus, see Section 4.0 of Method 7000.

4.2 Instrument parameters (general):

4.2.1 Drying time and temp: 30°sec at 125°C.
4.2.2 Ashing time and temp: 30°sec at 500°C.
4.2.3 Atomizing time and temp: 10 sec at 2700°C.
4.2.4 Purge gas: Argon.
4.2.5 Wavelength: 283.3 nm.
4.2.6 Background correction: Required.
4.2.7 Other operating parameters should be set as specified by the particular instrument manufacturer.

NOTE: The above concentration values and instrument conditions are for a Perkin-Elmer HGA-2100, based on the use of a 20-uL injection, continuous-flow purge gas, and nonpyrolytic graphite. Smaller sizes of furnace devices or those employing faster rates of atomization can be operated using lower atomization temperatures for shorter time periods than the above-recommended settings.

5.0 REAGENTS

5.1 See Section 5.0 of Method 7000.

5.2 Preparation of standards:

5.2.1 Stock solution: Dissolve 1.599 g of lead nitrate, $Pb(NO_3)_2$ (analytical reagent grade), in Type II water, acidify with 10 mL redistilled HNO_3, and dilute to 1 liter with Type II water. Alternatively, procure a certified standard from a supplier and verify by comparison with a second standard.

5.2.2 Prepare dilutions of the stock solution to be used as calibration standards at the time of analysis. The calibration standards should be prepared using the same type of acid and at the same concentrations as in the sample after processing (0.5% v/v HNO_3).

5.3 Phosphoric acid: Reagent grade.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 See Chapter Three, Section 3.1.3, Sample Handling and Preservation.

7.0 PROCEDURE

7.1 Sample preparation: The procedures for preparation of the sample are given in Chapter Three, Section 3.2.

7.2 See Method 7000, Paragraph 7.3, Furnace Procedure. The calculation is given in Method 7000, Paragraph 7.4.

8.0 QUALITY CONTROL

8.1 See Section 8.0 of Method 7000.

9.0 METHOD PERFORMANCE

9.1 Precision and accuracy data are available in Method 239.2 of Methods for Chemical Analysis of Water and Wastes.

9.2 The performance characteristics for an aqueous sample free of interferences are:

Optimum concentration range: 5-100 ug/L.
Detection limit: 1 ug/L.

9.3 The data shown in Table 1 were obtained from records of state and contractor laboratories. The data are intended to show the precision of the combined sample preparation and analysis method.

CWA/TZA 1865

MERCURY IN LIQUID WASTE (MANUAL COLD-VAPOR TECHNIQUE)

1.0 SCOPE AND APPLICATION

1.1 Method 7470 is a cold-vapor atomic absorption procedure approved for determining the concentration of mercury in mobility-procedure extracts, aqueous wastes, and ground waters. (Method 7470 can also be used for analyzing certain solid and sludge-type wastes; however, Method 7471 is usually the method of choice for these waste types.) All samples must be subjected to an appropriate dissolution step prior to analysis.

2.0 SUMMARY OF METHOD

2.1 Prior to analysis, the liquid samples must be prepared according to the procedure discussed in this method.

2.2 Method 7470, a cold-vapor atomic absorption technique, is based on the absorption of radiation at 253.7-nm by mercury vapor. The mercury is reduced to the elemental state and aerated from solution in a closed system. The mercury vapor passes through a cell positioned in the light path of an atomic absorption spectrophotometer. Absorbance (peak height) is measured as a function of mercury concentration.

2.3 The typical detection limit for this method is 0.0002 mg/L.

3.0 INTERFERENCES

3.1 Potassium permanganate is added to eliminate possible interference from sulfide. Concentrations as high as 20 mg/L of sulfide as sodium sulfide do not interfere with the recovery of added inorganic mercury from Type II water.

3.2 Copper has also been reported to interfere; however, copper concentrations as high as 10 mg/L had no effect on recovery of mercury from spiked samples.

3.3 Seawaters, brines, and industrial effluents high in chlorides require additional permanganate (as much as 25 mL) because, during the oxidation step, chlorides are converted to free chlorine, which also absorbs radiation of 253.7 nm. Care must therefore be taken to ensure that free chlorine is absent before the mercury is reduced and swept into the cell. This may be accomplished by using an excess of hydroxylamine sulfate reagent (25 mL). In addition, the dead air space in the BOD bottle must be purged before adding stannous sulfate. Both inorganic and organic mercury spikes have been quantitatively recovered from seawater by using this technique.

MERCURY IN SOLID OR SEMISOLID WASTE (MANUAL COLD-VAPOR TECHNIQUE)

1.0 SCOPE AND APPLICATION

1.1 Method 7471 is approved for measuring total mercury (organic and inorganic) in soils, sediments, bottom deposits, and sludge-type materials. All samples must be subjected to an appropriate dissolution step prior to analysis.

2.0 SUMMARY OF METHOD

2.1 Prior to analysis, the solid or semi-solid samples must be prepared according to the procedures discussed in this method.

2.2 Method 7471, a cold-vapor atomic absorption method, is based on the absorption of radiation at the 253.7-nm wavelength by mercury vapor. The mercury is reduced to the elemental state and aerated from solution in a closed system. The mercury vapor passes through a cell positioned in the light path of an atomic absorption spectrophotometer. Absorbance (peak height) is measured as a function of mercury concentration.

2.3 The typical detection limit for this method is 0.0002 mg/L.

3.0 INTERFERENCES

3.1 Potassium permanganate is added to eliminate possible interference from sulfide. Concentrations as high as 20 mg/L of sulfide as sodium sulfide do not interfere with the recovery of added inorganic mercury from Type II water.

3.2 Copper has also been reported to interfere; however, copper concentrations as high as 10 mg/L had no effect on recovery of mercury from spiked samples.

3.3 Seawaters, brines, and industrial effluents high in chlorides require additional permanganate (as much as 25 mL) because, during the oxidation step, chlorides are converted to free chlorine, which also absorbs radiation of 253 nm. Care must therefore be taken to ensure that free chlorine is absent before the mercury is reduced and swept into the cell. This may be accomplished by using an excess of hydroxylamine sulfate reagent (25 mL). In addition, the dead air space in the BOD bottle must be purged before adding stannous sulfate. Both inorganic and organic mercury spikes have been quantitatively recovered from seawater by using this technique.

3.4 Certain volatile organic materials that absorb at this wavelength may also cause interference. A preliminary run without reagents should determine if this type of interference is present.

SELENIUM (ATOMIC ABSORPTION, FURNACE TECHNIQUE)

1.0 SCOPE AND APPLICATION

1.1 Method 7740 is an atomic absorption procedure approved for determining the concentration of selenium in wastes, mobility-procedure extracts, soils, and ground water. All samples must be subjected to an appropriate dissolution step prior to analysis.

2.0 SUMMARY OF METHOD

2.1 Prior to analysis by Method 7740, samples must be prepared in order to convert organic forms of selenium to inorganic forms, to minimize organic interferences, and to convert samples to suitable solutions for analysis. The sample-preparation procedure varies, depending on the sample matrix. Aqueous samples are subjected to the acid-digestion procedure described in this method. Sludge samples are prepared using the procedure described in Method 3050.

2.2 Following the appropriate dissolution of the sample, a representative aliquot is placed manually or by means of an automatic sampler into a graphite tube furnace. The sample aliquot is then slowly evaporated to dryness, charred (ashed), and atomized. The absorption of lamp radiation during atomization will be proportional to the selenium concentration.

2.3 The typical detection limit for this method is 2 ug/L.

3.0 INTERFERENCES

3.1 Elemental selenium and many of its compounds are volatile; therefore, samples may be subject to losses of selenium during sample preparation. Spike samples and relevant standard reference materials should be processed to determine if the chosen dissolution method is appropriate.

3.2 Likewise, caution must be employed during the selection of temperature and times for the dry and char (ash) cycles. A nickel nitrate solution must be added to all digestates prior to analysis to minimize volatilization losses during drying and ashing.

3.3 In addition to the normal interferences experienced during graphite furnace analysis, selenium analysis can suffer from severe nonspecific absorption and light scattering caused by matrix components during atomization. Selenium analysis is particularly susceptible to these problems because of its low analytical wavelength (196.0 nm). Simultaneous background correction is required to avoid erroneously high results. High iron levels can give overcorrection with deuterium background. Zeeman background correction can be useful in this situation.

Revision 0
Date September 1986

THALLIUM (ATOMIC ABSORPTION, FURNACE TECHNIQUE)

1.0 SCOPE AND APPLICATION

1.1 See Section 1.0 of Method 7000.

2.0 SUMMARY OF METHOD

2.1 See Section 2.0 of Method 7000.

3.0 INTERFERENCES

3.1 See Section 3.0 of Method 7000 if interferences are suspected.

3.2 Background correction is required.

3.3 Hydrochloric acid or excessive chloride will cause volatilization of thallium at low temperatures. Verification that losses are not occurring, by spiked samples or standard additions, must be made for each sample matrix.

3.4 Palladium is a suitable matrix modifier for thallium analysis.

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4.0 APPARATUS AND MATERIALS

4.1 For basic apparatus, see Section 4.0 of Method 7000.

4.2 Instrument parameters (general):

4.2.1 **Drying time and temp:** 30 sec at 125°C.
4.2.2 **Ashing time and temp:** 30 sec at 400°C.
4.2.3 **Atomizing time and temp:** 10 sec at 2400°C.
4.2.4 **Purge gas:** Argon or nitrogen.
4.2.5 **Wavelength:** 276.8 nm.
4.2.6 **Background correction:** Required.
4.2.7 Other operating parameters should be set as specified by the particular instrument manufacturer.

NOTE: The above concentration values and instrument conditions are for a Perkin-Elmer HGA-2100, based on the use of a 20-uL injection, continuous-flow purge gas, and nonpyrolytic graphite. Smaller sizes of furnace devices or those employing faster rates of atomization can be operated using lower atomization temperatures for shorter time periods than the above-recommended settings.

5.0 REAGENTS

5.1 See Section 5.0 of Method 7000.

5.2 Preparation of standards:

5.2.1 **Stock solution:** Dissolve 1.303 g thallium nitrate, $TlNO_3$ (analytical reagent grade), in Type II water, acidify with 10 mL concentrated HNO_3, and dilute to 1 liter with Type II water. Alternatively, procure a certified standard from a supplier and verify by comparison with a second standard.

5.2.2 Prepare dilutions of the stock solution to be used as calibration standards at the time of analysis. The calibration standards should be prepared using the same type of acid and at the same concentrations as in the sample after processing (0.5% v/v HNO_3).

5.3 Palladium chloride: Weigh 0.25 g of $PdCl_2$ to the nearest 0.0001 g. Dissolve in 10 mL of 1:1 HNO_3 and dilute to 1 liter with Type II water. Use equal volumes of sample and palladium solution.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 See Chapter Three, Section 3.1.3, Sample Handling and Preservation.

7.0 PROCEDURE

7.1 Sample preparation: The procedures for preparation of the sample are given in Chapter Three, Section 3.2.

7.2 See Method 7000, Paragraph 7.3, Furnace Procedure. The calculation is given in Method 7000, Paragraph 7.4.

8.0 QUALITY CONTROL

8.1 See Section 8.0 of Method 7000.

9.0 METHOD PERFORMANCE

9.1 Precision and accuracy data are not available at this time.

9.2 The performance characteristics for an aqueous sample free of interferences are:

Optimum concentration range: 5-100 ug/L.
Detection limit: 1 ug/L.

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GAS CHROMATOGRAPHY/MASS SPECTROMETRY FOR VOLATILE ORGANICS

1.0 SCOPE AND APPLICATION

1.1 Method 8240 is used to determine volatile organic compounds in a variety of solid waste matrices. This method is applicable to nearly all types of samples, regardless of water content, including ground water, aqueous sludges, caustic liquors, acid liquors, waste solvents, oily wastes, mousses, tars, fibrous wastes, polymeric emulsions, filter cakes, spent carbons, spent catalysts, soils, and sediments.

1.2 Method 8240 can be used to quantify most volatile organic compounds that have boiling points below 200°C [vapor pressure is approximately equal to mm Hg @ 25°C] and that are insoluble or slightly soluble in water. Volatile water-soluble compounds can be included in this analytical technique, however, for the more soluble compounds, quantitation limits are approximately ten times higher because of poor purging efficiency. The method is also limited to compounds that elute as sharp peaks from a GC column packed with graphitized carbon lightly coated with a carbowax. Such compounds include low-molecular-weight halogenated hydrocarbons, aromatics, ketones, nitriles, acetates, acrylates, ethers, and sulfides. See Table 1 for a list of compounds, retention times, and their characteristic ions that have been evaluated on a purge-and-trap GC/MS system.

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1.3 The practical quantitation limit (PQL) of Method 8240 for an individual compound is approximately 5 ug/kg (wet weight) for soil/sediment samples, 0.5 mg/kg (wet weight) for wastes, and 5 ug/L for ground water (see Table 2). PQLs will be proportionately higher for sample extracts and samples that require dilution or reduced sample size to avoid saturation of the detector.

1.4 Method 8240 is based upon a purge-and-trap, gas chromatographic/mass spectrometric (GC/MS) procedure. This method is restricted to use by, or under the supervision of, analysts experienced in the use of purge-and-trap systems and gas chromatograph/mass spectrometers, and skilled in the interpretation of mass spectra and their use as a quantitative tool.

1.5 To increase purging efficiencies of acrylonitrile and acrolein, refer to Methods 5030 and 8030 for proper purge-and-trap conditions.

2.0 SUMMARY OF METHOD

2.1 The volatile compounds are introduced into the gas chromatograph by the purge-and-trap method or by direct injection (in limited applications). The components are separated via the gas chromatograph and detected using a mass spectrometer, which is used to provide both qualitative and quantitative information. The chromatographic conditions, as well as typical mass spectrometer operating parameters, are given.

TABLE 2. PRACTICAL QUANTITATION LIMITS (PQL) FOR VOLATILE ORGANICS[a]

Volatiles	CAS Number	Practical Quantitation Limits[b] Ground water ug/L	Low Soil/Sediment ug/Kg
1. Chloromethane	74-87-3	10	10
2. Bromomethane	74-83-9	10	10
3. Vinyl Chloride	75-01-4	10	10
4. Chloroethane	75-00-3	10	10
5. Methylene Chloride	75-09-2	5	5
6. Acetone	67-64-1	100	100
7. Carbon Disulfide	75-15-0	5	5
8. 1,1-Dichloroethene	75-35-4	5	5
9. 1,1-Dichloroethane	75-35-3	5	5
10. trans-1,2-Dichloroethene	156-60-5	5	5
11. Chloroform	67-66-3	5	5
12. 1,2-Dichloroethane	107-06-2	5	5
13. 2-Butanone	78-93-3	100	100
14. 1,1,1-Trichloroethane	71-55-6	5	5
15. Carbon Tetrachloride	56-23-5	5	5
16. Vinyl Acetate	108-05-4	50	50
17. Bromodichloromethane	75-27-4	5	5
18. 1,1,2,2-Tetrachloroethane	79-34-5	5	5
19. 1,2-Dichloropropane	78-87-5	5	5
20. trans-1,3-Dichloropropene	10061-02-6	5	5
21. Trichloroethene	79-01-6	5	5
22. Dibromochloromethane	124-48-1	5	5
23. 1,1,2-Trichloroethane	79-00-5	5	5
24. Benzene	71-43-2	5	5
25. cis-1,3-Dichloropropene	10061-01-5	5	5
26. 2-Chloroethyl Vinyl Ether	110-75-8	10	10
27. Bromoform	75-25-2	5	5
28. 2-Hexanone	591-78-6	50	50
29. 4-Methyl-2-pentanone	108-10-1	50	50
30. Tetrachloroethene	127-18-4	5	5

TABLE 2. - Continued

Volatiles	CAS Number	Practical Quantitation Limits[b] Ground water ug/L	Low Soil/Sediment ug/Kg
31. Toluene	108-88-3	5	5
32. Chlorobenzene	108-90-7	5	5
33. Ethyl Benzene	100-41-4	5	5
34. Styrene	100-42-5	5	5
35. Total Xylenes		5	5

[a]Sample PQLs are highly matrix-dependent. The PQLs listed herein are provided for guidance and may not always be achieveable. See the following information for further guidance on matrix-dependent PQLs.

[b]PQLs listed for soil/sediment are based on wet weight. Normally data is reported on a dry weight basis; therefore, PQLs will be higher, based on the % moisture in each sample.

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Other Matrices:	Factor[1]
Water miscible liquid waste	50
High-level soil & sludges	125
Non-water miscible waste	500

[1]PQL = [PQL for ground water (Table 2)] X [Factor]. For non-aqueous samples, the factor is on a wet-weight basis.

GAS CHROMATOGRAPHY/MASS SPECTROMETRY FOR SEMIVOLATILE ORGANICS: CAPILLARY COLUMN TECHNIQUE

1.0 SCOPE AND APPLICATION

1.1 Method 8270 is used to determine the concentration of semivolatile organic compounds in extracts prepared from all types of solid waste matrices, soils, and ground water. Direct injection of a sample may be used in limited applications.

1.2 Method 8270 can be used to quantify most neutral, acidic, and basic organic compounds that are soluble in methylene chloride and capable of being eluted without derivatization as sharp peaks from a gas chromatographic fused-silica capillary column coated with a slightly polar silicone. Such compounds include polynuclear aromatic hydrocarbons, chlorinated hydrocarbons and pesticides, phthalate esters, organophosphate esters, nitrosamines, haloethers, aldehydes, ethers, ketones, anilines, pyridines, quinolines, aromatic nitro compounds, and phenols, including nitrophenols. See Table 1 for a list of compounds and their characteristic ions that have been evaluated on the specified GC/MS system.

1.3 The following compounds may require special treatment when being determined by this method. Benzidine can be subject to oxidative losses during solvent concentration. Also, chromatography is poor. Under the alkaline conditions of the extraction step, α-BHC, γ-BHC, endosulfan I and II, and endrin are subject to decomposition. Neutral extraction should be performed if these compounds are expected. Hexachlorocyclopentadiene is subject to thermal decomposition in the inlet of the gas chromatograph, chemical reaction in acetone solution, and photochemical decomposition. N-nitrosodimethylamine is difficult to separate from the solvent under the chromatographic conditions described. N-nitrosodiphenylamine decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine. Pentachlorophenol, 2,4-dinitrophenol, 4-nitrophenol, 4,6-dinitro-2-methylphenol, 4-chloro-3-methylphenol, benzoic acid, 2-nitroaniline, 3-nitroaniline, 4-chloroaniline, and benzyl alcohol are subject to erratic chromatographic behavior, especially if the GC system is contaminated with high boiling material.

1.4 The practical quantitation limit (PQL) of Method 8270 for determining an individual compound is approximately 1 mg/kg (wet weight) for soil/sediment samples, 1-200 mg/kg for wastes (dependent on matrix and method of preparation), and 10 ug/L for ground water samples (see Table 2). PQLs will be proportionately higher for sample extracts that require dilution to avoid saturation of the detector.

1.5 This method is restricted to use by or under the supervision of analysts experienced in the use of gas chromatograph/mass spectrometers and skilled in the interpretation of mass spectra. Each analyst must demonstrate the ability to generate acceptable results with this method.

TABLE 2. PRACTICAL QUANTITATION LIMITS (PQL) FOR SEMIVOLATILE ORGANICS**

Semivolatiles	CAS Number	Practical Quantitation Limits* Ground Water ug/L	Low Soil/Sediment[1] ug/Kg
Phenol	108-95-2	10	660
bis(2-Chloroethyl) ether	111-44-4	10	660
2-Chlorophenol	95-57-8	10	660
1,3-Dichlorobenzene	541-73-1	10	660
1,4-Dichlorobenzene	106-46-7	10	660
Benzyl Alcohol	100-51-6	20	1300
1,2-Dichlorobenzene	95-50-1	10	660
2-Methylphenol	95-48-7	10	660
bis(2-Chloroisopropyl) ether	39638-32-9	10	660
4-Methylphenol	106-44-5	10	660
N-Nitroso-Di-N-propylamine	621-64-7	10	660
Hexachloroethane	67-72-1	10	660
Nitrobenzene	98-95-3	10	660
Isophorone	78-59-1	10	660
2-Nitrophenol	88-75-5	10	660
2,4-Dimethylphenol	105-67-9	10	660
Benzoic Acid	65-85-0	50	3300
bis(2-Chloroethoxy) methane	111-91-1	10	660
2,4-Dichlorophenol	120-83-2	10	660
1,2,4-Trichlorobenzene	120-82-1	10	660
Naphthalene	91-20-3	10	660
4-Chloroaniline	106-47-8	20	1300
Hexachlorobutadiene	87-68-3	10	660
4-Chloro-3-methylphenol	59-50-7	20	1300
2-Methylnaphthalene	91-57-6	10	660
Hexachlorocyclopentadiene	77-47-4	10	660
2,4,6-Trichlorophenol	88-06-2	10	660
2,4,5-Trichlorophenol	95-95-4	10	660

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TABLE 2. PRACTICAL QUANTITATION LIMITS (PQL) FOR SEMIVOLATILE ORGANICS**
(Continued)

Semivolatiles	CAS Number	Practical Quantitation Limits*	
		Ground Water	Low Soil/Sediment[1]
		ug/L	ug/Kg
2-Chloronaphthalene	91-58-7	10	660
2-Nitroaniline	88-74-4	50	3300
Dimethyl phthalate	131-11-3	10	660
Acenaphthylene	208-96-8	10	660
3-Nitroaniline	99-09-2	50	3300
Acenaphthene	83-32-9	10	660
2,4-Dinitrophenol	51-28-5	50	3300
4-Nitrophenol	100-02-7	50	3300
Dibenzofuran	132-64-9	10	660
2,4-Dinitrotoluene	121-14-2	10	660
2,6-Dinitrotoluene	606-20-2	10	660
Diethylphthalate	84-66-2	10	660
4-Chlorophenyl phenyl ether	7005-72-3	10	660
Fluorene	86-73-7	10	660
4-Nitroaniline	100-01-6	50	3300
4,6-Dinitro-2-methylphenol	534-52-1	50	3300
N-Nitrosodiphenylamine	86-30-6	10	660
4-Bromophenyl phenyl ether	101-55-3	10	660
Hexachlorobenzene	118-74-1	10	660
Pentachlorophenol	87-86-5	50	3300
Phenanthrene	85-01-8	10	660
Anthracene	120-12-7	10	660
Di-n-butylphthalate	84-74-2	10	660
Fluoranthene	206-44-0	10	660
Pyrene	129-00-0	10	660
Butyl benzyl phthalate	85-68-7	10	660
3,3'-Dichlorobenzidine	91-94-1	20	1300
Benzo(a)anthracene	56-55-3	10	660
bis(2-ethylhexyl)phthalate	117-81-7	10	660

SW-846, 1986

TABLE 2. PRACTICAL QUANTITATION LIMITS (PQL) FOR SEMIVOLATILE ORGANICS** (Continued)

Semi-Volatiles	CAS Number	Practical Quantitation Limits* Ground Water ug/L	Low Soil/Sediment[1] ug/Kg
Chrysene	218-01-9	10	660
Di-n-octyl phthalate	117-84-0	10	660
Benzo(b)fluoranthene	205-99-2	10	660
Benzo(k)fluoranthene	207-08-9	10	660
Benzo(a)pyrene	50-32-8	10	660
Indeno(1,2,3-cd)pyrene	193-39-5	10	660
Dibenz(a,h)anthracene	53-70-3	10	660
Benzo(g,h,i)perylene	191-24-2	10	660

*PQLs listed for soil/sediment are based on wet weight. Normally data is reported on a dry weight basis, therefore, PQLs will be higher based on the % moisture in each sample. This is based on a 30-g sample and gel permeation chromatography cleanup.

**Sample PQLs are highly matrix-dependent. The PQLs listed herein are provided for guidance and may not always be achieveable.

Other Matrices	Factor[1]
Medium-level soil and sludges by sonicator	7.5
Non-water-miscible waste	75

[1]PQL = [PQL for Ground Water (Table 2)] X [Factor].

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ATTACHMENT MM

Description of the
Burlington Environmental Inc.
Treatment and Storage Area
at the Pier 91 Facility

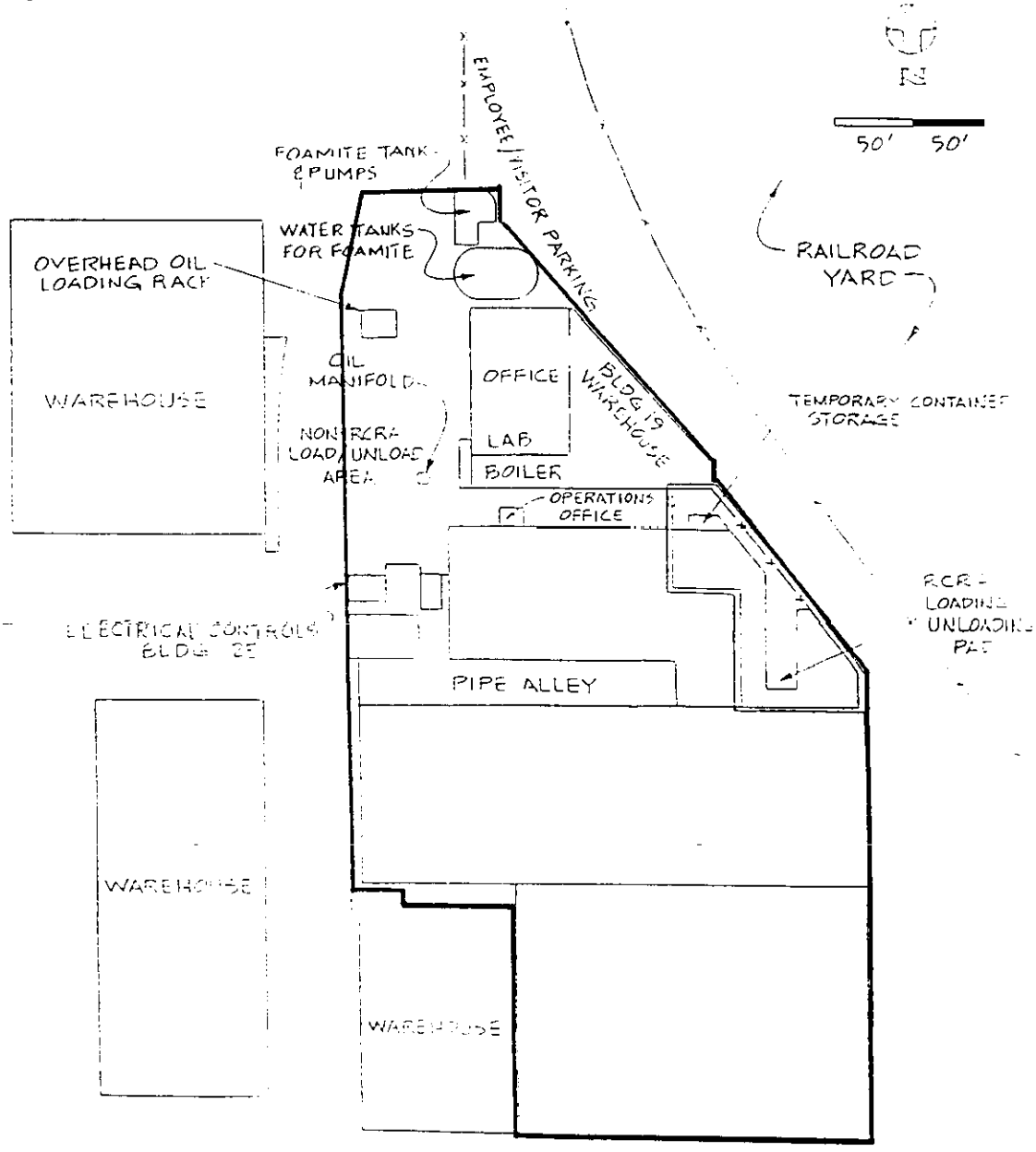
The Burlington Environmental treatment and storage area consists of the following:

1. All areas where Burlington Environmental (formerly Chemical Processors Inc.) has had interim status for dangerous waste management.

2. All areas requested by Burlington Environmental to have final permitted status for dangerous waste management.

3. All solid waste management units on other portions of the contiguous property under Burlington Environmental's control.

The approximate boundary of the treatment and storage area is shown in the figure below.



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HANFORD SITE COMMENTS ON THE SECOND DRAFT OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF DANGEROUS WASTE FOR THE HANFORD FACILITY

ATTACHMENT 17

VAN WATERS & ROGERS, INC. (KENT FACILITY) PERMIT

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ADDENDUM TO THE
PERMIT
FOR THE STORAGE AND TREATMENT
OF DANGEROUS WASTE

ISSUED TO: Van Waters & Rogers Inc.
(Kent Facility)
8201 South 212th Street
Kent, Washington 98032
Telephone: (206) 872-5000

Pursuant to the Stipulation and Agreed Order of Dismissal of an appeal before the Washington State Pollution Control Hearings Board (PCHB NO. 91-235), the following portions of the Dangerous Waste Storage permit, originally issued to the Van Waters & Rogers Inc. Kent facility on October 1, 1991, shall read as reflected on the following pages of this Addendum:

Permit Conditions II.A.7., II.C.2. and Permit Attachment LL.

This Addendum to the Permit is effective as of August 1, 1993 and shall remain in effect until November 4, 2001 unless revoked and reissued under WAC 173-303-830(3), terminated under WAC 173-303-830(5), or continued under WAC 173-303-806(7).

ISSUED BY: WASHINGTON DEPARTMENT OF ECOLOGY

Thomas Eaton

Thomas Eaton, Program Manager
Hazardous Waste and Toxics Reduction
Department of Ecology

Date 7/19/93

II.A.7. Each regulated generator waste stream which is received by the Permittee more than twice a year shall undergo annual full characterization. Full characterization is defined as identification of all dangerous constituents and characteristics, along with accounting for 100% of the material (e.g., 30% oil, 70% water).

a. Annual full characterization, except in the circumstances defined in b. below, shall include laboratory analysis and/or review of existing published or documented data on the dangerous waste.

i. Laboratory analyses must be performed by a laboratory accredited by Washington State under Chapter 173-50 WAC or by the laboratory operated or utilized by the third party facility which will treat, recycle, or dispose of the dangerous waste. The permittee shall review the waste analysis procedures of all third party facilities no less frequently than every two years. Such review shall be conducted as specified by Attachment LL and the Permittee shall not send dangerous waste to third party facilities which do not meet the standards specified in Attachment LL.

ii. Wastes must be analyzed for all hazardous constituents except those which can be demonstrated not to be present in any of that generators waste streams.

iii. The review of existing or documented data must include confirmation by the generator that the process generating the dangerous waste has not changed.

b. In the following circumstances a waste stream shall undergo full characterization consisting solely of laboratory analyses meeting the requirements of II.A.7.a.i. and ii. above, and knowledge as necessary to designate a waste under WAC 173-303-080, Dangerous Waste Lists.

c. In the following circumstances, full characterization must be by analysis only:

i. When the owner/operator has been notified, or has reason to believe, that the process of operation generating the dangerous waste has changed;

ii. When results of check-in screening indicate that the dangerous waste received at the facility does not match the identity of the waste designated on the accompanying manifest or shipping paper;

iii. When the results of check-in screening or analysis at the third party RCRA permitted TSDF which will treat, recycle, or dispose of the dangerous waste indicate that the dangerous waste does not match the identity designated on the accompanying manifest or shipping paper;

iv. The first time a waste undergoes full characterization; and

v. No less more than five years from the last full characterization by analysis.

II.C.2. **Operating Record**

The Permittee shall maintain a written operating record at the facility, consisting of records kept for the length of time specified below. The record can be a compilation of various documents. The Permittee shall also record all information referenced in this Permit in the operating record within 48 hours of the information becoming available. The operating record shall include, but not be limited to, the information listed below.

a. The following records shall be maintained until Closure and Corrective Action are complete and certified.

i. A current map showing the location of dangerous waste management units and non-regulated units within the facility;

ii. A map showing all locations of past dangerous waste management units if different from present locations;

iii. Assessment reports, as per WAC 173-303-360(2)(k), of all incidents that require implementation of the contingency plan;

iv. Record of spills and releases;

v. Written reports and records of verbal notification to the Director and the Administrator to address releases, fires, and explosions;

vi. Annual Reports submitted in compliance with WAC 173-303-220(1) (Generator Report - Form 4) and WAC 173-303-390(2) (TSD Facility Report - Form 5);

vii. All other environmental permits;

viii. Records and results of each waste analysis performed in accordance with this Permit;

ix. Third party TSDF written notification of waste stream acceptance for each waste stream for each shipment;

x. Training records of current personnel; and,

xi. Certifications pursuant to 40 CFR 264.73(b)(9), Annual Waste Reduction Plan.

xii. Records of review of waste analysis procedures of all third-party treatment, storage, or disposal facilities conducted pursuant to Attachment LL and Permit Condition II.A.7.a.i.

b. The following records shall be maintained for a minimum of 5 years. This time period may be extended by the Department or Agency in the event of enforcement action.

i. Manifests and any required unmanifested shipment or exception reports;

ii. Training records of former personnel;

iii. Facility operation and maintenance records and reports prepared pursuant to this Permit;

iv. Progress reports and any required notifications prepared pursuant to this Permit;

v. The notice and certification required by a generator under 40 CFR 268.7. (Land Disposal Restrictions); and,

vi. Records of all inspection and monitoring information, including all calibration and maintenance records which shall include at a minimum:

A. The date and time of data recording;

B. The name of the person taking and recording the information; and,

C. The recorded information itself whether consisting of observation, data measurement, instrument reading or any other monitoring method.

c. Current copies of the following documents (as amended, revised, and modified) shall be maintained at the facility until Closure and Corrective Action are complete and certified.

i. Contingency Plan;

ii. Training Plan;

iii. Waste Analysis Plan;

iv. Documentation of arrangements made with local authorities pursuant to WAC 173-303-340;

v. All closure, interim measures and final corrective action cost estimates, financial assurance documents prepared pursuant to this Permit, as well as the company names and addresses of facility insurers; and,

vi. Closure Plan.

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STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. BOX 47600 • Olympia, Washington 98504-7600 • (206) 459-6000

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DEPT. OF ECOLOGY

March 30, 1993

Susan Schmid
Director of Regulatory Affairs
Van Waters & Rogers Inc.
PO Box 34325
Seattle, WA 98124-1325

Dear Ms. Schmid:

Re: Ecology comments on Attachment LL to the Van Waters & Rogers Inc. (VW&R) Kent facility Permit

Pursuant to the Stipulation and Agreed Order of Dismissal for PCHB No. 91-235 (permit appeal by VW&R), Ecology's comments on the March 15, 1993 Draft of Attachment LL are enclosed. The March 15 draft has responded to most of the deficiencies noted in Ecology's comments on the previous draft (February 5, 1993). However, some deficiencies remain and are identified in the enclosed comments.

As you can see, the remaining deficiencies are not too extensive. I believe that VW&R should be able to make the necessary revisions by the April 13, 1993 date specified in the settlement agreement. Should these revisions prove adequate, this final version of Attachment LL will be incorporated into the facility permit. Christina Beusch will be contacting Allan Bakalian in order to discuss the procedures for finalizing the permit. If you have any questions about these comments, please give me a call at (206) 459-6993.

Sincerely,

Douglas Brown
Hazardous Waste Permits

cc: Christina Beusch, AAG/Ecology
Julie Sellick, NWRO
Carrie Sikorski, EPA Region 10

enclosure

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ENCLOSURE

The following are Ecology's comments on the revised Attachment LL submitted by Van Waters & Rogers (VW&R) on March 15, 1993.

General Comments:

1. The March 15, 1993 cover letter to this draft of Attachment LL refers to an Exhibit 8. However, no Exhibit 8 was provided. Was this exhibit intended to be a blank facility audit form as requested previously (previous comment 31)? (See also comment 10)

2. Please provide more detail concerning laboratory data generation and review procedures. This should include corrective action procedures which will be taken in the event that analytical problems are identified. (See also comment 8)

Specific Comments:

3. **RCRA Status, page LL-3.** In part d., WAC 173-303-395 should also be cited as relevant to the management of ignitable, reactive, or incompatible waste.

4. **Sampling Techniques, page LL-8.** Regarding the table on this page, clarify whether the first three "Waste Stream Parameters" (Chlorinated Hydrocarbons, Purgable Aromatic Hydrocarbons, Purgable Halocarbons) are equivalent to the "Solvent Composition" analysis identified in Exhibits 4 and 5. All other Waste Stream Parameters in this table correspond directly to analyses specified in the exhibits. If these first three parameters do not correspond to an analysis in Exhibit 4 or 5, explain their inclusion here, and provide the necessary sample preservation data for the Solvent Composition analysis.

5. **TSDF Analytical Methods, page LL-15.** As noted previously (previous comment 18), the third sentence of the second paragraph is not entirely correct. It is true that in some instances waste profiling may include knowledge of the waste materials or generating processes as well as existing published or documented data from similar processes. However, for all situations specified in Permit Condition II.A.7.b., full characterization must be by laboratory analysis meeting the requirements of Permit Condition II.A.7.a.i. and ii. Recent revisions to this paragraph have added the *implication* that the *initial* waste profile must be by analysis only. However, there are several situations which trigger the permit requirement for profile by laboratory analysis. The current language of this Attachment LL is not clear that profile by laboratory analysis is periodically required. This section must be revised to be consistent with Permit Condition II.A.7.

6. **TSDF Analytical Methods, page LL-17.** The Standard must be revised to indicate that not only will the methods listed in Exhibit 5 be used, but that they will be applied to all wastes as indicated in Exhibit 6.

7. **TSDF Analytical Methods, page LL-18.** As noted previously (previous comment 26), the second sentence of part d. is misleading. Nonconforming shipments which are rejected by the TSDF may only be returned to the generator from which the shipment was manifested, or to an alternate TSDF. If a waste shipment is manifested from VW&R, that shipment cannot be returned to the original generator. This paragraph must be revised accordingly.

8. **Quality Assurance and Quality Control, page LL-23.** Here or wherever else appropriate, please provide more information concerning laboratory data generation and review procedures. Specify the minimum review results will receive before being confirmed. Indicate proper procedures should problems, such as exceedence of tolerance limits, be identified. (See also comment 2)

9. **Quality Assurance and Quality Control, page LL-24.** As noted previously (previous comment 30), the Standard must define what constitutes "satisfactory" quality assurance and quality control procedures. Clarify that, at a minimum, the TSDF must meet the standards identified in Section 9 of this document.

10. **Permittee Recordkeeping, page LL-25.** Please provide clarification in this document (Attachment LL) about the forms used for documenting review of TSDF methods and practices. Clarify that Exhibit 7 is not the actual audit document but merely verification of review. If possible, please provide a blank audit form for Ecology's review. (See also comment 1)

11. **Exhibit 3.** If references in the column headed Acceptable Use for Waste Stream Parameter Analysis (Ref. Exh. 5) are to be by analysis *number*, the heading should instead reference Exhibit 4. Currently, the analyses are only numbered in Exhibit 4. Alternatively, you may choose to number the analyses in Exhibit 5.

12. **Exhibit 3 and Exhibit 4.** From the table on page LL-8, it *appears* that the "Solvent Composition" analysis requires cold preservation techniques (see also comment 4). However, Exhibit 3 indicates that the sampling container to be used for cold storage (Type 5) is not compatible with the solvent composition analysis. In addition, Exhibit 4 indicates that the Type 5 container is acceptable for the solvent composition analysis. Rectify these inconsistencies.

13. **Exhibit 6.** It is not necessary to include the VW&R permitted waste codes in this table. Ecology recommends that they be deleted. If you choose to retain them, text must be added which removes any implication that only wastes bearing the indicated codes will be subject to analysis. It must be clear that all wastes will be subject to the indicated analyses based only upon the treatment or disposal method.

14. **Exhibit 6, Note 2.** The fact that VW&R is not authorized to store wastes containing PCB or Cyanide is not relevant to the inclusion of these analyses in the waste profile. The purpose of the waste analysis is to identify all hazardous constituents. These analyses must be performed for the purposes of full characterization of a waste. Revise this table to specify the use of PCB and Cyanide analyses as was done in the previous draft of this document.

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VAN WATERS & ROGERS INC.

Washington Department of Ecology

Permit for Storage of Hazardous Waste

Modification No. 1

July 14, 1993

DW 3220.1878

Van Waters & Rogers Inc.
8201 South 212th Street
Kent, Washington 98032
Phone: (206) 872-5000

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VAN WATERS & ROGERS INC.
Washington Department of Ecology
Permit for the Storage of Hazardous Waste
Modification No. 1

Section II.A.12 of Van Waters & Rogers Inc.'s Permit for Storage of Hazardous Waste at 8201 South 212th Street, Kent, Washington, 98032, is hereby modified as follows:

> "The Permittee may store dangerous waste meeting the requirements of this Permit for 120 days or less."

This permit modification, which reduces the time period for storage of hazardous waste from one year to 120 days, is a Class 1 Modification pursuant to WAC 173-303-830(4)(a), and does not require prior approval from Ecology. This modification is immediately effective.

Joe

Date: 7/14/93

Joseph C. Adams, Director
Regulatory Affairs

JUL 20 1993

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Joe C. Adams

Date: 7/14/93

Joseph C. Adams, Director
Regulatory Affairs

9411220.0080

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

FACT SHEET

FOR VAN WATERS & ROGERS INC.
DRAFT DANGEROUS WASTE STORAGE PERMIT
WAD067548966

WA 7210 088

The Washington State Department of Ecology (Ecology) is proposing to issue a Resource Conservation and Recovery Act (RCRA) Permit to Van Waters & Rogers Inc. (VW&R) for its dangerous waste management facility located at 8201 South 212th Street, Kent, Washington 98032. This fact sheet, prepared in accordance with the requirements of WAC 173-303-840(2)(f), describes the facility and its dangerous waste storage activities.

A. **Purpose of the Permitting Process:** VW&R is currently operating at the Kent facility under interim status. The permitting process affords Ecology, interested citizens, and other governmental agencies the opportunity to evaluate whether the facility will comply with the more stringent dangerous waste management requirements necessary for a final RCRA permit. The draft permit sets forth all the applicable requirements with which VW&R must comply during the ten-year duration of the permit. These requirements include but are not limited to the regulations set forth in Chapter 173-303 WAC.

B. **Procedures for reaching a final decision:** During the comment period, the public may review and comment on the draft permit prior to Ecology taking any action on the permit. The comment period will begin on June 27, 1991 and will end on August 12, 1991. Any person interested in commenting on this draft permit must do so within this comment period.

All persons wishing to comment on this permit or request a public hearing should submit their concerns in writing to:

Ms. Judy M. Hockett
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504
(206) 438-7022

Comments should include sufficient supporting material, including any pertinent technical or legal references and citations.

If Ecology receives significant written notice of opposition, or if a request for a hearing is received during the comment period, a public hearing will be held to discuss the proposed permit. The hearing shall be held at a location convenient to residents near the facility. Public notice of the hearing shall be given at least 30 days before the hearing. Any requests for a public hearing accompanied by written opposition to the draft permit should be addressed to Ms. Hockett at the address above.

When making a determination regarding the issuance of this permit to VW&R, Ecology will consider all written comments received during the public comment period; those received during the public meeting (if requested); the requirements of the dangerous waste regulations of Ch. 173-303 WAC, and the agency's permitting policies.

When Ecology makes a final decision to issue, deny, or to modify this draft permit, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final decision. The final decision shall become effective thirty (30) days after the final decision notice unless a review is requested pursuant to Ch. 173-303-845 WAC.

PNW 227-882

C. **Hazardous and Solid Waste Amendments (HSWA):** The U.S. Environmental Protection Agency will add requirements not delegated to the State of Washington, pursuant to the Hazardous and Solid Waste Amendments (HSWA), under a separate public notice.

D. **State Environmental Policy Act (SEPA):** VW&R submitted a SEPA checklist to Ecology on May 28, 1991. The checklist was forwarded to the City of Kent which is SEPA lead agency for this project, on June 3, 1991. The City of Kent will review the SEPA checklist and relevant portions of the RCRA permit application and then make a Threshold Determination. The result of that determination will be either a Determination of Non-Significance (DNS) or a Determination of Significance, which would result in an Environmental Impact Statement (EIS). Ecology will make a decision on the final facility permit only after considering the environmental impacts evaluated in the final DNS or EIS.

E. **Facility Description:** The facility governed by this Permit occupies approximately 11.4 acres. Figure 4-2, reproduced here from the permit application, illustrates the facility location and layout. The facility is bounded on the north by South 212th Street, and on the east, west, and south by adjacent industrial property.

Primary operational activities at VW&R include warehousing, bulk tank storage, repackaging, and transportation of industrial chemicals. Dangerous waste management at the Kent facility consists of transportation and temporary storage of waste streams received from industrial customers (generators). Waste is accepted in sealed 55 gallon drums and stored until sufficient

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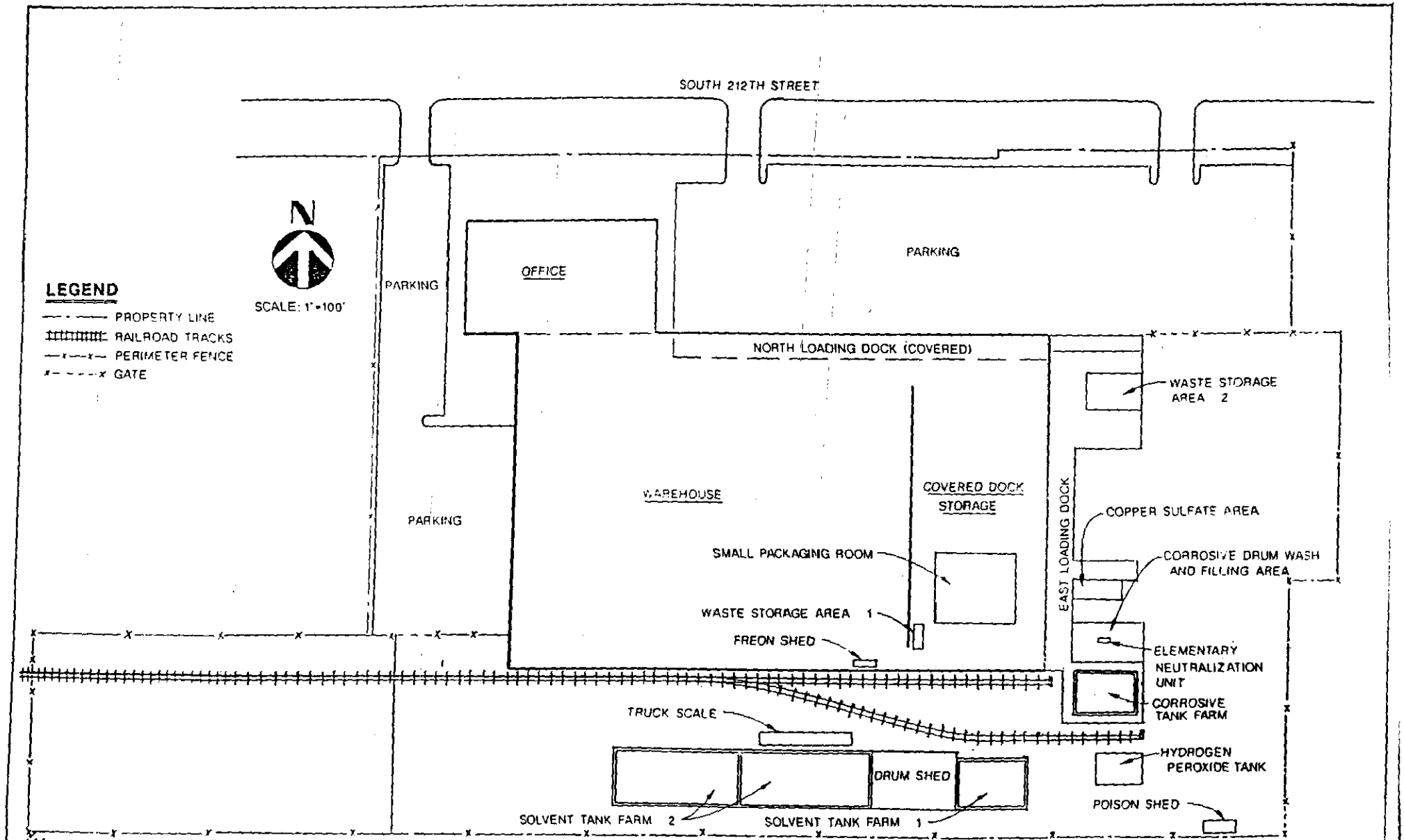

SITE PLAN
VAN WATERS AND ROGERS-KENT

FIGURE 4-2

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PERMIT
FOR THE STORAGE
OF DANGEROUS WASTE

Washington State
Department of Ecology

Mailroom PV-11
PO BOX 47600
Olympia, WA 98504-7600
Telephone: (206) 459-6000

Issued in accordance with the applicable provisions of the Hazardous Waste Management Act, Chapter 70.105 RCW, and the regulations promulgated thereunder in Chapter 173-303 WAC and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and the regulations promulgated thereunder in Title 40 of the Code of Federal Regulations.

ISSUED TO:

Van Waters & Rogers Inc.
(Kent Facility)
8201 South 212th Street
Kent, Washington 98032
Telephone: (206) 872-5000

This Permit is effective as of November 4, 1991 and shall remain in effect until November 4, 2001 unless revoked and reissued, or terminated under WAC 173-303-830(3) and (5) or continued in accordance with WAC 173-303-806(7).

ISSUED BY: WASHINGTON STATE DEPARTMENT OF ECOLOGY

Cindy J. Gilder

Cindy J. Gilder, Section Head
Hazardous Waste Permits
Department of Ecology

Date 10-1-91

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INTRODUCTION

PERMITTEE: VAN WATERS & ROGERS INC.
EPA/STATE IDENTIFICATION NUMBER: WAD067548966

Pursuant to:

Chapter 70.105 RCW, the Hazardous Waste Management Act of 1976, as amended, and regulations codified in Washington Administrative Code (WAC) 173-303, and

Solid Waste Disposal Act (42 U.S.C. 3251 et seq.) as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and

Regulations promulgated by the U.S. Environmental Protection Agency (EPA) codified in Title 40 of the Code of Federal Regulation (40 CFR),

a Permit is issued to Van Waters & Rogers Inc. (hereafter called the Permittee), to operate a dangerous waste storage facility located at 8201 South 212th Street, Kent, Washington at latitude 47 degrees 25 minutes North and longitude 112 degrees 13 minutes West.

The Permittee must comply with all terms and conditions set forth in this Permit and in Attachments AA through KK. When the Permit and the above attachments conflict, the wording of the Permit will prevail. The Permittee must also comply with all applicable state regulations, including Chapter 173-303 WAC (Attachment KK) and as specified in the Permit. Additionally, the Permittee must comply with all applicable federal regulations, including 40 CFR Parts 260 through 264, Part 266, Part 268, and Part 270.

Applicable state and federal regulations are those which are in effect on the date of final administrative action on this Permit and any self implementing statutory provisions and related regulations which, according to the requirements of RCRA (as amended), or state law, are automatically applicable to the Permittee's dangerous waste management activities, notwithstanding the conditions of this Permit.

This Permit is based upon the administrative record, as required by WAC 173-303-840. The Permittee's failure in the application or during the permit issuance process to fully disclose all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time, shall be grounds for the termination or modification of this Permit and/or initiation of an enforcement action, including criminal proceedings.

The Permittee must inform the Director and the Administrator of any deviation from permit conditions or changes in the information on which the application is based which would affect either the Permittee's ability to comply or actual compliance with the applicable regulations or permit conditions or which alters any condition of this Permit in any way.

The Depar nt shall enforce all conditions of this Permit for which the State of ashington is uthorized and all conditions which are designated in this Per t as state requirements only. Any challenges of any permit condition t at concern state requirements, (i.e., conditions of this Permit for which the State of Washington received final autho: zation or conditions which are designated in the Permit as state requirements only) shall be appealed to the Department in accordance with WAC 173-303-845. In the event that the Department does not maintain final authorization, the Agency will enforce all permit conditions except those which are state-only requirements.

The Agency shall enforce all permit conditions which are based on federal regulation promulgated under HSWA, but have not yet been adopted by the State of Washington and have not been included in the state's authorized program. In such capacity, the Agency shall enforce any permit condition based on state requirements if, in the Agency's judgement, the Department should fail to enforce that permit condition, except that in no case shall the Agency enforce any permit condition designated as a state requirement only.

In the event that the State of Washington receives authorization from EPA to implement additional regulations promulgated under RCRA, as amended, the Department shall assume enforcement responsibility for existing permit conditions that are based on these requirements.

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LIST OF ATTACHMENTS

The following listed documents are hereby incorporated, in their entirety, by reference into this Permit. Some of the documents are excerpts from the Permittee's Dangerous Waste Permit Application (most recently amended August 1991). The Department and the Agency have, as deemed necessary, modified specific language in the attachments. These modifications are described in the permit conditions (Parts I through V), and thereby supersede the language of the attachment. These incorporated attachments are enforceable conditions of this Permit, as modified by the specific permit condition.

Attachment AA	Facility Description and General Provisions (Sections 4.2 through 4.4, inclusive, and Figures 4-1 and 4-2 of the Permit Application)
Attachment BB	Part A submitted with the Part B Dangerous Waste Permit Application (submitted to the Department 10-23-88, as amended 8-10-90 and 9-17-90)
Attachment CC	Waste Analysis Plan (Section 6.0 and Appendix 6-A of the Permit Application, revised 8/91) excluding paragraphs 2 and 3 of Section 1.0 in the Plan.
Attachment DD	Security Procedures and Equipment (Section 7.0 of the Permit Application)
Attachment EE	Inspection Program (Sections 8.3 and 8.4, and Appendices 8-A and 8-B of the Permit Application)
Attachment FF	Personnel Training Plan (Sections 15.2 through 15.6, inclusive, and Appendix 15-B of the Permit Application)
Attachment GG	Contingency Plan (Section 10.0 and Appendix 10-A of the Permit Application)
Attachment HH	Closure Plan (Section 16.0 and Appendix 16-A and Appendix 17-A of the Permit Application)
Attachment II	Container Storage Plans and Specifications (Section 20 and Appendix 20-A of the Permit Application)

Attachment JJ	Preparedness and Prevention Measures (Sections 11.0 and 12.0 of the Permit Application)
Attachment KK	Chapter 173-303 WAC (April 1991)

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DEFINITIONS

For purposes of this joint Permit, the following definitions shall apply:

a. The term "permit" shall mean the joint permit issued by the Washington State Department of Ecology, pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC, and by the Environmental Protection Agency, Region 10, pursuant to 42 U.S.C. 3251 et seq. and 40 CFR Parts 124 and 270.

b. The term "Director" shall mean the Director of the Washington State Department of Ecology or a designated representative. The Section Head (with the address as specified on page one of this Permit) is a duly authorized and designated representative of the Director for purposes of this Permit.

c. The term "Administrator" shall mean the Administrator of the U.S. Environmental Protection Agency (EPA) or a designated representative. The Director, Hazardous Waste Division, EPA Region 10, (with the address as specified on page one of this Permit), is a duly authorized and designated representative of the Administrator for purposes of this Permit.

d. The term "Department" shall mean the Washington State Department of Ecology, (with the address as specified on page one of this Permit).

e. The term "Agency" shall mean the U.S. Environmental Protection Agency, Region 10, (with the address as specified on page one of this Permit).

f. The terms "facility" or "site" shall mean that identified in the physical description of the property (including structures, appurtenances, and improvements) used to manage dangerous waste. This property description is as set forth in Attachment AA of this Permit.

g. The term "solid waste management unit" shall mean any discernible unit at which solid waste has been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which hazardous waste or hazardous constituents (40 CFR Part 261, Appendix 8) have been routinely and systematically released.

DEFINITIONS (continued)

h. The term "RCRA Facility Investigation" shall mean an investigation of releases of hazardous wastes and hazardous constituents from solid waste management units.

i. The term "release" shall mean any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

j. All definitions contained in 40 CFR Sections 124.2, 260.10, 270.2, 264.141, and WAC 173-303-040 are hereby incorporated, in their entirety, by reference into this Permit. Any of the definitions used above, (a) through (i), shall supersede any definition of the same term given in 40 CFR Sections 124.2, 260.10, 270.2, 264.141, and WAC 173-303-040. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

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PART I - STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

The Permittee is authorized to store dangerous waste in accordance with the conditions of this Permit and in accordance with the applicable provisions of Chapter 173-303 WAC. Any storage of dangerous waste by the Permittee at this facility that is not authorized by this Permit or by Chapter 173-303 WAC and for which a permit is required under Section 3005 of RCRA, is prohibited.

I.B. GENERAL PERMIT CONDITIONS

I.B.1. The general permit conditions under WAC 173-303-810, final facility standards under WAC 173-303-600, and, when the Permittee is a generator, generator requirements under WAC 173-303-170, are incorporated by reference into this Permit and must be adhered to by the Permittee.

I.B.2 The Permittee shall comply with all applicable requirements of 40 CFR Part 270.30(a)-(i), (j)(1), (k), 1(1)-(1)(3), (1)(5)-(1)(8), (1)(10), and (1)(11).

I.B.3. The list of attachments on Pages 5 and 6 are incorporated by reference into this Permit. Facility operations must be in accordance to the contents of the attachments and this Permit.

I.C. PERMIT MODIFICATIONS

Permit Modification shall be done according to EPA's three tiered modification system, 40 CFR 270.42, and the preamble to this regulation (53FR37912, September 28, 1988). This includes any modification from design drawings to as-builts.

I.D. SEVERABILITY

I.D.1. **Effect of Invalidation**

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision which forms the basis for any condition of this Permit does not affect the validity of any other state or federal statutory or regulatory basis for said condition.

I.D.2. **Final Resolution**

In the event that a condition of this Permit is stayed for any reason, the Permittee shall continue to comply with the related applicable and relevant interim status standards in WAC 173-303-400 until final resolution of the stayed condition unless the Director and the Administrator determine compliance with the related applicable and relevant interim status standards would be technologically incompatible with compliance with other conditions of this Permit which have not been stayed.

I.E. COMPLIANCE NOT CONSTITUTING DEFENSE

Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3007, 3008, 3013, or 7003 of RCRA (42 U.S.C. Sections 6927, 6928, 6934 and 6973), Section 104 or 107, and 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA) as amended, or any other federal or state law governing protection of public health or the environment.

I.F. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to the Director or the Administrator shall be signed and certified in accordance with WAC 173-303-810(12) and (13) or 40 CFR § 270.11 for HSWA provisions.

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I.G. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit, at the time of submission, in accordance with WAC 173-303-810(15) or 40 CFR Part 2 and 40 CFR §270.12 for HSWA provisions.

I.H. PERMIT EXPIRATION AND CONTINUATION

This Permit and all conditions herein shall remain in effect beyond the Permit's expiration date until final permit determination if the Permittee has submitted a timely, complete application (under 40 CFR Section 270 Subpart B for HSWA provisions and WAC 173-303-806), and, through no fault of the Permittee, the Director or the Administrator have not made a final permit determination, through their respective authorities, as set forth in WAC 173-303-840 and 40 CFR Section 270.51 for HSWA provisions. This Permit may be reviewed 5 years after its effective date and modified, as necessary, in accordance with 40 CFR 270.41.

I.I. REPORTS, NOTIFICATIONS AND SUBMISSIONS

All reports, notifications or other submissions which are required by this Permit to be sent or given to the Director and the Administrator should be sent certified mail or given to:

Supervisor, Hazardous Waste Section
Department of Ecology
Northwest Regional Office
3190 160th Ave S.E.
Bellevue, Washington 98008-5452
Telephone: (206) 649-7000

Chief, Waste Management Branch
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, HW-12
Seattle, Washington 98101
Telephone: (206) 553-2804

These phone numbers and addresses may change.

I.J. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

Current copies of the following documents, as amended, revised, and modified, shall be maintained at the facility. These documents must be maintained until closure is complete and certified by an independent, registered professional engineer, unless a lesser time is specified in the Permit.

1. The Permit and all attachments;

2. The Part B Permit Application; and

3. The facility operating record.

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I.K. WASTE MINIMIZATION

I.K.1. **Waste Minimization Certification**

In accordance with 40 CFR 264.73(b)(9), the Permittee must place a certification in the operating record on an annual basis that:

(1) A program is in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and,

(2) The proposed method of treatment, storage or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.

I.K.2. **Biennial Report**

In accordance with 40 CFR 264.75, the Permittee shall submit to the Regional Administrator, within one hundred and fifty (150) days of the effective date of the Permit and on March 1 of each even numbered year thereafter, a report documenting efforts to reduce the volume and toxicity of waste generated, including estimates of the reduction in volume or toxicity achieved since the previous report by the facility's waste minimization program certified in I.K.1.

PART II - GENERAL FACILITY CONDITIONS

II.A. GENERAL WASTE MANAGEMENT

Conditions listed under section II.A. of this permit apply only to dangerous wastes received by the Permittee from off-site generators, for which the Permittee has signed the TSDF section of the Manifest.

II.A.1. The Permittee is authorized to receive the waste specified in Attachment BB from sources off-site for storage. These wastes shall be received only from regulated generators with a valid State/EPA identification number. These wastes shall be accompanied by a written notification of waste stream acceptance from a facility with interim status or RCRA permitted TSDF, and be managed only under the conditions of this Permit.

II.A.2. The Permittee must inform the generator in writing that he has the appropriate permits for and will accept the waste the generator is shipping as required by WAC 173-303-290(3). The Permittee must keep a copy of this written notice as part of the operating record for at least three years. The length of time which these notices must be kept will be extended if questions arise concerning a specific generator.

II.A.3. New test methods shall be used upon the effective date of the Federal or State rules or laws that mandate the use of the test method.

II.A.4. The Permittee shall allow independent sampling and sample splitting when requested by the Department or Agency.

II.A.5. If, as a result of a fire, explosion, release, absence of container integrity or lack of waste stream documentation observed during a RCRA inspection of the facility, the Department or Agency has reason to believe that there exists a violation of law, regulation or permit conditions or storage of unauthorized wastes or improperly segregated incompatible waste streams or a threat to human health or the environment, either the Department or the Agency may request the Permittee to submit samples of the waste stream identified to be the source of the violation or threat. The Permittee shall have such samples analyzed by an independent, accredited laboratory.

II.A.6. Waste brought on-site cannot leave its respective unloading area until the manifest number has been recorded on logging and tracking forms.

II.A.7. Each regulated generator waste stream which is received by the Permittee more than twice a year shall undergo annual full characterization. Full characterization is defined identification of all dangerous constituents and characteristics, along with accounting for 100% of the material (e.g., 30% oil, 70% water).

a. Annual full characterization, except in the circumstances defined in b. below, shall include waste analyses performed by a laboratory accredited by Washington State under Chapter 173-50 WAC, and/or review of existing published or documented data on the dangerous waste. Wastes must be analyzed for all hazardous constituents except those which can be demonstrated not to be present in any of that generator's waste streams. The review of existing or documented data must include confirmation by the generator that the process generating the dangerous waste has not changed.

b. In the following circumstances, full characterization must be by analysis only:

i. when the owner/operator has been notified, or has reason to believe, that the process of operation generating the dangerous waste has changed;

ii. when results of check-in screening indicate that the dangerous waste received at the facility does not match the identity of the waste designated on the accompanying manifest or shipping paper;

iii. when the results of check-in screening or analysis at the third party RCRA permitted TSDF which will treat, recycle, or dispose of the dangerous waste indicate that the dangerous waste does not match the identity designated on the accompanying manifest or shipping paper.

iv. the first time a waste undergoes full characterization; and,

v. no less than five years from the last full characterization by analysis.

II.A.8. The Permittee shall comply with all applicable requirements and prohibitions in 40 CFR Part 268 (Land Disposal Restriction) for the storage and treatment of restricted wastes.

II.A.9. All testing performed as a result of the requirements of 40 CFR Part 268, Subparts C or D, shall be performed as required by 40 CFR 264.13, General Waste Analysis.

II.A.10. The Permittee must use the Toxicity Characteristic Leaching Procedure (TCLP) or use knowledge of the waste to determine whether a waste exhibits the characteristic of toxicity, as defined in 40 CFR 261.24 and WAC 173-303-090(8).

II.A.11. When there is a discrepancy between a Generator's waste designation and the Permittee's waste designation, as determined by the screening analysis at VW&R or the third party receiving TSDF, if further analyses prove the waste does not match the generators profile or the manifest description, the following steps shall be taken:

a. The generator will be informed of the discrepancy and given the following options:

i. amend the current profile or manifest, or submit a new profile which properly represents the waste; or

ii. provide the Permittee or third party receiving TSDF permission to transport the load back to the generator or to an alternative permitted TSD facility.

II.A.12 The Permittee may store dangerous waste meeting the requirements of this Permit for one year or less.

II.A.13 The Permittee shall not conduct a significant expansion of dangerous waste management under this Permit until the conditions in Section IV.A. of this Permit are implemented. Following implementation of conditions in Section IV.A. the Permittee may expand to the capacities listed in Attachment BB subject to condition IV.B.

II.B. PREPAREDNESS AND PREVENTION

II.B.1. The Permittee shall ensure all water related safety equipment such as eyewash units and emergency showers shall remain operable at all times, including during periods of subfreezing temperatures.

II.B.2. The Permittee shall comply with the requirements of 40 CFR Part 264.31 and assure that the facility is designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

II.C. RECORDKEEPING AND REPORTING

II.C.1. In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall comply with all the applicable notification, certification, and recordkeeping requirements described in 40 CFR 268.7, and 40 CFR 264.73(b)(11), (12), (15), and (16).

II.C.2. Operating Record

The Permittee shall maintain a written operating record at the facility, consisting of records kept for the length of time specified below. The record can be a compilation of various documents. The Permittee shall also record all information referenced in this Permit in the operating record within 48 hours of the information becoming available. The operating record shall include, but not be limited to, the information listed below.

a. The following records shall be maintained until Closure and Corrective Action are complete and certified.

i. A current map showing the location of dangerous waste management units and non-regulated units within the facility;

ii. A map showing all locations of past dangerous waste management units if different from present locations;

iii. Assessment reports, as per WAC 173-303-360(2)(k), of all incidents that require implementation of the contingency plan;

iv. Record of spills and releases;

v. Written reports and records of verbal notification to the Director and the Administrator to address releases, fires, and explosions;

vi. Annual Reports submitted in compliance with WAC 173-303-220(1) (Generator Report - Form 4) and WAC 173-303-390(2) (TSD Facility Report - Form 5);

vii. All other environmental permits;

viii. Records and results of each waste analysis performed in accordance with this Permit;

ix. Third party TSDF written notification of waste stream acceptance for each waste stream for each shipment;

x. Training records of current personnel; and,

xi. Certifications pursuant to 40 CFR 264.73(b)(9), Annual Waste Reduction Plan.

b. The following records shall be maintained for a minimum of 5 years. This time period may be extended by the Department or Agency in the event of enforcement action.

i. Manifests and any required unmanifested shipment or exception reports;

ii. Training records of former personnel;

iii. Facility operation and maintenance records and reports prepared pursuant to this Permit;

iv. Progress reports and any required notifications prepared pursuant to this Permit;

v. The notice and certification required by a generator under 40 CFR 268.7. (Land Disposal Restrictions); and,

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vi. Records of all inspection and monitoring information, including all calibration and maintenance records which shall include at a minimum:

A. The date and time of data recording;

B. The name of the person taking and recording the information; and,

C. The recorded information itself whether consisting of observation, data measurement, instrument reading or any other monitoring method.

c. Current copies of the following documents (as amended, revised, and modified) shall be maintained at the facility until Closure and Corrective Action are complete and certified.

i. Contingency Plan;

ii. Training Plan;

iii. Waste Analysis Plan;

iv. Documentation of arrangements made with local authorities pursuant to WAC 173-303-340;

v. All closure, interim measures and final corrective action cost estimates, financial assurance documents prepared pursuant to this Permit, as well as the company names and addresses of facility insurers; and,

vi. Closure Plan.

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II.D. CLOSURE

II.D.1. The Permittee shall submit a proposed background sampling plan to the Department at least 8 weeks in advance of the scheduled collection of background samples. The plan shall include a map showing the proposed sampling locations. The Department shall have 8 weeks, from the date the Department receives the proposed background locations, to accept or deny the sampling proposal. Failure to respond within 8 weeks will constitute acceptance.

II.D.2. The Permittee shall notify the Department at least 10 working days in advance of the scheduled collection of background samples.

II.D.3. The background analysis must be statistically defensible considering local area conditions (e.g., soil heterogeneity, etc.). This shall require, at a minimum:

a. a sufficient number of samples collected and analyzed to provide a representative measure of background concentration for hazardous constituents and hazardous substances; and

b. outliers to the distribution of background samples must be excluded from the determination of background levels of hazardous constituents and substances.

II.D.4. If the Department determines that implementation of the approved background sampling plan has not adequately or accurately quantified background conditions, the Department may require additional sampling and analysis.

II.D.5. Clean closure shall require the removal of all hazardous substances under Chapter 173-340 WAC in addition to all hazardous constituents listed in 40 CFR Part 261 Appendix VIII.

a. Removal to demonstrate clean closure means attaining the lower of:

i. Background environmental levels (or the practical quantitation limit if background environmental levels can not be quantified for a hazardous constituent or substance); or,

ii. The cleanup standards of Chapter 173-340 WAC.

b. For hazardous constituents derived from waste or waste residues specified in WAC 173-303-610(2)(b)(ii) (state only wastes), removal must also assure the hazardous constituents are below the waste designation limits.

II.D.6. Analysis at the time of closure shall be conducted for all hazardous constituents listed in 40 CFR Part 261, Appendix VIII. The Permittee may submit a list of hazardous constituents for which analysis will not be conducted if the Permittee wishes to demonstrate that a shorter list of analyses is warranted. Such a list should be submitted to the Department 180 days before closure sampling begins, and must include justification of why each substance could not be suspected of being present at the facility. The Department will have 8 weeks from the date the list of proposed excluded substances is received to accept or deny the proposal. Failure to respond within 8 weeks will constitute acceptance. Denial will be subject to the dispute resolution procedures specified in permit condition II.H. The Department may, with reason, require analyses for additional hazardous substances, as defined by Chapter 173-340 WAC.

II.D.7. The Permittee shall use SW-846 protocol for low level soil detection limits. Achieving low level detection may require sonication or Soxhlet extraction methods. The Department may require specialized sample collection or analysis techniques in accordance with WAC 173-340-707.

II.D.8. The following are specific laboratory procedures to be followed during closure:

a. When using GC/MS, peaks will be identified as "Tentatively Identified Compounds" (TICs) if they are greater than 10% of the nearest internal standard response. If possible, up to 10 TICs shall be reported for each volatile organic analysis (VOA) and up to 20 TICs shall be reported for each semi-VOA. The Department may, with reason, require the identification of additional peaks. If a priority pollutant is discovered it shall be quantified.

b. When AA or ICP is utilized, cold vapor atomic absorption shall be used for mercury analysis.

c. Metal analysis shall use SW-846 Method 3050, or EPA method 200.2 for sample preparation for metals to be analyzed by flame AA or ICP.

II.D.9. The activities of the independent registered engineer to assure that closure is conducted in accordance with the approved plan shall specifically include, but not be limited to, the following:

a. Observation of all pre-designated locations to be biased sampled.

b. The observation of the collection of background samples.

c. Determining compliance with sampling protocols.

d. Review of laboratory results before discharge of decontaminated rinsate.

II.E. FINANCIAL ASSURANCE AND LIABILITY REQUIREMENTS

II.E.1. The Permittee shall demonstrate continuous compliance with WAC 173-303-620(4) by providing documentation of financial assurance to the Director as required by WAC 173-303-620(10). Such documentation shall be adjusted annually for inflation in compliance with WAC 173-303-620(3)(c) and entered into the facility operating record per WAC 173-303-620(3)(d) and Permit Condition II.C.2.c.v. Annual adjustment for inflation shall not require a permit modification under WAC 173-303-830.

a. Financial assurance, prior to future adjustment for inflation, shall be in at least the amount of the closure cost estimate in Attachment HH as revised by the requirements of Permit Condition II.E.3

b. The pay-in period of a trust fund shall not exceed the term of the Permit.

II.E.2. The Permittee shall report to the Director and the Administrator any claims made on the liability insurance fund. The report shall be submitted in writing within 30 days of the filing of such claims and shall contain information on the number and type of claims filed, the amount of each claim, and a description of the occurrence that led to the claim.

II.E.3. The Permittee shall submit to the Agency and the Department, no less than 90 days after the Permit effective date, a revised closure cost estimate and financial assurance based upon the requirements of this Permit. This shall include

but not be limited to the requirements of conditions in section II.D.

II.F. LAND DISPOSAL RESTRICTIONS

The Permittee shall not in any way dilute a restricted waste or the residue from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with 40 CFR Part 268, Subpart D.

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II.G. SCHEDULE EXTENSIONS

The Permittee shall notify the Department, in writing, as soon as possible of any deviations or expected deviations from any schedules of Parts I through V or Attachments AA through KK of this Permit. The Permittee shall include with the notification all information supporting its claim that it has used best efforts to meet the required schedules. If the Director or the Administrator determines that the Permittee has made best efforts to meet the schedules of this Permit, the Director or the Administrator shall notify the Permittee in writing by certified mail that the Permittee has been granted an extension. Such a revision shall not require a permit modification under 40 CFR Section 270.41. Copies of all letters pursuant to this permit condition shall be kept in the Operating Record.

II.H. TRAFFIC MANAGEMENT

II.H.1 Vehicles used for the transport of dangerous waste to or from the facility shall be parked only in designated loading/unloading zones.

PART III - CONTAINERS

III.A. CONTAINER MANAGEMENT AREAS AND ACCUMULATION LIMITS

III.A.1. The Permittee may store containerized waste in the following areas (as defined in Attachment AA, Figure 4-2) up to the amounts specified, provided improvements listed in section IV.A. of this permit are completed:

Storage Area 1	4,400 gallons of containerized dangerous waste
Storage Area 2	17,600 gallons of containerized dangerous waste

III.A.2. The permittee may load and unload dangerous waste in the covered North Loading Dock and the East Loading Dock (as defined in Attachment AA, Figure 4-2). All containerized waste shall be logged in, and moved to a designated storage area.

III.B. CONTAINER MANAGEMENT PRACTICES

III.B.1. Drummed waste shall not be placed or stored in rows more than two (2) drums wide. The Permittee shall maintain aisle separation as required by the Uniform Fire Code with a minimum of three (3) feet of aisle space along both sides of the length of each row of containers.

III.B.2. Incoming and outgoing containers in loading/unloading areas shall not be placed more than six (6) feet 10 inches high including pallets.

III.B.3. The Permittee shall ensure that an aisle which is at least eight (8) feet wide is maintained in front of areas requiring ingress/egress such as maneuvering of containers by forklift.

III.B.4. No containers, except those that are empty as defined in WAC 173-303-160, may be placed on their sides.

III.B.5. Drums stored within designated storage areas shall be stacked according to the requirements in the Uniform Fire Code, or no more than two high. Tote tanks shall not be stored more than one high.

III.B.6. Containers holding off-site dangerous waste, for which the Permittee has signed the TSDF section of the Manifest, shall not be stored temporarily anywhere within the facility, other than defined storage areas, for longer than 24 hours, or until close of business on the next working day. Temporary time limitation on container placement includes loading/unloading areas. This provision, specifically does not apply to VW&R satellite accumulation areas operated in accordance with applicable regulation.

III.B.7. The Permittee shall keep all dangerous waste containers securely closed except when adding or removing waste.

III.C. CONDITION OF CONTAINERS

If a container holding dangerous waste is not in good condition (e.g., exhibits severe rusting, structural defects, etc.), the Permittee shall transfer the dangerous waste from that container to a container which is in good condition, or to an overpack container, within 24 hours. The damaged container shall be managed as a dangerous waste unless it can be considered empty pursuant to WAC 173-303-160.

III.D. IDENTIFICATION OF CONTAINERS

III.D.1. The Permittee shall ensure that all dangerous waste containers are marked and labeled in accordance with the requirements specified in U.S. Department of Transportation regulations 49 CFR Part 172.

III.D.2 The Permittee shall ensure that labels are placed on the container side, that the labels are readable, and that the labels are not obscured.

III.D.3. Empty containers shall have their Dangerous Waste labels removed immediately upon being rendered empty.

III.E. COMPATIBILITY

III.E.1. The Permittee shall ensure that all containers used for dangerous waste management are made of or lined with materials which will not react with and are otherwise compatible with the dangerous waste to be stored.

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III.E.2. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same container, and shall not place dangerous waste in an unwashed container that previously held an incompatible waste or material.

III.E.3. The Permittee shall ensure that all dedicated and non-dedicated equipment used for transfer of dangerous waste to or from containers (pumps, hoses, piping, valves, etc.) is compatible with the wastes, and is decontaminated before it is used for the transfer of incompatible wastes, as defined in WAC 173-303-395(1)(b).

III.E.4. Incompatible wastes, as defined in WAC 173-303-040, shall not be placed or stored within the same secondary containment area.

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III.F. APPROVED WASTES

The Permittee may store all dangerous wastes listed in the Part A Permit Application (Permit Attachment BB).

PART IV - FACILITY COMPLIANCE REQUIREMENTS

IV.A. REQUIREMENTS TO DEMONSTRATE NET INCREASE IN PROTECTION UNDER WASHINGTON'S HAZARDOUS WASTE SITING CRITERIA

IV.A.1. All load/unload areas shall be sealed with a coating impervious to water and stored waste.

IV.A.2. Secondary containment for container storage areas 1 and 2 shall be sealed with a coating impervious to water and stored waste.

IV.A.3. A roof shall be constructed over Storage Area 2 to minimize collection and management of rain water.

IV.A.4. Inspection of the container storage areas, including sumps, base, berms, and roof shall occur daily.

IV.B. CONSTRUCTION SCHEDULE

IV.B.1. All load/unload areas and secondary containment for container storage areas shall be sealed with a coating impervious to water and stored waste.

IV.B.2. The following construction activities shall be completed within the time specified. Time periods begin on the Permit effective date.

Storage Area 1

6 months: Upgrade secondary containment according to plans and specifications in Attachment II of this Permit.

Storage Area 2

6 months: Upgrade secondary containment and construct roof to cover storage area according to plans and specifications in Attachment II of this Permit.

Load\Unload Areas

3 months (following the onset of driest weather period after effective date of the permit):

Resurface the load/unload areas with impermeable coating.

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IV.C. GENERAL FACILITY COMPLIANCE REQUIREMENTS

IV.C.1. The Permittee may not operate the facility in exceedence of approved Interim Status capacity prior to the completion of all items specified in permit conditions IV.B.1. and IV.B.2.

IV.C.2. The Permittee may not conduct a significant expansion of dangerous waste management, as defined in WAC 173-303-282(3)(p), under this Permit until the conditions in Section IV.A. of this Permit are implemented. Following implementation of conditions in Section IV.A. the Permittee may expand to the capacities listed in Attachment BB subject to condition IV.C.1.

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PART V - PERMIT BY RULE

V.A. GENERAL CONDITIONS

V.A.1. The Permittee shall comply with the terms of the Municipality of Metropolitan Seattle (METRO) Waste Discharge Authorization, Number 267 (effective February 14, 1991), for the discharge from the elementary neutralization unit unless authorized by METRO due to special circumstances or emergencies.

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HANFORD SITE COMMENTS ON THE SECOND DRAFT OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF DANGEROUS WASTE FOR THE HANFORD FACILITY

ATTACHMENT 18

PAGE CHANGES, HANFORD FACILITY CONTINGENCY PLAN JANUARY 5, 1994

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HANFORD FACILITY CONTINGENCY PLAN

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CONTENTS (continued)

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LIST OF FIGURES

LIST OF TABLES

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3.0 EMERGENCY COORDINATORS

The overall responsibility for implementation of this Hanford Facility Contingency Plan (Plan) lies with the building emergency director (BED) or their designated alternates. The BED has the responsibilities of the Emergency Coordinator as discussed in WAC 173-303-360 and is also the Event Commander for facility related events. A list of all BEDs and alternates is maintained at various locations throughout the Hanford Facility, and these individuals can be reached 24 hours per day. The BEDs have the authority to commit all necessary resources (both equipment and personnel) to respond to any emergency. Additional responsibilities have been delegated to the Hanford Fire Department personnel who are authorized to act for the BED when the BED is absent. These Hanford Fire Department personnel have the authority to commit all necessary resources (both equipment and personnel) to respond to any emergency.

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Response by a BED (or an Emergency Coordinator) usually is obtained through the DOE-RL single point-of-contact* by dialing telephone number 911 or 373-3800 or 375-2400. The single point-of-contact has been designated as the contact point to mobilize a response to any Hanford Facility emergency. The single point-of-contact is available at all times and has the responsibility to initiate notifications to the BED or alternate to begin responses to emergencies, as well as to dispatch emergency responders (Hanford Fire Department, Hanford Patrol, or ambulance services). All emergency notifications to the BED, building managers, etc., can be made directly from the affected TSD unit or through the single point-of-contact.

The unit-specific DOE-RL technical contact responds to regulatory agency inquiries regarding this Plan. The unit-specific DOE-RL technical contact is accessed by contacting 373-3800 or 375-2400.

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*The single point-of-contact is the Hanford Patrol Operations Center (911 or 373-3800) and/or the Pacific Northwest Laboratory Security Center (375-2400).

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5.0 INCIDENT RESPONSE

Incident response procedures have been established for each specific TSD unit. The initial response to any emergency will be to immediately protect the health and safety of persons in the immediate area. Identification of released material is essential to determine appropriate protective actions. Containment, treatment, and disposal assessment will be the secondary responses.

The following sections describe actions for personnel for several different types of incidents, including a generic response, that might occur on the Hanford Facility. Regardless of how an incident is classified, minimum on-site notification requirements exist to assure the appropriate organizations are contacted and that the incident is correctly classified.

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5.1 INCIDENT GENERIC RESPONSES

5.1.1 Discoverer

1. The discoverer makes immediate notifications immediately to potentially affected personnel (including the BED for a TSD unit incident, if on site) of the incident.

2. Immediately notifies the single point-of-contact (911* or 375-2400) and provides all known information, if the information can be obtained without jeopardizing personnel safety, including the following:

   - Name(s) of chemical(s) involved and amount(s) spilled, on fire, or otherwise involved, or threatened by, the incident
   - Name and callback telephone number of person reporting the incident
   - Location of incident (identify as closely as possible)
   - Time incident began or was discovered
   - Where the materials involved are going or might go, such as into secondary containment, under doors, through air ducts, etc.

---

*The DOE-RL and other contractor personnel are trained to notify the Hanford Emergency number (911 from onsite telephones and 375-2400 from 375 prefix telephones) for immediate dispatch of the Hanford Fire Department for fire, ambulance services, hazardous materials/mixed waste response, and for the Hanford Patrol. Hanford Patrol, who operates the 811 number, and Pacific Northwest Laboratory Security, who operates the 375-2400 number, notify other organizations and contractors to ensure appropriate actions are taken.

- Source and cause, if known, of spill or discharge
- Name(s) of anyone contaminated or injured in connection with the incident
- Any corrective actions in progress
- Anyone else who the discoverer has contacted.

5.1.2 Single Point-of-Contact

1. Initiates notification to the BED, or one of the alternates if the BED cannot be reached immediately, to arrange immediate response to the incident
2. Requests immediate response from the Hanford Fire Department for fire, ambulance service, and/or hazardous material/mixed waste incidents
3. Contacts the Hanford Patrol for traffic control and security measures, as needed, based on the report of the discoverer
4. Initiates notification to appropriate management of the spill or release incident
5. Supports the BED in providing further notification and coordination of response activities if needed
6. Activates or requests activation of the appropriate alarm signals (as required) for the affected building or affected 200, 300, or 400 Areas, when the BED determines that protective actions are necessary
7. Notifies the emergency response organizations
8. Prompts the affected area emergency control centers (ECC) if requested by the BED or other authorized persons
9. Prompts activation of the DOE-RL Emergency Action and Coordinating Team (EACT), if necessary, to recommend protective actions for areas outside the Hanford Facility.

5.1.3 Building Emergency Director (or alternate)

1. Sounds appropriate alarms to notify occupants
2. Notifies the single point-of-contact if additional support or an area evacuation is needed
3. Activates the building emergency response organization as necessary
4. Arranges for care of any injured employees

7.0 EMERGENCY EQUIPMENT AND RESOURCES

7.1 HANFORD FACILITY EMERGENCY CONTROL CENTERS

The ECCs are those locations staffed to provide assistance to building emergency organizations in an emergency situation. The ECCs are established to support and to provide overall direction of emergency events occurring at locations within their geographic area of responsibility, within the Hanford Facility. This includes acquisition of and assignment of resources to respond to emergency events. Responsibilities also include personnel protection (employee and public), TSD unit safety, and environmental protection. The establishment of ECCs ensures that notification and communication of emergency conditions are communicated properly.

There are six ECCs located throughout the Hanford Facility and Hanford Site (Table 1).

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7.2 COMMUNICATIONS EQUIPMENT

The Hanford Facility has alarm systems that are monitored by the Hanford Fire Department and the Hanford Patrol Operations Center. The alarm signals that exist at the Hanford Facility are identified in Table 2. The TSD unit operations personnel also may use telephones, building PA systems, portable radios, and cellular telephones to summon assistance.

7.3 FIRE CONTROL EQUIPMENT

Many Hanford Facility buildings are equipped with automatic fire-suppression (sprinkler) systems. Portable fire extinguishers are located in working areas in compliance with National Fire Protection Association safety codes. Each Class ABC extinguisher is capable of suppressing fires involving ordinary combustible materials, flammable liquids, oils, paints, flammable gases, and electrical equipment. All extinguishers comply with the National Fire Code standards for portable extinguishers and are inspected monthly. The inspections are recorded on tags attached to each extinguisher.

7.4 PERSONAL PROTECTIVE EQUIPMENT

The TSD units have safety showers and eyewash stations, located as necessary, for personnel protection. Drainage from these stations is contained. In addition to these stations, portable eyewash equipment is maintained at protective storage areas as necessary. These eyewash/shower stations are inspected regularly.

Protective clothing and respiratory protective equipment are maintained for use during both routine and emergency operations. This equipment is identified in the unit-specific contingency plans.

Table 1. Emergency Control Centers.

Emergency Control Center	Responsibility
Northern Area Emergency Control Center Location: 2750-E, 200 East Area	Geographic area of responsibility: All 100 and 200 Areas plus the 600 Area north of the WYE Barricade bounded by the Columbia River and Highway 240.
300 Area Emergency Control Center Location: 3701-D, 300 Area	Geographic area of responsibility: RCHS, RCHC, RCHN, 1100 and 3000 Areas plus the 600 Area south of the WYE Barricade bounded by the Columbia River and Highway 240.
400 Area Emergency Control Center Location: Fast Flux Test Facility, 400 Area	Geographic area of responsibility: 400 Area.
3000 Area Emergency Control Center Location: Pacific Northwest Laboratory Materials Reliability Center Building	Geographic area of responsibility: All Pacific Northwest Laboratory buildings located in RCHN area.
Emergency Management Center Location: 1170 Building	Area of responsibility: Responsible for the remaining 600 Area not covered by the area ECCs, assisting area ECCs, coordinating the Facility-wide response to emergencies, and serving as the focal point for other Hanford Site contractors and DOE-RL during emergencies.
DOE-RL Emergency Control Center Location: Federal Building, Richland	Area of responsibility: Responsible for providing overall direction for all Hanford Facility emergency situations involving the DOE-RL and/or contractor personnel, ensuring direct interface with all offsite agencies for mitigation and protection of offsite populations, facilities, and the environment.

RCHS = Richland South.
RCHC = Richland Central.
RCHN = Richland North.

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8.0 COORDINATION AGREEMENTS

This section describes a number of coordination agreements (MOUs) established by and through the DOE-RL to ensure proper response resource availability for incidents involving the Hanford Facility.

An agreement among the three major Hanford Site contractors (an operations, engineering and construction contractor, a research and development contractor, and a medical and health services contractor) defines the interfaces and notifications required during an emergency. The DOE-RL has the overall responsibility for emergency preparedness. Per the agreements, the operations and engineering contractor has responsibility for Site-wide emergency preparedness while each contractor retains responsibility for emergency preparedness at individual units. Agreements have been established with a number of offsite authorities to reduce the impact to human health and/or the environment in the event that an incident has offsite public health implications, or if an onsite emergency warrants offsite assistance. These agreements are activated through the emergency notification of the DOE-RL (Section 4.1).

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8.1 LOCAL, STATE, AND FEDERAL AUTHORITIES

Various agreements have been established among the DOE-RL and Benton, Franklin, and Grant Counties and the states of Washington and Oregon. These agreements describe the cooperative arrangements among these agencies for any onsite emergency that warrants offsite assistance. These agreements describe the planning for, communication of, and response to emergencies at the Hanford Facility that might have offsite consequences.

8.2 HANFORD FIRE DEPARTMENT MUTUAL AID

The Hanford Fire Department provides fire department services for the Hanford Site and Hanford Facility. Mutual aid agreements have been established with Richland, Kennewick, and Pasco fire departments; with Benton County Fire Districts 1 through 6, Franklin County Fire District 3, and Walla Walla Fire District 5.

8.3 MEDICAL AND FIRST AID

Professional medical help is provided onsite by the DOE-RL through the Hanford Environmental Health Foundation. Doctors and nurses are available for emergency assistance at all times. These medical personnel are trained in procedures to assist personnel contaminated with hazardous and/or radioactive material. Emergency call lists are maintained to provide professional medical consultation at all times.

Referral to offsite hospital facilities is made by the Hanford Environmental Health Foundation physician providing emergency assistance by telephone or in person. The primary hospital used in emergencies is Kadlec

Hospital, Richland. Kennewick General Hospital, Kennewick, and Our Lady of Lourdes Hospital, Pasco, are used as backup facilities. Agreements have been established among these hospitals and the DOE-RL.

8.4 AMBULANCE SERVICE

Ambulance service is provided by the Hanford Fire Department, which uses paramedics and emergency medical technicians as attendants. This service is available from area fire stations on a 24-hour, 7-day basis. Additional ambulance service is available from other local city fire departments through the mutual aid agreements (Section 8.2).

8.5 UNIFIED DOSE ASSESSMENT CENTER

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The Unified Dose Assessment Center (UDAC) is the technical extension of the DOE-RL-EACT, providing services to both the DOE-RL-EACT and the ECC. The primary mission of the UDAC is to provide recommendations for protective actions, dose calculations and projections, and consultation in the area of industrial hygiene for hazardous materials, biology, environmental monitoring, and meteorology to support the DOE-RL-EACT and the ECC.

Industrial hygiene and biological consultants at the UDAC advise and assist in determining proper response procedures for spills or releases of toxic, flammable, carcinogenic, and pathogenic materials. The UDAC personnel are responsible to provide a central unified assessment of the dispersion and impact of environmental releases from the Hanford Facility. In communication with the ECC, UDAC coordinates the assessment of impacts and assists in the determination of actual and potential release scenarios.

8.6 HANFORD PATROL/BENTON COUNTY SHERIFF

The Hanford Patrol serves as the security agency for the Hanford Facility. The Benton County Sheriff's Department provides law enforcement for the Hanford Facility. In the event of an emergency, the Hanford Patrol provides services such as activating the crash alarm systems or area sirens, coordinating the movement of emergency responders through security gates, assisting evacuation, establishing barricades, and making necessary notifications through the single point-of-contacts. Benton County Deputies will assist with traffic control activities. Agreements also have been established with the Richland, Kennewick, and Pasco police departments to provide additional backup capabilities if required.

8.7 ALERTING OF PERSONNEL ON THE COLUMBIA RIVER

An agreement exists among the DOE-RL, the Washington Public Power Supply System, Benton and Franklin Counties, and the Thirteenth Coast Guard District to ensure safety on the Columbia River during an emergency at the Hanford Facility and to coordinate response activities for alerting personnel on the Columbia River.

04/11/94

HANFORD SITE COMMENTS ON THE SECOND DRAFT OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF DANGEROUS WASTE FOR THE HANFORD FACILITY

ATTACHMENT 19

REVISION 2A PAGE CHANGES FOR THE 616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY PERMIT APPLICATION

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Date: April 1994	Copy No.: Document No.: DOE/RL-89-03
To:	Title: Hanford Facility Dangerous Waste Permit Application, 616 Nonradioactive Dangerous Waste Storage Facility
MSIN:	Revision Release No.: 2A

Section Number and Title	Remove		Insert	
	Page(s)	Date	Page(s)	Date
COVER, SPINE, TITLE PAGE		10/31/91		04/94
CONTENTS	v-vi	10/31/91	v-vi	04/94
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2.0 FACILITY DESCRIPTION AND GENERAL PROVISIONS	2-17 to 2-20	10/31/91	2-17 to 2-20	04/94
3.0 WASTE CHARACTERISTICS	3-i to 3-10 F3-1 to F3-4 T3-1 to T3-5	10/31/91	3-i to 3-4 F3-1 T3-1 to T3-2	04/94
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12.0 REPORTING AND RECORDKEEPING	12-3 to 12-4 12-9 to 12-10 T12-1.1 T12-1.4	10/31/91	12-3 to 12-4 12-9 to 12-10 T12-1.1 T12-1.4	04/94
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APPENDIX 8A TRAINING COURSE DESCRIPTIONS RCRA TRAINING	APP 8A-i through APP 8A-11	10/31/91	 APP 8A-i through APP 8A-20	04/94
APPENDIX 8B NON-RCRA TRAINING			APP 8B-i through 8B-6	04/94
APPENDIX 8C TRAINING COURSE DESCRIPTIONS			APP 8C-i through 8C-14	04/94
APPENDIX 8D DANGEROUS WASTE TRAINING REQUIREMENTS LISTED BY EMPLOYEE WORKER CATEGORY AND NAME			APP 8D-i through 8D-4	04/94

Please update your manual with the attached pages, sign, date, and return this sheet. If you no longer require the document, please return the document, with this sheet, to the address below.

Name:	Date:

Regulatory Permitting Group
L4-97

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11A	RANDOM NUMBERS TABLE
11B	DESCRIPTION OF PROCEDURES

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PART B

This Part B permit application for the 616 Nonradioactive Dangerous Waste Storage Facility consists of 15 chapters and 13 appendices.

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1.0 INTRODUCTION

This chapter describes the permitting approach for the 616 Nonradioactive Dangerous Waste Storage Facility (616 NRDWSF) and provides an overview of the 616 NRDWSF Part B permit application.

1.1 THE 616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY PERMITTING

The 616 NRDWSF began operation in September 1986. This treatment, storage, and/or disposal (TSD) unit, classified as container storage, will be permitted under Washington State Department of Ecology (Ecology) *Dangerous Waste Regulations*, Washington Administrative Code (WAC) 173-303-806.

The 616 NRDWSF provides a centralized storage unit to receive, store, and prepare shipments of nonradioactive dangerous waste. Before receipt of dangerous waste at the 616 NRDWSF, the waste is characterized, designated according to Ecology regulations for dangerous waste, and packaged according to the U.S. Department of Transportation regulations for hazardous materials. The waste is shipped to the 616 NRDWSF by truck. Once a waste shipment is accepted from the transporter, the 616 NRDWSF personnel place the waste in the appropriate storage cell as determined by the hazard class and chemical compatibility of the waste. Approximately 18 times a year, depending on the rate of waste accumulation, containers are manifested according to U.S. Department of Transportation regulations for hazardous materials, inspected for offsite shipment, and transported to a permitted TSD facility.

1.2 THE 616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY PART B PERMIT APPLICATION CONTENTS

The 616 NRDWSF Part B permit application consists of 15 chapters:

- Introduction (Chapter 1.0)
- Facility Description and General Provisions (Chapter 2.0)
- Waste Characteristics (Chapter 3.0)
- Process Information (Chapter 4.0)
- Groundwater Monitoring (Chapter 5.0)
- Procedures to Prevent Hazards (Chapter 6.0)
- Contingency Plan (Chapter 7.0)
- Personnel Training (Chapter 8.0)
- Exposure Information Report (Chapter 9.0)

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- Waste Minimization Plan (Chapter 10.0)
- Closure and Postclosure Requirements (Chapter 11.0)
- Reporting and Recordkeeping (Chapter 12.0)
- Other Relevant Laws (Chapter 13.0)
- Certification (Chapter 14.0)
- References (Chapter 15.0).

A brief description of each chapter is provided in the following sections.

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1.2.1 Facility Description and General Provisions (Chapter 2.0)

This chapter provides a general description of the 616 NRDWSF. A brief description and history of the Hanford Site also are provided.

1.2.2 Waste Characteristics (Chapter 3.0)

This chapter discusses the physical, chemical, and biological characteristics of the waste types transported to the 616 NRDWSF from various Hanford Site generating units. A waste analysis plan that provides the methodology for determining waste types is included.

1.2.3 Process Information (Chapter 4.0)

This chapter covers the detailed operation of the 616 NRDWSF. Additional information is given concerning container descriptions and primary and secondary containment systems.

1.2.4 Groundwater Monitoring (Chapter 5.0)

This chapter explains that the 616 NRDWSF is not operated as a dangerous waste surface impoundment, waste pile, land treatment unit, or landfill. Therefore, groundwater monitoring is not required.

1.2.5 Procedures to Prevent Hazards (Chapter 6.0)

This chapter discusses hazard prevention and emergency preparedness equipment, structures, and procedures.

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

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

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

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2.8 MANIFEST SYSTEM [B-8]

The Hanford Facility uses an EPA Uniform Hazardous Waste Manifest for all offsite shipments of dangerous waste. Onsite waste tracking forms are voluntarily used for transporting waste on the Hanford Facility.

The following sections provide information on receiving shipments, response to manifesting discrepancies, and provisions for nonacceptance of shipments.

2.8.1 Procedures for Receiving Shipments [B-8a]

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

- The generating unit secures the waste in a controlled, less-than-90-day-storage area.
- If the contents of the container cannot be verified, the waste coordinator for the generating unit (Chapter 3.0, Section 3.2) identifies the waste from associated manufacturer's data, waste records, or sample analysis.
- The waste coordinator for the generating unit submits a waste storage/disposal request (Chapter 3.0, Section 3.2) to Solid Waste Engineering.
- A trained designator in Solid Waste Engineering identifies the proper waste designation.
- The completed waste designation is reviewed and signed by a peer designator and a Solid Waste Engineering manager.

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

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

- The generating unit's waste coordinator prepares a waste tracking form. The waste tracking form identifies the applicable contractor as the transporter and the 616 NRDWSF as the receiving storage unit.

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

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

Before a shipment is accepted at the 616 NRDWSF, each container is reviewed against the waste tracking form and the hazardous waste disposal analysis record. During the review, the following items are checked:

- Proper shipping name

- Proper hazard class

- Proper marking and labeling

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

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

- Container condition.

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

- Significant discrepancies are noted on all copies of the waste tracking form.

- The transporter is given one signed copy of the waste tracking form.

- A copy of the waste tracking form is sent to the generating unit within 30 days of receipt.

- A copy of the waste tracking form is retained for at least 5 years by the 616 NRDWSF and Solid Waste Engineering.

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

2.8.2 Response to Significant Discrepancies [B-8b]

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

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

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

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

Waste tracking form discrepancies are considered resolved when all parties are satisfied with the designation and packaging. To prevent any problems that could occur during transportation back to generating units, all waste tracking form discrepancies are resolved at the 616 NRDWSF (Chapter 12.0, Section 12.4.1.1).

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

Provisions for nonacceptance of shipments are discussed in the following sections.

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

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

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CONTENTS

APPENDIX

FIGURE

TABLES

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3.0 WASTE CHARACTERISTICS [C]

This chapter describes the characteristics of wastes managed at the 616 NRDWSF.

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

This section describes the chemical and physical characteristics of the wastes stored at the 616 NRDWSF.

3.1.1 Containerized Waste Generated Offsite [C-1a]

This section summarizes the characteristics of waste streams generated offsite which are transported to the 616 NRDWSF for storage. For application in this document, the term "offsite waste" is defined as waste shipped to the 616 NRDWSF from the following:

- Locations not contiguous with the Hanford Site
- Waste shipped on a Hanford Facility public access roadway.

Nonradioactive dangerous waste generated offsite is transported to the 616 NRDWSF where the waste is stored before transport to an offsite TSD facility. Waste normally is received in U.S. Department of Transportation 5-, 30-, and 55-gallon (18.9-, 113.6-, and 208-liter) approved containers, but also can be received in other specified containers, such as wooden or fiberboard boxes (Table 3-1). No waste is accepted at the 616 NRDWSF in bulk loads.

The 616 NRDWSF receives nonradioactive dangerous waste from both Hanford Facility and offsite processing, testing, maintenance, and construction activities. Waste generated offsite is variable in nature. The DOE-RL and Hanford Facility contractors have implemented control procedures to ensure that proper waste identification, designation, and packaging are attained (Figure 3-1). The waste is designated using the procedures in WAC 173-303-070 through 100 before shipment to the 616 NRDWSF.

To simplify and more accurately represent the waste and the quantities of waste, the waste has been divided into the following waste stream categories:

- Nonhalogenated solvents, strippers, and thinners
- Halogenated solvents, strippers, and thinners
- Oily waste
- Discarded commercial products (aerosol cans, light ballasts, alkaline batteries)
- Corrosive waste

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- Paints, cements, sealers, resins, and miscellaneous containerized materials
- Miscellaneous labpacks
- Characteristic waste
- Discarded chemical products
- Waste regulated as dangerous by WAC-173-303 requirements only.

Each waste stream category consists of a wide variety of waste. The characteristics of one or more wastes representative of each waste stream category are provided in the *Hanford Facility Dangerous Waste Permit Application, 616 Nonradioactive Dangerous Waste Storage Facility, Revision 2, Chapter 3.0, Waste Characteristics Supplemental Information* (DOE-RL 1993).

The 616 NRDWSF accepts waste for storage with the waste codes identified in Table 3-2, excluding explosive, shock-sensitive (Chapter 4.0, Section 4.1.4.1), class IV oxidizer [in waste volumes greater than 10 pounds (4.5 kilograms)], and radioactive waste. The 616 NRDWSF also can store containerized *Toxic Substances Control Act* (TSCA) *of 1976* regulated waste.

3.1.2 Containerized Waste Generated Onsite [C-1b]

Waste generated on the Hanford Facility and shipped to the 616 NRDWSF is similar in characteristic and type to waste generated offsite. Waste generated on the Hanford Facility is managed at the 616 NRDWSF in basically the same manner as offsite waste.

3.1.3 Waste in Tank Systems [C-1b]

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

3.1.4 Waste in Piles [C-1c]

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

3.1.5 Landfilled Wastes [C-1d]

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

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

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

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

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

3.2 WASTE ANALYSIS PLAN [C-2]

The 616 NRDWSF waste analysis plan (Appendix 3A) summarizes the waste streams and acceptance processes. Also described in the waste analysis plan are sampling methods, analytical parameters and rationale, quality control and quality assurance procedures, requirements for incoming waste, storage requirements for ignitable, reactive and incompatible waste, and the waste tracking and recordkeeping procedures.

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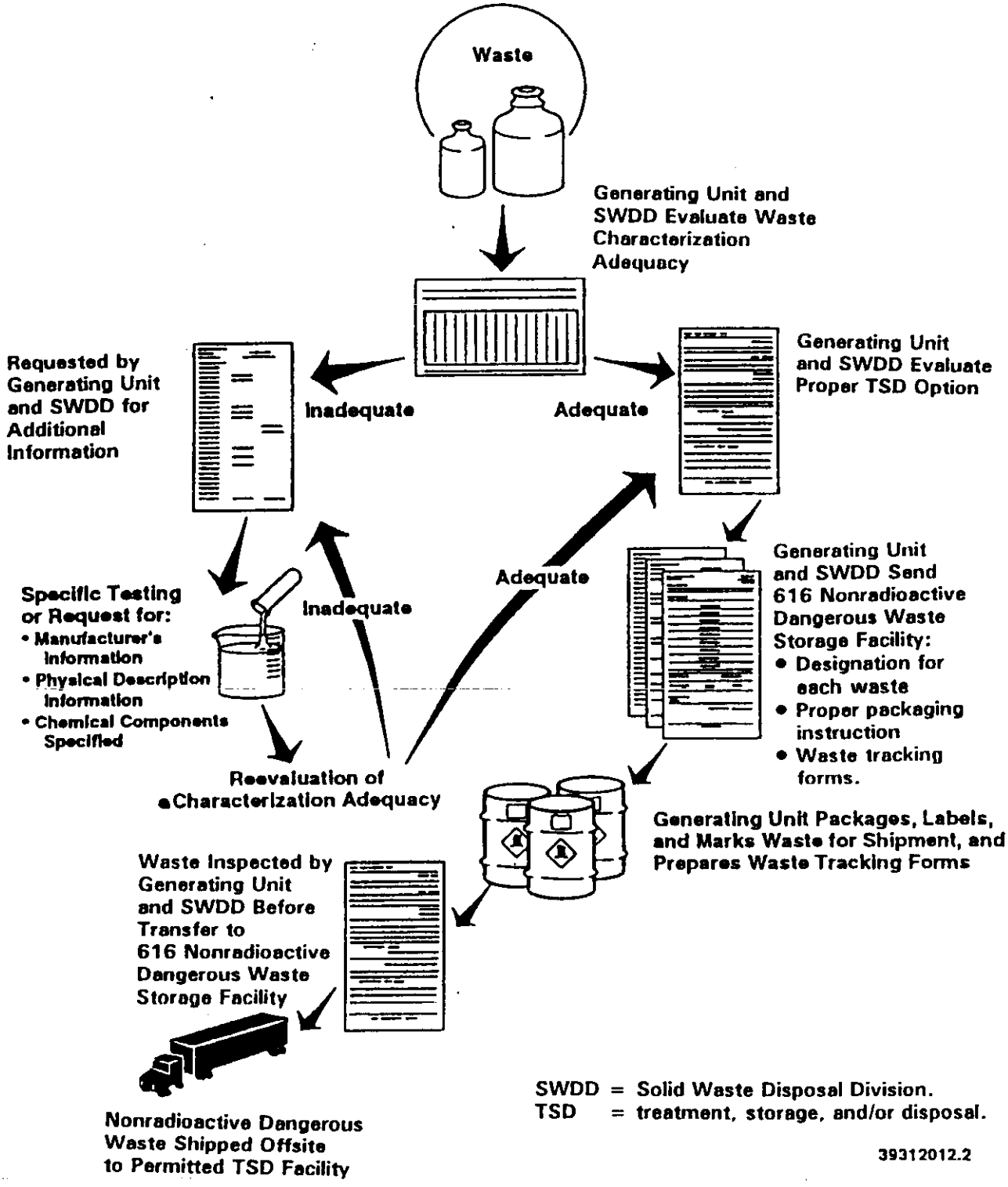

Figure 3-1. Decision Process for Handling Dangerous Waste.

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

DOT Specification	Container	Material	Reference (49 CFR 178)
UN4G (Replaces 12B)	CF	Fiberboard box	178.516
UN1A2 (Replaces 17C and 17H) Packaging groups I, II, and III	DM (open head)	Carbon steel	178.504
UN1A1 (Replaces 17E) Packaging groups I, II, and III	DM (closed head)	Carbon steel	178.504
UN1H1 (Replaces Spec 34) Packaging group II	DF (closed head)	Polyethylene	178.509

CF = Fiberboard box.
DM = Metal drum.
DF = Polyethylene drum.

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

Waste Codes	WAC-173-303 Reference
"U" Codes	WAC-173-303-9903
"P" Codes	WAC-173-303-9903
"F" Codes	WAC-173-303-9904
"W001" Codes	WAC-173-303-9904
"D001" Codes	WAC-173-303-090(5)
"D002" Codes	WAC-173-303-090(6)
"D003" Codes	WAC-173-303-090(7)
"D004-D043" Codes	WAC-173-303-090(8)
"WT01 and WT02" Codes	WAC-173-303-100(5)
"WP01, WP02 and WP03" Codes	WAC-173-303-100(6)
"WC01 and WC02" Codes	WAC-173-303-100(7)
"WL01 and WL02" Codes	WAC-173-303-180(5)

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

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

Containers without free liquids are discussed in the following sections.

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

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

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

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

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

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

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

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

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

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

4.1.4.3 Management of Incompatible Wastes in Containers [D-1d(3)]. The generating unit's waste coordinator and the Solid Waste Engineering staff are responsible for determining the regulatory status of each waste and determining the incompatible compounds of the waste. Status information is

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forwarded on a hazardous waste disposal analysis record (Chapter 3.0, Section 3.2) to the generating unit, who packages the waste as instructed. Afterwards, Solid Waste Disposal Unit personnel inspect the container for proper packaging, labeling, marking, and waste tracking forms before transport to the 616 NRDWSF. The container is inspected again at the 616 NRDWSF to determine that the waste is properly packaged, marked, labeled, and manifested (Chapter 3.0, Section 3.2).

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

4.2 TANK SYSTEM [D-2]

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

4.3 WASTE PILES [D-3]

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

4.4 SURFACE IMPOUNDMENTS [D-4]

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

4.5 INCINERATORS [D-5]

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

4.6 LANDFILLS [D-6]

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

4.7 LAND TREATMENT [D-7]

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

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CONTENTS

APPENDICES

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8.0 PERSONNEL TRAINING [H]

This chapter outlines the training program developed and implemented for Solid Waste Disposal Division (SWDD) waste management units (units). The SWDD units include treatment, storage, and disposal (TSD) units and a Corrective Action Management Unit (CAMU). Specific SWDD units include the 616 Nonradioactive Dangerous Waste Storage Facility (616 NRDWSF); the Central Waste Complex (CWC); the Low-Level Burial Grounds (LLBG); the Environmental Restoration Disposal Facility (ERDF); the 224-T Transuranic Waste Storage and Assay Facility (224-T TRUSAF); and the Waste Receiving and Processing Facility (WRAP). The training plan provided in Appendices 8A through 8D discusses training requirements pertaining to the 616 NRDWSF.

The training program is designed to be compliant with all applicable federal, state, and U.S. Department of Energy, Richland Operations Office training requirements. The training program complies with requirements contained within WAC-173-303-330 for the development of a written dangerous waste training program. The training program is designed to prepare personnel to manage and maintain SWDD units in a safe, effective, efficient, and environmentally sound manner. In addition to preparing employees to manage and maintain SWDD units under normal conditions, the training program ensures that employees are prepared to respond in a prompt and effective manner should offnormal or emergency conditions occur.

This training plan is divided into four appendices. Appendix 8A describes the *Resource Conservation and Recovery Act of 1976* (RCRA) training program. Appendix 8B describes the non-RCRA programs that are closely related to the RCRA programs. Appendices 8C and 8D provide additional information supplementing the RCRA requirements. This format provides the ability to select appropriate sections of this training plan when a SWDD TSD unit becomes part of the Hanford Facility RCRA Permit (Permit). It is expected that selected RCRA sections from this training plan will become enforceable conditions included in Part III of the Permit when issued.

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facility. Waste transfers onsite, including waste to the 616 NRDWSF, are recorded and tracked in accordance with Hanford Facility procedures (Section 12.4.1.1.1). Therefore, transporter records required by 40 CFR 263.22 and WAC 173-303-260 are not maintained by either the 616 NRDWSF or by the Hanford Facility. Reports such as discharge reports required by 40 CFR 263.30 and WAC 173-303-270 are not applicable.

12.4 TREATMENT, STORAGE, AND/OR DISPOSAL REQUIREMENTS

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

12.4.1 Reports

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

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

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

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

12.4.1.1.1 Manifest Discrepancy. Each nonradioactive dangerous waste received at the 616 NRDWSF must have a waste tracking form for the transfer to be approved (Chapter 2.0, Section 2.8). The waste tracking forms are checked to verify that the forms are properly filled out and that the waste received is identical to the waste described on the waste tracking forms. Every effort is made to resolve discrepancies with the generating unit or offsite

generator. If discrepancies are not resolved within 15 days, for waste received from offsite, a report will be submitted to the EPA and Ecology in accordance with 40 CFR 264.72 and WAC 173-303-370 respectively. The report will describe the discrepancy and attempts to reconcile it. A copy of the waste tracking form at issue will be attached to the report.

12.4.1.1.2 Unmanifested Waste. For waste received from offsite that is not accompanied by a waste tracking form (Chapter 2.0, Section 2.8), the unmanifested waste reports required by 40 CFR 264.76 and WAC 173-303-390 will be submitted.

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

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

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

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

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

12.4.1.4 Groundwater Monitoring Reports. The 616 NRDWSF is not operated as a dangerous waste surface impoundment, waste pile, land treatment unit, or

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maintained. This record provides a cross-reference to associated waste tracking form numbers.

12.4.2.2.3 Waste Analysis. Waste analysis records maintained at the 616 NRDWSF are generated only when waste resulting from a spill or leak cannot be identified. Records generated as part of the waste confirmation process detailed in Chapter 3.0 will be maintained at the 616 NRDWSF. Analyses are repeated, as necessary, to ensure accuracy and validity.

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

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

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

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

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

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

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- The demonstration and certification required by 40 CFR 268.8, if applicable, for waste subject to land disposal prohibitions or restriction.

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

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

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

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

- The waste does not meet the applicable treatment standards
- The waste meets the applicable treatment standards.

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

Waste Does Not Meet the Applicable Treatment Standards--If Solid Waste Engineering determines that the waste does not meet the applicable treatment

Table 12-1. Reports and Records. (sheet 1 of 4)

Item	Storage	
	Retention Time	Location[a]
Notification of dangerous waste activities	Life of 616 NRDWSF	Hanford Facility
GENERATOR REPORTS AND RECORDS:		
Annual report	Life of 616 NRDWSF	Hanford Facility
Exception report	Life of 616 NRDWSF	Hanford Facility
Additional reports and records as required (e.g., inspection logs)	Life of 616 NRDWSF	Hanford Facility
Test and Waste Analysis Results:		
Waste confirmation	Life of 616 NRDWSF	Hanford Facility
Waste generated onsite	Life of 616 NRDWSF	Hanford Facility
Waste packaged for offsite shipment	Life of 616 NRDWSF	Hanford Facility
Waste Manifest Reports and Records:		
Manifests	Life of 616 NRDWSF	Hanford Facility
Manifest discrepancy[b]	Life of 616 NRDWSF	Hanford Facility
Unmanifested waste[b]	Life of 616 NRDWSF	Hanford Facility
Land Disposal Restriction Records:		
Extension to an effective date	Life of 616 NRDWSF	Hanford Facility
Petition for a variance	Life of 616 NRDWSF	Hanford Facility
Notice and certification of treatment standards	Life of 616 NRDWSF	Hanford Facility
Demonstration and certification for a temporary extension to the effective date	Life of 616 NRDWSF	Hanford Facility
TRANSPORTER REPORTS AND RECORDS:		
None required	NA	NA

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Table 12-1. Reports and Records. (sheet 4 of 4)

Item	Storage	
	Retention time	Location[a]
Miscellaneous Support Reports and Records:		
Annual report	Life of 616 NRDWSF	Hanford Facility
Biennial report	Not required	NA
Training documentation	Life of 616 NRDWSF	616 NRDWSF
Liability coverage documentation	Not required	NA

NA = not applicable.

[a]At the time of closure, all 616 NRDWSF environmental records will be transferred to a Hanford Facility central retention area.

[b]Applicable to waste received from offsite sources.

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14.0 CERTIFICATION [K]

The following certification, required by WAC 173-303-810(13), for all applications and reports submitted to Ecology is hereby included:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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_____ _____

Owner/Operator — Date
John D. Wagoner, Manager
U.S. Department of Energy,
Richland Operations Office

_____ _____

Co-operator — Date
A. L. Trego, President
Westinghouse Hanford Company

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APPENDIX 3A

616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY WASTE ANALYSIS PLAN

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616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY

WASTE ANALYSIS PLAN

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FIGURES

TABLES

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1.0 DESCRIPTION OF 616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY

This waste analysis plan has been prepared for the 616 Nonradioactive Dangerous Waste Storage Facility (616 NRDWSF), located on the Hanford Facility approximately 200 feet (61 meters) north of Route 3, across from the 609-A Fire Station, between the 200 East and 200 West Areas (Figure 1). The 616 NRDWSF boundary is considered to be 300 feet (91.4 meters) from the exterior walls, except south, where Route 3 serves as the boundary.

The 616 NRDWSF consists of an office area, a packaging and sampling room, a packaging material and handling equipment storage area, a receiving area, two exterior loading and unloading areas, and six individual storage cells (caustic, oxidizer, combustible, acid, flammable 1A, and flammable 1B) (Figure 2).

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The 616 NRDWSF receives nonradioactive dangerous waste from both onsite and offsite waste generators and/or generating activities including, but not limited to, processing, testing, maintenance, and construction activities.

For application in this document, the term "offsite waste" is defined as dangerous waste shipped to the 616 NRDWSF from:

- Any generator or generating activity that is located in an area that is not part of the contiguous Hanford Facility
- Any generator or generating activity from which the shipment of waste is transported over a public access roadway.

Nonradioactive dangerous waste generated offsite is transported to the 616 NRDWSF where the waste is stored before transport to an offsite treatment, storage, and/or disposal (TSD) facility. Offsite waste shipments are managed in full compliance with the manifest requirements of WAC 173-303-370 and -180.

Onsite waste tracking systems are voluntarily used for transporting containerized nonradioactive dangerous waste via truck before being shipped offsite for treatment, storage, and/or disposal at a TSD facility.

The 616 NRDWSF receives a wide range of nonradioactive dangerous waste from generating units contracted by the DOE-RL. The waste accepted includes waste regulated by the *Resource Conservation and Recovery Act* (RCRA) *of 1976*, the *Federal Insecticide, Fungicide, and Rodenticide Act* (FIFRA) *of 1975*, the Washington Administrative Codes (WAC), and the *Toxic Substances Control Act* (TSCA) *of 1976*. The waste acceptance requirements for all dangerous waste are described in this document.

The operation of this TSD unit is maintained by the Solid Waste Disposal Division (SWDD) of Westinghouse Hanford Company (WHC), under authority of and through contractual arrangement with the DOE-RL. Technical evaluation of waste designations and waste approval for storage in the 616 NRDWSF is the responsibility of the SWDD.

Activities conducted at the 616 NRDWSF include receiving, interim storage, and offsite shipment of nonradioactive, containerized waste regulated by RCRA, WAC, FIFRA, and TSCA. Associated activities, such as overpacking of leaking containers, spill cleanup, sampling, repackaging, and maintenance also might take place as needed. Activities at the 616 NRDWSF are performed under the jurisdiction of an established procedure (DOE-RL 1989, Revision 2A, Appendix 11B) or an approved job hazard analysis.

2.0 WASTE DATA PROVIDED BY GENERATING UNITS

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Before shipment or acceptance of waste at the 616 NRDWSF, the generating unit completes and submits waste storage disposal request (WSDR) documentation to the SWDD. The waste characterization provided on this form is based on process knowledge, original product material safety data sheet (MSDS) information, and/or a detailed chemical and physical analysis of a representative sample. The basic information required on the WSDR is as follows.

- **General Information**--Includes generating unit, technical contacts and telephone numbers, accumulation date, the generating unit tracking number, and waste types.

- **Container Identification Number**--Each container of waste destined for the 616 NRDWSF is assigned a unique 14 digit container identification number (CIN) assigned by the generating unit. (Note: The DOE-RL is implementing a bar coding system for computerized waste tracking. When implemented, the bar coding system might increase the number of digits used in the CIN system).

- **Number of Containers**--The generating unit indicates the number of containers for each unique waste stream.

- **Container Description**--The volume capacity of each container is entered, e.g., 55 gallons, 5 gallons, pint, etc. Container information must include the type and material (i.e., glass bottles, steel drums, plastic drums, fiberboard drums, cardboard boxes) and the condition of the container (i.e., damaged containers often will need overpacking). The U.S. Department of Transportation packaging group should be entered when the waste is contained in a U.S. Department of Transportation container.

  Other container information could be (1) identifying drums as to bung or open-head type and (2) identifying drums that are designated as 'single-trip' or 'nonreusable', which are not reusable for 'second-trip' packaging.

- **Kilograms of Waste**--The total weight of the waste in <u>each</u> container is entered in kilograms. Containers, inner liners, and weight of absorbents used in a combination package are **not** considered part of the waste when computing total waste quantity.

- **Waste/Process Description**--The generating unit must provide the trade name(s) (if available) and a general description of each unique waste. The generating unit also must include a general description of the process that created the waste.

- **Chemical Components**--The generating unit must enter all constituents in each waste. Waste can be categorized without testing only if all of the chemical constituents are known. This means that the weight percent of all waste constituents must total at least 100 percent including water and inert ingredients. All available information describing the waste composition (MSDS, laboratory analysis) must be attached to the WSDR. Attached information must be clearly identified (MSDS number, sample number). The only acceptable ways to obtain chemical information without laboratory analysis are as follows:

  - Commercial Chemicals--Information concerning the chemical makeup of waste can be found in specification sheets, on labels, and on MSDSs. The information provided must be specific for the commercial product used. If the MSDS provides insufficient information for a correct designation, the SWDD will require the generating unit to provide a laboratory analysis before acceptance at the 616 NRDWSF.

  - Laboratory Reagents--Information on laboratory reagents can frequently be identified by ingredients listed on the label. If the label lists impurities, such as lead, arsenic, or other heavy metals, the generating unit must include those on the waste disposal request.

  - Routine Waste Mixtures--Generating units are required to supply a laboratory analysis on the initial 'routine waste' mixture. After the initial analysis, generating units will be required to reanalyze only if the process generating the waste stream is altered. A generating unit logbook is not required when the waste is accumulated from a single routine process.

  - Nonroutine Waste Mixtures--Generating units are required to use a logbook when waste is accumulated from a nonroutine process. The generating unit must calculate concentrations of reagents from the analytical procedure to determine the weight percent of each constituent.

  - Absorbent--If waste is mixed with an absorbent, the weight of the waste and weight of absorbent must be listed separately. The type of absorbent used also must be noted on the WSDR.

- **Weight Percent**--The generating unit must enter the weight percent of each chemical in the waste. Traces of pesticides, herbicides, heavy metals, and polychlorinated biphenyls (PCB) must be specified. Elements of particular importance are arsenic, barium, cadmium, silver, mercury, chromium, lead, and selenium. Components must add up to 100 weight percent or greater including water, soil, or other constituents. If weights are available only in ranges (e.g., methanol 10 percent to 20 percent), the generating unit must list the ranges.

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If the original product contained volatiles, the generating unit must state "No volatiles present". The WSDR that does not contain weight percentages is rejected by the SWDD.

- **Physical Properties**--The generating unit specifies the physical properties of the waste as follows.

  - The generating unit specifies if the waste is a solid, liquid, gas, sludge, multilayered, etc.

  - The generating unit specifies the pH of the waste. For solids or semisolids, the generating unit must determine the pH by mixing the solid with an equal weight of water and measuring the pH of the solution.

  - The generating unit indicates the flashpoint in degrees fahrenheit, and specifies if the test method was 'open cup' or 'closed cup'. The generating unit also is required to list the boiling point of flammable liquids.

  - The generating unit provides information on density or specific gravity. This information can be obtained from the manufacturer, MSDS, chemical resource books, or material specifications.

- **Hazards**--The generating unit specifies any significant hazard that a waste might have. Hazard information is obtained from an MSDS, process knowledge, laboratory analysis, and/or manufacturer's labels or literature. The proper abbreviations to describe waste hazards are selected from the following (more than one might be necessary):

Corrosive -	C	Explosive -	E
Ignitable -	I	Persistent -	P
Reactive -	R	Carcinogenic -	X
Toxic -	T	Oxidizer -	Ox

Toxic characteristic leaching procedure - TCLP

- **Waste Status**--The generating unit enters the appropriate abbreviations from the following (more than one might be necessary):

Reacted	-	Rx
Treated	-	T
Used	-	U (has been used for intended purpose)
Spill material	-	S (also indicate if Used or Old)
Old	-	O (opened but unused material)
New	-	N (unopened and unused (or expired))

- **Container Status**--The generating unit specifies the container status from the following abbreviations:

Full	-	F
Partially full	-	PF

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Empty	-	MT
Triple rinsed	-	TR

The data submitted on the WSDR must be sufficient to allow the SWDD to perform an evaluation and designation of the waste form and constituents with regard to acceptance and TSD requirements.

Generating units submit, along with the WSDR, all supporting data to the SWDD for evaluation and approval of waste shipment to the 616 NRDWSF. Any supporting analysis documentation and/or MSDS information must accompany the WSDR. Records of the waste characterization data are maintained by the SWDD. This information is required and is analyzed according to this waste analysis plan.

Inadequate backup data for the WSDR information supplied might result in rejection of the WSDR until sufficient technical basis is available for characterization of the waste.

Adequate process knowledge and/or analysis must be available to accurately identify all existing RCRA and WAC waste codes in accordance with the WAC-173-303-080 through 110 requirements. If adequate process knowledge exists to ensure that a particular constituent is not present in the waste, there is no requirement to analyze for that constituent. For instance, if a waste comes from a well-defined aqueous process and there are no organic chemicals associated with the process, it is not necessary to test for volatile and semivolatile organics. Similarly, if there is no reason to suspect pesticides and herbicides, analysis for those parameters is not required. However, the WSDR must establish that there is no reason to suspect the constituent is in the waste. This can be accomplished by including a detailed process description and/or published data of the process with the WSDR.

The generating unit must use knowledge of the history and origin of the waste to determine the analytical testing needed to determine dangerous constituents of the waste. The generating unit also determines the appropriate sampling method, conducts all field and sampling quality assurance/quality control (QA/QC), arranges for and coordinates with appropriate analytical laboratories, and documents the sampling and analysis activities. All sampling activities must be in compliance with SW-846 requirements (EPA 1986). The generating unit certifies that the waste analysis information is accurate. If required, the generating unit might contract the use of other professional sample management organizations available on the Hanford Site.

Laboratory analysis, if required for waste designation, is performed and documented by a laboratory with QA/QC procedures in compliance with SW-846, and using the EPA-approved methods described in this waste analysis plan.

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3.0 FINGERPRINT SAMPLING

Two types of fingerprint[1] samples could be taken during the waste acceptance process. The first type of fingerprint sample is required on a case-by-case basis by the offsite treatment or disposal facility. This sample is either collected by the generating unit and supplied to the SWDD or the sample is collected by the SWDD at the 616 NRDWSF for submission to the offsite facility. The second type of fingerprint sampling is performed by the SWDD designated personnel as part of the waste confirmation process for waste acceptance at the 616 NRDWSF. The following describes the fingerprinting activities for waste to be shipped offsite from the 616 NRDWSF and for waste acceptance at the 616 NRDWSF. Waste confirmation is described in Section 3.2.11.

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3.1 FINGERPRINT SAMPLING FOR NON-HANFORD SITE WASTE PROFILES

Generating units typically are required to provide a representative fingerprint sample of new waste streams to the SWDD as part of the offsite commercial disposal profiling process. If the SWDD has an acceptance profile for a previously characterized waste or a similar waste stream already characterized, a new sample might not be required. For generating units having typical waste that other generating units might generate, the SWDD will determine if a sample is required during the profiling process. This fingerprint sample serves as a confirmation step for waste being shipped to offsite TSD facilities.

The SWDD will submit the fingerprint sample received from the generating unit to the offsite disposal contractor for analysis, confirmation, and approval for disposal. Under some circumstances, the profile sample may be prepared at the 616 NRDWSF instead of by the generating unit. Typical sample size is a 1-liter glass or plastic container, but other sample sizes sometimes are accepted or required. Sampling information required by the offsite TSD facility is obtained from the SWDD. The generating unit might be required to provide a sample of an on-going waste stream to update the offsite treatment/disposal approval of that waste stream as necessary. All profiles of on-going/routine waste streams are reviewed annually. Any time an approved waste stream changes (e.g., a new constituent is introduced or a new product is used), the waste stream must be reprofiled and another fingerprint sample might be required by SWDD.

3.2 FINGERPRINT SAMPLING FOR WASTE CONFIRMATION

The SWDD is in the process of implementing a waste confirmation program for the purpose of providing additional assurance that waste package contents

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[1] 'Fingerprint' parameters are those parameters that will confirm process knowledge, i.e., a container is labeled 'corrosive', and states the product contains sodium hydroxide; therefore, the product will be tested for sodium and pH to confirm that process knowledge is correct.

received at the 616 NRDWSF are consistent with the documentation provided by the generating units. The SWDD-designated personnel will either perform field confirmation of waste packages at the generating unit location, or perform confirmation on receipt at the 616 NRDWSF. Evidence tape and tamper proof seals will be applied to waste containers that were confirmed at the generating unit location. The integrity of the container seal on receipt at the 616 NRDWSF will be confirmed to ensure that there were no alterations to the waste.

Before acceptance of waste at the 616 NRDWSF, confirmation of designation may be required by the SWDD (Section 11.0). A flowchart illustrating waste confirmation techniques is illustrated in Figure 3. The waste that undergoes confirmation of designation can be divided into two general groups: waste that easily yields a representative sample (Category I) and waste that does not yield a representative sample (Category II). Each waste type is outlined in the following, along with a description of which waste falls into each category.

Category I. All waste that fits in Category I will undergo the following.

- A representative sample will be taken of the waste (if more than one phase is present, each phase must be tested individually), and the following field tests will be performed:

  - Reactivity - HAZCAT[1] oxidizer, cyanide, and sulfide tests. These tests will <u>not</u> be performed on materials known to be organic peroxides, ethers, and/or water reactive compounds.

  - Flashpoint/explosivity - by HAZCAT flammability procedure B, explosive atmosphere meter,[2] or a closed cup flashpoint measurement instrument.[2]

  - pH - by pH meter[2] or pH paper (SW-846 9041).[3] This test will not be performed on non-aqueous materials.

  - Halogenated organic compounds - by gas chromatograph/mass spectrometer, Chlor-D-Tect[4] kits, or the HAZCAT fluoride, chloride, bromide, and iodide tests.

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[1]HAZCAT is a tradename of Haztech Systems, Incorporated.

[2]These instruments are field calibrated daily.

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

[4]Chlor-D-Tect is a tradename of Dexsil Company.

- Volatile organic compounds - by gas chromatograph/mass spectrometer, photo or flame ionization tester.

  If the waste meets the parameters specified in the documentation, confirmation of designation is complete. If the waste does not meet these parameters, proceed to the next step. This is considered a significant error under Section 4.

- Sample and analyze the materials in accordance with WAC 173-303-110. Table 1 lists analytical methodologies. Table 2 lists sampling methods and equipment.

- Reassess and redesignate the waste. Repackage and label as necessary or return to the generating unit.

Category II. If a representative sample cannot be obtained (for example, discarded machinery or shop rags) or if the waste is a labpack or discarded chemical product, the following is performed.

- Visually confirm the waste. Labpacks and combination packages must be removed from the outer container. If the waste meets the parameters specified in the documentation, confirmation of designation is complete. If the waste does not meet these parameters, proceed to the next step. This is considered a significant error under Section 4.0.

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

- The waste must be redesignated using methods identified in WAC 173-303-110.

At least half of the containers to undergo confirmation of designation must fall into category I.

Data obtained through the waste confirmation process will be used to confirm the accuracy of the waste designation for waste received at the 616 NRDWSF.

4.0 SOLID WASTE DISPOSAL DIVISION WASTE ACCEPTANCE REQUIREMENTS

The SWDD reviews the WSDR sent by the generating unit. This review examines the waste information for the potential for shock-sensitive or pyrophoric characteristics as described in Section 6.2. If the WSDR, supporting data, and waste confirmation data are found to be in proper order, and if the waste meets the criteria established in this waste analysis plan, the SWDD completes a hazardous waste disposal analysis record (HWDAR) and

[1]These instruments are field calibrated daily.

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sends the HWDAR to the generating unit. The HWDAR provides the following information:

- Appropriate waste designation per WAC 173-303-070
- Land ban disposal restrictions per 40 CFR 268
- Packaging, marking, and labeling instructions
- Waste tracking requirements
- Compatibility groups (Figure 4)
- Transportation contact
- TSD unit contact
- Identification of a proper storage cell at the 616 NRDWSF.

The HWDAR is sent by the SWDD staff to the generating unit. The generating unit packages the nonradioactive waste and applies appropriate markings and labels in accordance with the HWDAR. Before transport, a transportation representative reviews the waste tracking forms and each waste package against the HWDAR to ensure U.S. Department of Transportation requirements are met. The transportation representative also checks the condition, marking, and labeling of the packages. If discrepancies or deficiencies are found, these are corrected by the generating unit before receiving approval for shipment to the 616 NRDWSF. The transportation representative initials the waste tracking form indicating the load is acceptable for transportation to the 616 NRDWSF. No waste can be transferred to the 616 NRDWSF without the prior approval of the SWDD.

The generating unit arranges the waste shipment with the SWDD on receipt of the HWDAR. At the time of waste shipment, the SWDD staff meets the shipment at the 616 NRDWSF and inspect the shipment to ensure that the waste received is the same as that identified on the approved HWDAR and to ensure that the containers are in good condition. This inspection includes checking the waste tracking form(s), container markings and seals, container condition, and accompanying notifications/certifications. Discrepancies could be resolved with the generating unit by telephone at the discretion of the SWDD personnel. The 616 NRDWSF personnel also are able to overpack containers that arrive in poor condition (or leaking) rather than return the containers to the generating unit. Unresolved discrepancies will result in return of the shipment to the generating unit.

5.0 CHEMICAL AND PHYSICAL ANALYSIS

Before acceptance of the waste at the 616 NRDWSF, a detailed chemical and physical characterization must be performed in support of waste designation. The waste designation process allows the generating unit to provide waste characteristic information based on MSDS, chemical product, and process information in lieu of analytical data. Chemical and physical analysis performed in support of waste confirmation is discussed in Section 3.2.

The waste types historically stored at the 616 NRDWSF are provided in other documentation (DOE-RL 1993). These waste streams have been established through the HWDAR process. In addition, established waste streams are

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confirmed through the analysis of fingerprint samples by the offsite disposal facility to which the waste is shipped.

All RCRA and WAC waste code designations are based on the generating unit-supplied information and analyses in support of HWDAR established for each waste stream.

6.0 HAZARDOUS WASTE DISPOSAL ANALYSIS RECORD SYSTEM

The methods and procedures used to produce HWDARs, designed to promote safe waste management practices at the 616 NRDWSF, are described in this section. The objectives of waste management practices are as follows: (1) to ensure safe handling and storage of all waste materials, (2) to establish uniform and comparable waste characterization requirements for all generating units, (3) to confirm that incoming waste materials are properly described in the accompanying documentation, and (4) to ensure that sufficient waste characterization data are collected to support the eventual treatment or disposal of the wastes.

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6.1 PARAMETERS AND RATIONALE

The parameters to profile dangerous waste received at the 616 NRDWSF are selected to meet the objectives outlined by this waste analysis plan. Table 3 identifies the parameters and rationale required for designating dangerous waste.

The specific parameters selected for characterization are determined on a case-by-case basis. The generating unit selects the appropriate parameters from WSDRs based on knowledge of the waste source. Thus, not all of the parameters identified in Table 3 will be selected for each waste stream.

6.2 WASTE CHARACTERIZATION FOR HAZARDOUS WASTE DISPOSAL ANALYSIS RECORDS

The HWDAR's are prepared by the SWDD. These HWDARs must be completed, reviewed, and approved before waste is shipped to the 616 NRDWSF. The information on the HWDARs provides the data necessary to characterize waste for storage and subsequent treatment or disposal; these HWDARs provide the information fulfilling the waste analysis requirements for waste acceptance and storage.

The primary source of information used by the generating unit to complete the WSDR is process knowledge. The process knowledge information is included on the WSDR submitted to the SWDD for review, approval, designation. The process knowledge information that might be submitted includes, but is not limited to, the following.

- Chemical Specifications--Chemical specifications might be available from the purchase specifications of the particular chemical in question, from product information provided by the manufacturer, or on the labels for the particular chemical in question. For 'pure' chemicals where the material contents and characteristics are well known (e.g., hydrochloric acid), standard chemical reference materials could provide the required information.

- MSDS--Chemical specifications and related information are available on these standard reference materials. The MSDSs could be provided by the manufacturer or acquired through available MSDS databases where the information can be downloaded electronically.

- Process Description--Pertinent details of the process generating the waste and the chemicals used that might have generated the particular waste need to be described. The explanations required range from extremely simple to very complex. The more complex the process, the more information required, such as process flow diagrams and listings of chemicals used in the process or introduced at various points in the process before the waste stream in question is generated.

Other information sources could be used as long as these sources provide detailed information on the chemical constituents present, chemical concentrations, and material characteristics (physical state, ignitability) as defined in Table 3, and the characterization requirements on the WSDR.

The WSDR and the supporting information package are prepared and submitted by the generating unit and reviewed by the SWDD. This review focuses on whether the waste stream is identified correctly according to the supporting information provided and the adequacy of the supporting information. Where potential deficiencies exist in the information provided, or additional waste constituents might be expected to be present that do not appear on the WSDR, the generating unit is contacted by the SWDD personnel for resolution. In addition, the WSDR will be reviewed for potential shock-sensitive characteristics. The following categories have the highest potential to be shock sensitive:

- New, unused chemical products
- Waste with the dangerous waste codes D003, P, or U.

If the characteristics of a potentially shock-sensitive constituent is unresolvable by the SWDD, a review of the waste or constituent by a 'cognizant professional' (e.g., chemist, commercial TSD representative) is required.

The cognizant professional will determine whether: the waste or constituent does not exhibit shock-sensitive characteristics, is unable to exhibit the potential shock-sensitive characteristics, has the potential to exhibit shock-sensitive characteristics, or exhibits actual shock-sensitive characteristics. A waste or constituent that is determined to not exhibit shock-sensitive characteristics will be deemed acceptable for storage at the 616 NRDWSF in regard to these parameters. A waste or constituent that is determined to be unable to exhibit shock-sensitive or characteristics, because of the presence of stabilizing waste constituents or characteristics, will be

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deemed acceptable for storage at the 616 NRDWSF in regard to these parameters. If the waste or constituent has the potential to exhibit shock-sensitive characteristics, the cognizant professional will prescribe methods, if available, for the generating unit to detoxify or stabilize the waste or constituent, thereby rendering the waste acceptable for storage at the 616 NRDWSF in regard to these parameters. If the waste or constituent exhibits potential or actual shock-sensitive characteristics that cannot be detoxified or stabilized, the waste will not be accepted for storage at the 616 NRDWSF.

The results of this review process will be documented and maintained as part of the HWDAR. The master list of potential shock-sensitive chemical compounds is not intended to be all inclusive, and any chemical compound found to be applicable to the list may be added in the future. All deficiencies must be satisfactorily resolved before waste acceptance.

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Most of the waste streams received at the 616 NRDWSF are characterized as described previously because the waste streams are generated routinely from known processes. Occasionally sampling and analysis of waste streams is performed by the generating unit where no other information is available or the SWDD determines that additional information is required before waste acceptance that might be obtained only through waste sampling and analysis. Fingerprint sampling and analysis is performed as part of the waste confirmation programs for both the 616 NRDWSF and the offsite receiving TSD facilities. Section 7.0 presents the requirements to be met for sampling and analysis of waste streams by the generators, where necessary. Section 11.0 presents the sampling and analytical requirements for the waste confirmation program.

7.0 SAMPLING AND ANALYSIS FOR HAZARDOUS WASTE DISPOSAL ANALYSIS RECORDS

In some cases, process knowledge, MSDS, or other process- or chemical-specific information might not be available to complete a HWDAR. In such cases, the SWDD will require the generating unit to provide more information by sampling the waste stream and analyzing the waste streams for pertinent parameters (Table 3). The following describes the sampling and analytical requirements for such characterization. These procedures and requirements also are used in waste confirmation sampling and characterization of spills and unknown liquids (Section 12.0).

7.1 SAMPLING METHODS

Because of physical variations of the waste that could be received at the 616 NRDWSF, sampling methodologies differ among the waste streams. The sampling methods and equipment used are identified on Table 2.

In all cases, the sampling methods adhere to guidance provided in SW-846 and other pertinent references published and accepted by the EPA. Typical

sample container requirements for aqueous and solid samples are provided in Table 4.

The generating unit selects the appropriate sampling technique and sample container based on knowledge of the waste material matrix (solid, liquid, sludge) and the specific analytes of interest. The generating unit is responsible for arranging all sampling and laboratory support for sample analysis. Samples are processed either onsite or offsite at one of several laboratories qualified to perform analysis of waste samples in accordance with SW-846 methods. Sampling methodologies are identified in Table 2.

The generating unit also documents the sampling activities, chain of custody, and arranges sample shipment. Sampling information, custody records, and analytical results are submitted as part of the WSDR data package submitted by the generating unit to the SWDD for review, approval, and designation.

All generating unit sampling will conform to the protocols in SW-846. These protocols are described briefly in the following paragraphs.

Sampling procedures are designed to ensure that each sample is accounted for at all times. The primary objectives of the sample control procedures are as follows.

- Each sample received for analysis is uniquely identified.
- Correct samples are analyzed and are traceable to the applicable data records.
- Important and necessary sample constituents are preserved.
- Samples are protected from loss, damage, or tampering.
- Any alteration of samples during collection or shipping (e.g., filtration, preservation, breakage) is documented.
- A record of sample custody and integrity is established that will satisfy legal scrutiny.

The basic sampling procedure is as follows:

- Obtain samples using a precleaned sampler
- Fill sample containers in the following sequence: headspace volatile organics, volatile organics, semivolatile organics, metals, ignitability, pH (corrosivity), reactivity, radiochemical parameters
- Label sample containers
- Properly clean and decontaminate sample containers and the sampling hardware

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- Custody-seal and blister-wrap all sample containers, place wrapped containers in a leaktight polyethylene bag, and place samples in a durable ice-filled cooler or comparable receptacle for transport to the laboratory

- Complete the chain-of-custody and request-for-analysis forms

- Review all paperwork and enclose the forms in a leaktight, polyethylene bag taped to the underside of the cooler lid

- Seal and mark the coolers or comparable receptacles in accordance with U.S. Department of Transportation requirements

- Transport coolers to the analytical laboratory.

Sample container selection is critical to sample quality. Considering waste compatibility, durability, volume, and analytical sensitivities, the containers listed in Table 4 are recommended to the generating units for these efforts.

All samples are labeled with at least the following information:

- A unique alphanumeric identifier
- Date and time of collection
- Sample collector's name
- Preservatives used
- Analyses requested.

Immediately after collection, samples are placed on ice or blue ice, if necessary, in durable coolers or comparable receptacles for transport to the laboratory. Before shipping, coolers or comparable receptacles are tightly sealed with duct tape and are custody-sealed along the front and back edges of the lids. Samples are transported via truck to laboratories within 24 hours of collection. Samples are transported to offsite laboratories via overnight courier to ensure delivery within 24 hours of sample collection. All sample collection, preparation, packaging, transportation, and analysis conforms to the requirements of SW-846.

During all sampling activities, strict compliance with health physics (HP), Industrial Hygiene (IH), and safety standards is mandatory. Personnel are required to wear eye, skin, and respiratory protection gear, as dictated by IH and HP personnel. If personnel accidentally contact waste material, decontamination procedures are performed immediately.

Sample collectors maintain a permanent log of sampling activities. The log entries typically includes the purpose of sampling; date and time of collection; sample number; sampling location; sampling methodology; container description; waste description (sludge, contaminated soil, etc.); description of generating process or originating waste, name and address of waste producer; name and address of field contact; number and volume of samples; list of suspected hazardous materials; field observations; field measurements (e.g., pH, percent lower explosive limit); destination and transporter; and signature of collector.

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A chain-of-custody record accompanies samples at all times. The record contains the sample number, date and time of collection, sample description, and signatures of the collector and all subsequent custodians.

Transportation of samples is in accordance with the U.S. Department of Transportation and the DOE-RL requirements. Hazardous waste samples are properly packaged, marked, and labeled. Shipping papers are prepared as required by the U.S. Department of Transportation.

All equipment used to sample waste materials is disposable or designed for easy decontamination. Cleanable equipment is thoroughly decontaminated before reuse. Decontamination solutions are managed as hazardous waste as appropriate, according to the threshold contaminant levels exceeded in the sampled liquids.

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7.2 SAMPLE CUSTODY

Generating units are responsible for initiating and following chain-of--custody procedures. Generating unit personnel initiate sample custody records in the field at the time samples are collected. A chain-of-custody form is used to document sample collection activities, including sampling site, sample identification, number of samples, and date and time of collection. Additionally, the form documents the chain of custody including the names of responsible individuals and the dates and times of custody transfers.

7.3 SAMPLE RECEIPT AND STORAGE

Samples are received in an onsite laboratory or qualified contract laboratory by a sample custodian. This individual carefully reviews received samples and documentation for compliance with sampling and documentation requirements, such as type and condition of container, sample preservation, collection date, and chain-of-custody forms. The sample custodian signs and dates the chain-of-custody form after confirming that all samples submitted are listed and that the required information is listed on the form. The sample custodian stores and secures the samples appropriately (e.g., in a locked refrigerator).

The sample custodian places an identification number on each sample and returns the samples to a refrigerator designated for storage of samples requiring analysis. Samples also are assigned a location code (i.e., refrigerator number, shelf number, tray identification) to identify the refrigerator and location within the refrigerator in which the samples are stored. Based on the type of sample and analysis requested, special procedures for sample handling, storage, and distribution could be specified.

7.4 SAMPLE DISTRIBUTION

Chain-of-custody documentation for samples continues throughout the analytical process. After logging in and storing the samples, the sample custodian distributes sample receiving logs, which list sample numbers and

analyses to be performed, to the appropriate analysts and technical leaders. On completion of analyses, results are submitted to the generating unit along with QA/QC information.

8.0 ANALYTICAL METHODS

Table 1 lists the analytical methods that generating units use to perform the analyses in Section 7.1. To the extent possible, analytical test methods will be those specified in SW-846. The generating units document any deviations or methods modifications.

As noted in Section 5.0, the generating unit may complete a WSDR based on chemical data, materials profiles, or other process-related information in lieu of analysis. However, the SWDD personnel may require waste analysis in conformance with this waste analysis plan if the data provided in lieu of analysis are determined to be inadequate.

All testing is performed by chemists and HP technicians working under approved QA guidelines.

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9.0 FREQUENCY OF WASTE DESIGNATION AND/OR CHARACTERIZATION

The dangerous waste streams that are sources of waste accepted at the 616 NRDWSF are either:

- 'Nonroutine wastes' that are designated through the normal HWDAR system when the waste is generated. The HWDAR system is performed for each waste stream.
- 'Routine wastes' for which the HWDAR processes are performed annually, at a minimum.

Examples of nonroutine and routine waste streams are provided in other documentation (DOE-RL 1993). Parameters for the waste designation and/or characterization rationale are listed in Table 3. The annual waste characterization for routine waste generally is considered adequate when the generating process is highly controlled and waste composition remains consistent for the duration of the year. Nonroutine waste streams accepted by the 616 NRDWSF are generated on an irregular or one-time basis. Each such 'new' waste stream (i.e., one not previously shipped to the 616 NRDWSF) also must be characterized before acceptance.

More frequent waste characterization is required under the following circumstances:

- A new waste stream is generated
- The process generating the waste changes
- The waste characteristics are highly variable from shipment to shipment
- SWDD personnel have reason to suspect a change in the waste based on inconsistencies in the WSDR, packaging, or labeling of the waste
- The offsite TSD facility rejects the waste because the fingerprint samples are inconsistent with the waste profile provided by the SWDD.

All waste characterization data submitted in support of the WSDR are reviewed by SWDD to determine whether the waste can be accepted at the 616 NRDWSF for storage. The SWDD can, at its discretion, require additional analyses or re-analysis to substantiate waste characteristics.

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10.0 WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS

The *Hazardous and Solid Waste Amendments of 1984* prohibit the land disposal of certain types of waste that are subject to RCRA. Many of the waste types stored at the 616 NRDWSF fall within the purview of these land disposal restrictions (LDRs). Information presented in this section describes how generating units and SWDD characterize, document, and certify waste subject to LDR requirements.

10.1 WASTE CHARACTERIZATION

For all newly generated waste being shipped to the 616 NRDWSF, generating units are required to document the RCRA waste characteristics, the level of toxicity characteristics, and the presence of listed waste. This information allows generating units and the SWDD personnel to accurately make all LDR determinations and complete and receive all appropriate notifications and certifications. The information is documented on the HWDAR as described in Section 4.0.

10.2 SAMPLING AND ANALYTICAL PROCEDURES

The LDR waste is designated or sampled and analyzed using only EPA-approved methods. Approved methods are described in Sections 5.0.

10.3 FREQUENCY OF ANALYSIS

All LDR waste streams are characterized at least annually. Waste characterization might be required more frequently under the following circumstances:

- A new waste stream is generated
- A process generating the waste changes
- The waste characteristics are highly variable from shipment to shipment.
- SWDD personnel have reason to suspect a change in the waste based on inconsistencies in the manifest, packaging, or labeling of the waste
- The offsite TSD facility rejects the waste because the fingerprint samples are inconsistent with the waste profile provided by SWDD.

10.4 DOCUMENTATION AND CERTIFICATION

The 616 NRDWSF provides interim storage for dangerous waste eventually destined for treatment or disposal at offsite TSD facilities. The 616 NRDWSF has and will continue to receive and store LDR waste.

Because waste treatment does not occur at the 616 NRDWSF, the SWDD requires offsite waste generating units to provide all notifications and certifications as mandated by 40 CFR 268.7. Accordingly, all offsite generating units of waste that is subject to LDR or any LDR related variances are required to submit to the 616 NRDWSF all of the notifications and certifications described in 40 CFR 268.7.

In cases where an offsite generating unit determines that an LDR waste does not meet the applicable treatment standards set forth in 40 CFR 268, Subpart D, or exceeds the application prohibition levels set forth in 40 CFR 268.32 or Section 3004(d) of RCRA, the offsite generating unit provides to the 616 NRDWSF a written notice that includes the following information:

- EPA hazardous waste number
- The corresponding treatment standards and all applicable prohibitions set forth in WAC 173-303, 40 CFR 268.32, or RCRA Section 3004(d)
- The manifest number associated with the waste
- All available waste characterization data.

In cases where an offsite generating unit determines that a restricted waste is being managed that can be land disposed without further treatment, the generating unit submits a written notice and certification to the 616 NRDWSF stating that the waste meets applicable treatment standards set forth in WAC 173-303- (40 CFR 268, Subpart D), and the applicable prohibition levels set forth in 40 CFR 268.32 or RCRA Section 3004(d). The notice includes the following information:

- EPA hazardous waste number
- Corresponding treatment standards and applicable prohibitions

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- Waste tracking number associated with the waste
- All available waste characterization data.

The following certification accompanying any of the previously described notices is signed by an authorized representative of the generating unit.

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

For waste in labpacks, one of the following certifications will be signed by an authorized representative of the generating unit.

"I certify under penalty of law that I personally have examined and am familiar with the waste and that the labpack contains only the wastes specified in Appendix IV to Part 268 or solid wastes not subject to regulation under 40 CFR part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste and that the labpack contains only organic waste specified in appendix V to part 268 or solid wastes not subject to regulation under 40 CFR part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

Copies of all notices and certifications described are retained at the TSD unit for at least 5 years from the date that the waste, which is the subject of documentation, was last sent to an onsite or offsite TSD unit. After that time, the notices and certifications are sent to Records Storage. Notices and certifications also are provided to offsite TSD units with the waste shipments, as required.

11.0 WASTE CONFIRMATION

The waste confirmation program (Figure 3) involves the following.

- Visual observation by SWDD-designated personnel of waste material as it is packaged and sampled, if performed, at the generating unit location or on receipt at the 616 NRDWSF.

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- At least 5 percent of the waste containers stored at the 616 NRDWSF during a federal fiscal year will undergo confirmation of designation pursuant to this section. The number of containers to meet the 5 percent requirement is the average of containers for the previous 3 months. For example, if 200 containers are received in January, 180 in February, and 220 in March, 10 containers of inbound waste must undergo confirmation of designation in April. All generating units that ship more than 20 containers through the 616 NRDWSF in a fiscal year will have at least one container confirmed annually. Containers for which there is insufficient process knowledge or analytical information to designate without sampling and analysis may not be counted as part of the 5 percent requirement unless there is additional confirmation of designation independent of the generating unit designation. The generating unit's staff will not select the waste containers to be sampled and analyzed.

- Physical characteristics of the waste examined during the waste confirmation process will include color, odor, volume, phases, physical state, and layering. The qualitative field test parameters, instrumentation, and ranges of acceptance are identified in Figure 3. The SWDD-designated personnel will perform all qualitative tests and confirm the results of the tests at the time of performance in accordance with the ranges established for acceptance. On detection of a first discrepancy between the generating unit's WSDR and the qualitative test results, the SWDD-designated personnel will cease confirmation activities until the discrepancy is resolved.

- Following positive confirmation (confirmed at the generating unit) of a waste shipment, the SWDD-designated personnel will apply a tamper-proof seal to all containers within the designated waste shipment. Each tamper-proof seal will be identified with a unique number. The tamper-proof seals will remain in place until the waste shipment has arrived at the 616 NRDWSF and has been inspected and accepted for storage.

- All waste confirmation activities will be documented in a waste confirmation log book.

12.0 WASTE ANALYSIS FOR SPILLS AND UNKNOWN LIQUIDS

In the event of a spill or release of dangerous waste within the 616 NRDWSF, the following steps will be implemented.

- The identification number on the leaking container will be determined based on visual inspection. If the container(s) involved cannot be approached, the location of the container involved and the associated storage cell designations can be determined from a distance. It should be noted that the written waste inventory log and the 616 NRDWSF database can track a container identification number to the exact location in the storage cell.

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- The container identification number or container location number will be entered into the 616 NRDWSF inventory database to determine the waste identification (HWDAR) number to track the container to the waste characterization file or find the data correlation from the waste inventory log.

- The hard copy of the HWDAR will be located, which contains all applicable information regarding the contents of the container. The hazards associated with the waste will be determined before exercising the emergency response procedures outlined in the 616 NRDWSF building emergency plan (WHC 1993).

- Respond to the spill in accordance with the requirements of the 616 NRDWSF building emergency plan (WHC 1993).

If a leak or other liquid is discovered within the 616 NRDWSF that cannot be tracked to a specific container because of safety or logistics reasons, the procedures outlined in the 616 NRDWSF building emergency plan would be implemented for responding to an 'unknown' chemical release. The residues of such a release would be sampled and analyzed in accordance with the requirements in Section 7.1 to determine the characteristics of the waste residue as defined by 40 CFR 261.

The unloading and loading area outside the 616 NRDWSF is equipped with containment berms that provide secondary containment for spills or leaks that could occur in the unloading and loading area. Under normal operating conditions, such as receipt of a shipment or unloading of containers, the drain plug in the unloading and loading area is kept closed and locked to ensure containment within the bermed area. In the event that waste residues are discovered in the unloading and loading area, the following will be performed.

- The material involved in the spill will be known based on the waste information provided by the generating unit on the WSDR. In the event that the material spilled is not known (e.g., two different waste types spill and react resulting in other chemical combinations), a sample will be collected and analyzed to characterize the material. This analysis will include pH, metals, volatile organics, and semivolatile organics. Sampling and analysis will be performed as described in Section 7.1.

- Absorbents will be applied to the spill area to clean up the spilled material. If necessary, neutralizing or other chemical agents will be applied to mitigate potential chemical reactions or to better control highly toxic materials. The plate overlying the drain plug will be removed and absorbents and neutralizing agents added to the drain plug area. The interior lip of the drain plug structure will be swabbed with absorbent pads to remove any spill material or decontamination solutions.

- Absorbed waste will be cleaned up from the unloading and loading area and the drain plug area with brooms and dust pans and placed in compatible containers. The absorbed material also could be collected

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manually (by wearing proper protective equipment). The containers will be labeled appropriately (based on characterization), and the waste will be managed as follows:

- If the waste has been altered during stabilization and cleanup actions (absorbed, mixed, diluted, etc.), the containerized waste will be placed in storage.

- A WSDR will be submitted to the SWDD staff for waste designation. In response, the SWDD staff will issue a HWDAR describing the regulatory status and proper packaging, labeling, and marking requirements for the waste.

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

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

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- The affected area will be decontaminated with cleaning agents appropriate to the material spilled and the cleaning and rinse solutions collected in containers. The effectiveness of the decontamination effort will be determined as follows.

  - Wipe samples will be taken of the spill area in accordance with an approved procedure (EPA 1987a) using Whatman[1] No. 42 filter paper or an equivalent. The filter paper used to collect the sample will be moistened with an appropriate collection medium based on the characteristics of the spilled material. Wherever possible, organic free water will be used as the collection medium to minimize the generation of additional dangerous waste. In the event that water would not be an appropriate collection medium to dissolve the contamination of concern, the solvent used by the laboratory for analysis will be used. The filter paper will be sent to a laboratory where the filter paper will be prepared and analyzed for constituents known to have been involved in the spill to confirm cleanup adequacy.

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

  - When sampling techniques have confirmed cleanup, the 616 NRDWSF Supervisor will sign the spill logbook indicating that the waste was

[1]Whatman is a trademark of Whatman Incorporated.

removed from the containment system and cleanup activities were completed. A SWDD representative, other than the 616 NRDWSF Manager, will review the actions taken and the entries in the spill logbook before signing the logbook to indicate approval of the actions taken.

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

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

- The water will be removed from the containment system. Water that cannot be confirmed to be free of contamination will be containerized and stored in an area equipped with secondary containment.

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

If contamination remains, decontamination will be repeated as needed and completion of decontamination confirmed by sampling and analysis.

- The collected cleaning and rinse solutions will be labeled and managed at the 616 NRDWSF as dangerous waste pending the receipt of analytical results. The cleaning and rinse solutions will be reclassified as to waste type on receipt and review of the analytical results and dispositioned accordingly.

The drain plug will remain in place until all cleanup and decontamination is completed.

All spill response, clean up, and notification will be in accordance with the 616 NRDWSF building emergency plan.

13.0 QUALITY ASSURANCE AND QUALITY CONTROL

The primary purpose of waste testing is to ensure that the waste is properly characterized in lieu of process knowledge data in compliance with RCRA requirements for general waste analysis (40 CFR 264.13). Waste testing also is performed to ensure the safe management of waste being stored, proper disposition of residuals from incidents that might occur, and control of the acceptance of waste for storage. The specific objectives of the waste sampling and analysis program for waste being sent to the 616 NRDWSF are as follows:

- Identify the presence of waste that is substantially different from waste currently stored

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- Provide an analysis that is accurate and up-to-date to ensure that waste is properly treated and disposed of
- Ensure safe management of waste undergoing storage at the 616 NRDWSF
- Ensure proper disposal of residuals
- Ensure compliance with LDRs
- Identify and reject waste that does not meet the 616 NRDWSF waste acceptance criteria and the HWDAR.

13.1 QUALITY ASSURANCE AND QUALITY CONTROL OBJECTIVES

The objectives of the QA/QC program are two-fold. The first objective is to control and characterize any errors associated with the collected data. Quality assurance activities, such as the use of standard procedures for locating and collecting samples, are intended to limit the introduction of error. Quality control activities, such as the collection of duplicate samples and the inclusion of blanks in sample sets, are intended to provide the information required to characterize any errors in the data. Other QC activities, such as planning the QC program and auditing ongoing and completed activities, ensure that the specified procedures are followed and that the QA information needed for characterizing error is obtained.

The second QA/QC objective is to illustrate that waste testing has been performed according to specification in this waste analysis plan. The QA/QC activities will include the following.

- Laboratory analyses--performed by onsite or offsite laboratories on samples of waste. The purpose of the laboratory analyses is to determine constituents or characteristics present and the concentration or level.
- Checklists--required for critical inspections. Checklists are filled out during the course of a laboratory inspection to document inspection results.
- Instrument calibration--required for maintaining records of calibration of all instruments used to perform surveying, field testing, and laboratory analyses.

13.2 DATA QUALITY OBJECTIVES

The data quality objectives (DQOs) (EPA 1987b) for waste testing will include, but not be limited to, the requirements of Section 13.0.

13.3 SAMPLING OBJECTIVES

The DQOs for the waste sampling and data analyses are as follows:

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- Determine if waste samples are representative of the contents of the containers at the time the samples were taken

- Determine if waste samples are representative of long-term operations affecting the 616 NRDWSF

- Determine if waste accepted for storage is within the RCRA permit application documentation limitations

- Determine if waste accepted for storage meets the requirements of the 616 NRDWSF waste acceptance criteria

- Determine if waste accepted for storage meets the WSDR provided by the generating unit.

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13.4 DATA COLLECTION/SAMPLING OBJECTIVES

The acquired data need to be scientifically sound, of known quality, and thoroughly documented. The DQOs for the data assessment will be used to determine compliance with National Quality Standards, which are as follows.

- Precision--the precision will be the agreement between the collected samples (duplicates) for the same parameters, at the same location, and from the same collection vessel

- Representativeness--the representativeness will address the degree to which the data accurately and precisely represents a real characterization of the population, parameter variation at a sampling point, sampling conditions, and the environmental condition at the time of sampling. The issue of representativeness will be addressed for the following points.

  - Based on the generating process, the waste stream, and its volume, an adequate number of sampling locations are selected.

  - The representativeness of selected media has been defined accurately.

  - The sampling and analytical methodologies are appropriate.

  - The environmental conditions at the time of sampling are documented.

- Completeness--the completeness will be defined as the ability of the sampling and analytical methodologies to accurately measure the contaminants present in the waste.

- Comparability--the comparability of the data generated will be defined as the data that are gathered using standardized sampling methods, standardized analysis methods, and quality-controlled data reduction and validation methods.

13.5 ANALYTICAL OBJECTIVES

The data for chemical analyses will meet the EPA quality level III criteria. Data from radiological analyses will meet EPA quality level V criteria.

13.6 FIELD QUALITY ASSURANCE AND QUALITY CONTROL

Internal QA/QC checks will be established by submitting QA and QC samples to the analytical laboratory. The number of field QA samples will be approximately 5 percent of the total number of field samples taken. The 5 percent criterion commonly is accepted for a minimum number of QA/QC samples. The types and frequency of collection for field QA samples are as follows.

- Field Blanks--defined as samples of ASTM Type II (or other high purity) water from the same source as water used for decontamination. One field blank will be prepared for each sampling event and analyzed for the same analytes as the samples collected that day. A field blank will be taken each day of sampling at a minimum. Field blanks are prepared and preserved using sample containers from the same lot as the other samples collected that day. Results of the field blank analysis will help determine the level of contamination introduced into the sample due to sampling technique and as a check of the water used for decontamination.

- Field Replicates--defined as independent samples collected in such a manner that the samples are equally representative of the variables of interest at a given point in space and time. The laboratory will use the field replicate as laboratory replicates and/or matrix spikes. Thus, for the replicate sample, there will be the normal sample analysis, the field replicate, and the laboratory replicate (inorganic analysis). Replicate samples will provide an estimate of sampling precision.

13.7 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

The daily quality of analytical data generated in the contracted analytical laboratories will be controlled by the implementation of an analytical laboratory QA plan.

Before commencement of the contract for analytical work, the laboratory will submit its QA plan to the waste analysis project manager and the QA officer for approval. At a minimum, the plan will document the following:

- Sample custody and management practices
- Sample preparation and analytical procedures
- Instrument maintenance and calibration procedures
- Internal QA/QC measures including the use of method blanks
- Sample preservatives used
- Analyses requested.

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The types of internal quality control checks are as follows.

- Method Blanks--method blanks usually consist of laboratory reagent grade water treated in the same manner as the sample (i.e., digested, extracted, distilled) that are analyzed and reported as a standard sample would be reported.

- Method Blank Spike--a method blank spike is a sample of laboratory reagent-grade water fortified (spiked) with the analytes of interest, which is prepared and analyzed with the associated sample batch.

- Laboratory Control Sample for Inorganics--this is a standard solution with a certified concentration that is analyzed as a sample and used to monitor analytical accuracy (equivalent to a method blank spike).

- Matrix Spikes--a matrix spike is an aliquot of an investigative sample that is fortified (spiked) with a known quantity of the analytes of interest and analyzed with an associated sample batch to monitor the effects of the investigative sample matrix (matrix effects) on the analytical method. Matrix spikes are performed only in association with selected protocols. Matrix spikes will be performed on 5 percent of the samples (1 in 20) or one per batch of samples, whichever is greater.

- Laboratory Duplicate Samples--duplicate samples are obtained by splitting a field sample into two separate aliquots and performing two separate analyses on the aliquots. The analysis of laboratory duplicates monitors the precision of the analytical method for the sample matrix. However, it might be affected by nonhomogeneity of the sample, particularly in the case of nonaqueous samples. Duplicates are performed only in association with selected protocols. Laboratory duplicates are performed on 5 percent of the samples (1 in 20) or one per batch of samples, whichever is greater. If the precision value exceeds the control limit, the sample set must be reanalyzed for the parameter in question.

- Known QC Check Sample--this is a reference QC sample as denoted by SW-846 of known concentration, obtained from the EPA, the National Institute of Standards and Technology, or an EPA-approved commercial source. This QC sample is to check the accuracy of an analytical procedure. It is particularly applicable when a minor revision or adjustment has been made to an analytical procedure or instrument. The results of a QC check standard analysis are compared with the true values and the percent recovery of the check standard is calculated.

14.0 RECORDKEEPING

This waste analysis plan is kept with the SWDD manuals containing all documents referenced in the waste analysis plan except for the laboratory documents, which are maintained at the laboratories. Records associated with

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the waste analysis plan and waste confirmation program are maintained by the SWDD organization. A copy of the HWDAR for each waste stream accepted at the 616 NRDWSF also is maintained at the 616 NRDWSF office. Generating units maintain their sampling and analysis records. If necessary to complete the waste designation and audit compliance with SW-846 sampling and analysis protocols, the SWDD might request copies of this information. The analytical data would be kept with the HWDAR packages.

The waste analysis plan will be revised under the following circumstances:

- Whenever test methods are changed
- When waste streams or process operations are modified, thus requiring a change in the parameters to be tested
- Referenced personnel, organizations, or procedures change
- Whenever regulation changes affect the waste analysis plan.

This waste analysis plan is maintained as a controlled document under the existing guidelines for document control within the SWDD. Documents are maintained for a period of 5 years by the SWDD group and are forwarded to the Document Control organization for permanent storage.

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15.0 GLOSSARY

This section contains acronyms, abbreviations, and terminology, and metric conversions used throughout this document.

616 NRDWSF	616 Nonradioactive Dangerous Waste Storage Facility
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
CIN	container identification number
DOE-RL	U.S. Department of Energy, Richland Operations Office
DQO	data quality objectives
EPA	U.S. Environmental Protection Agency
FIFRA	*Federal Insecticide, Fungicide, and Rodenticide Act of 1975*
ft	foot
HP	health physics
HWDAR	hazardous waste disposal analysis record
IH	industrial hygiene

inch	inch
LDR	land disposal restriction
MSDS	material safety data sheets
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyls
pH	negative concentration logarithm of the hydrogen-ion concentration
QA/QC	quality assurance and quality control
RCRA	*Resource Conservation and Recovery Act of 1976*
SWDD	solid waste disposal division
TSCA	*Toxic Substances Control Act of 1976*
TSD	treatment, storage, and/or disposal
WAC	Washington Administrative Code
WHC	Westinghouse Hanford Company
WSDR	waste storage disposal request

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METRIC CONVERSION CHART

The following conversion chart is provided to the reader as a tool to aid in conversion.

Into metric units

If you know	Multiply by	To get
Length		
nches	25.40	millimeters
inches	2.54	centimeters
feet	0.3048	meters
yards	0.914	meters
miles	1.609	kilometers
Area		
square inches	6.4516	square centimeters
square feet	0.092	square meters
square yards	0.836	square meters
square miles	2.59	square kilometers
acres	0.404	hectares
Mass (weight)		
ounces	28.35	grams
pounds	0.453	kilograms
short ton	0.907	metric ton
Volume		
fluid ounces	29.57	milliliters
quarts	0.95	liters
gallons	3.79	liters
cubic feet	0.03	cubic meters
cubic yards	0.76	cubic meters
Temperature		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius

Out of metric units

If you know	Multiply by	To get
Length		
millimeters	0.0393	inches
centimeters	0.393	inches
meters	3.2808	feet
meters	1.09	yards
kilometers	0.62	miles
Area		
square centimeters	0.155	square inches
square meters	10.7639	square feet
square meters	1.20	square yards
square kilometers	0.39	square miles
hectares	2.471	acres
Mass (weight)		
grams	0.0352	ounces
kilograms	2.2046	pounds
metric ton	1.10	short ton
Volume		
milliliters	0.03	fluid ounces
liters	1.057	quarts
liters	0.26	gallons
cubic meters	35.3147	cubic feet
cubic meters	1.308	cubic yards
Temperature		
Celsius	multiply by 9/5ths, then add 32	Fahrenheit

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE., Second Ed., 1990, Professional Publications, Inc., Belmont, California.

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Resource Conservation and Recovery Act of 1976, as amended, 42 USC 6901 et seq.

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40 CFR 264, *Standards of Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities*

40 CFR 268, *Land Disposal Restrictions*

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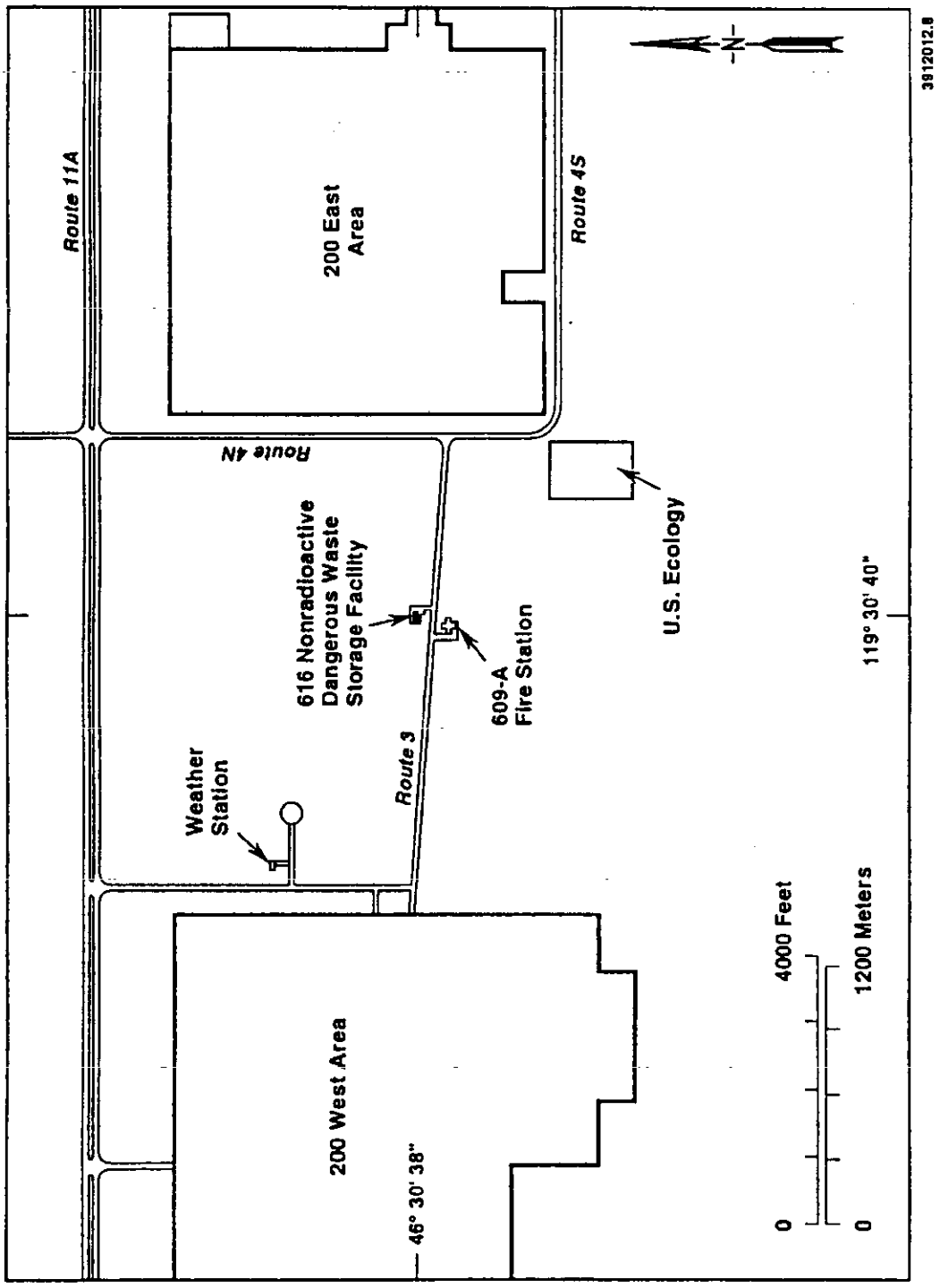

Figure 1. Location of 616 Nonradioactive Dangerous Waste Storage Facility.

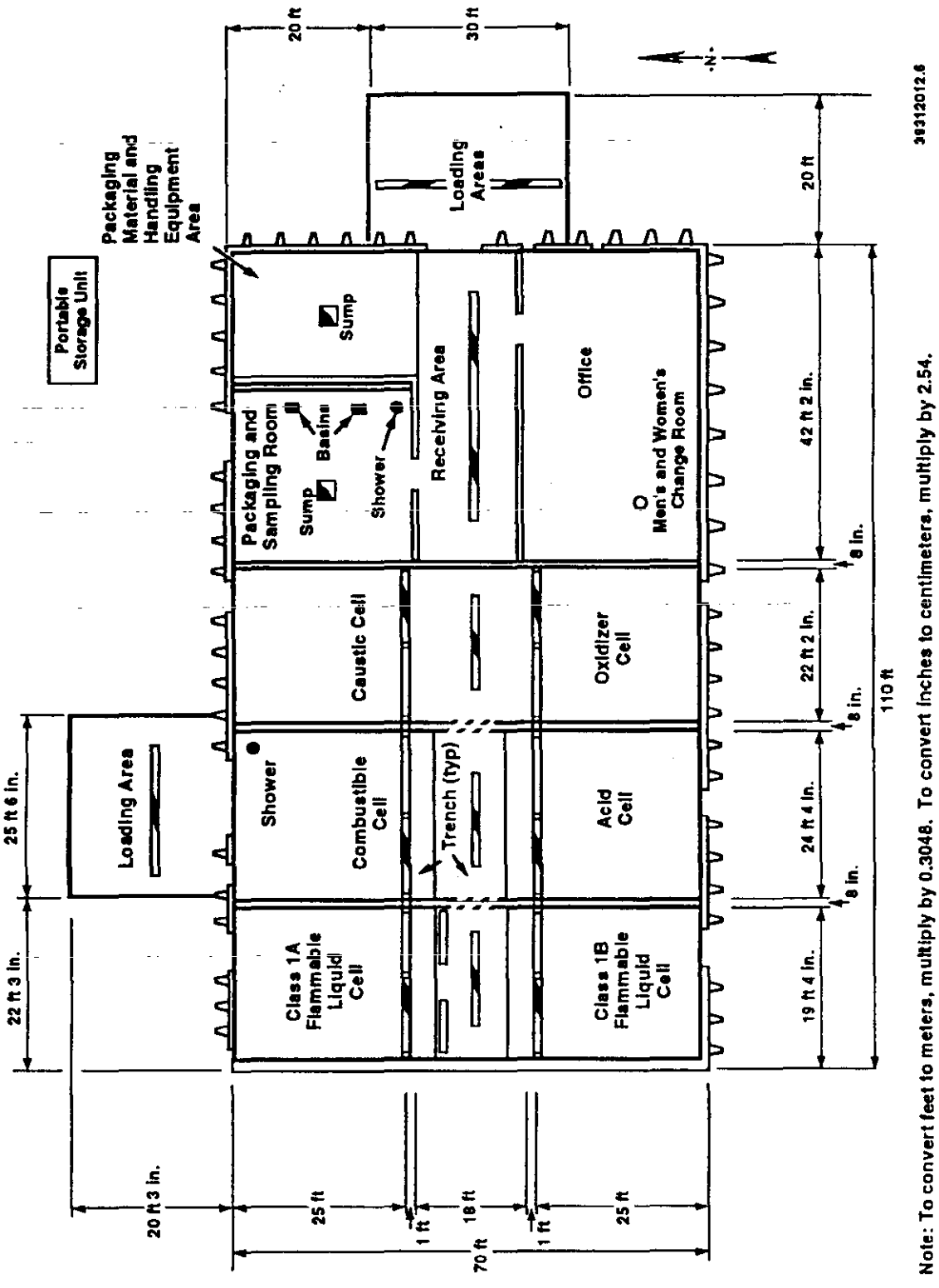

Figure 2. 616 Nonradioactive Dangerous Waste Storage Facility Floor Plan.

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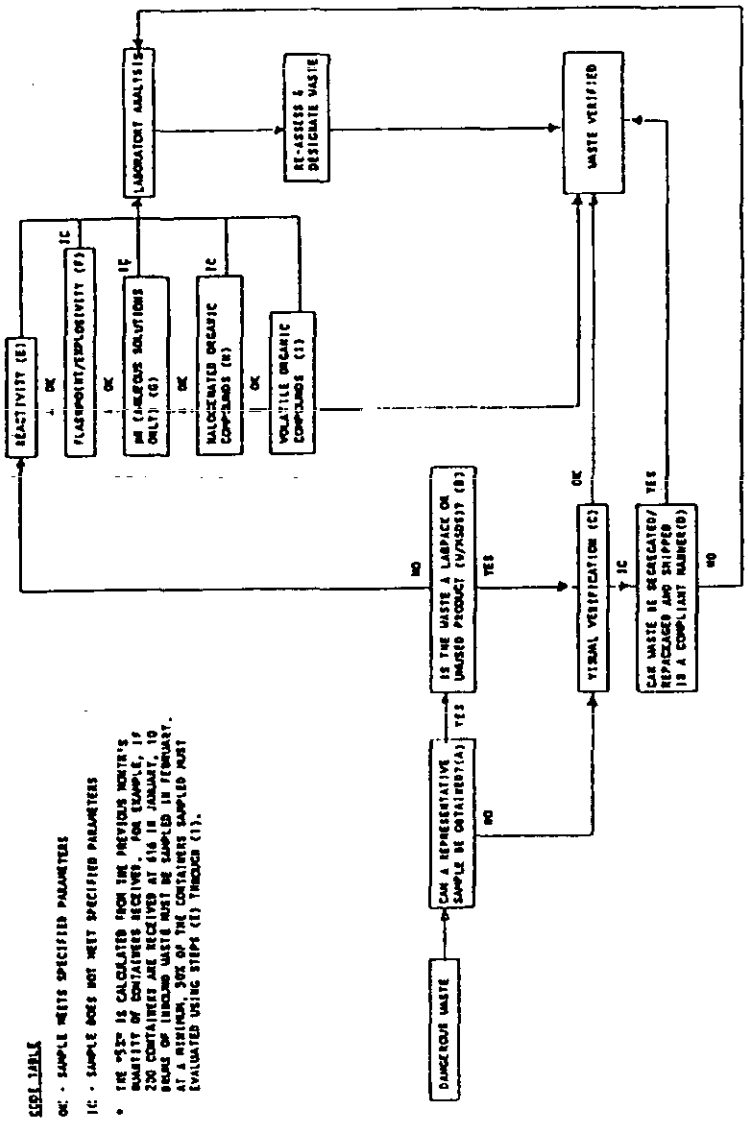

Figure 3. 616 Nonradioactive Dangerous Waste Storage Facility 5 Percent Waste Confirmation Techniques.

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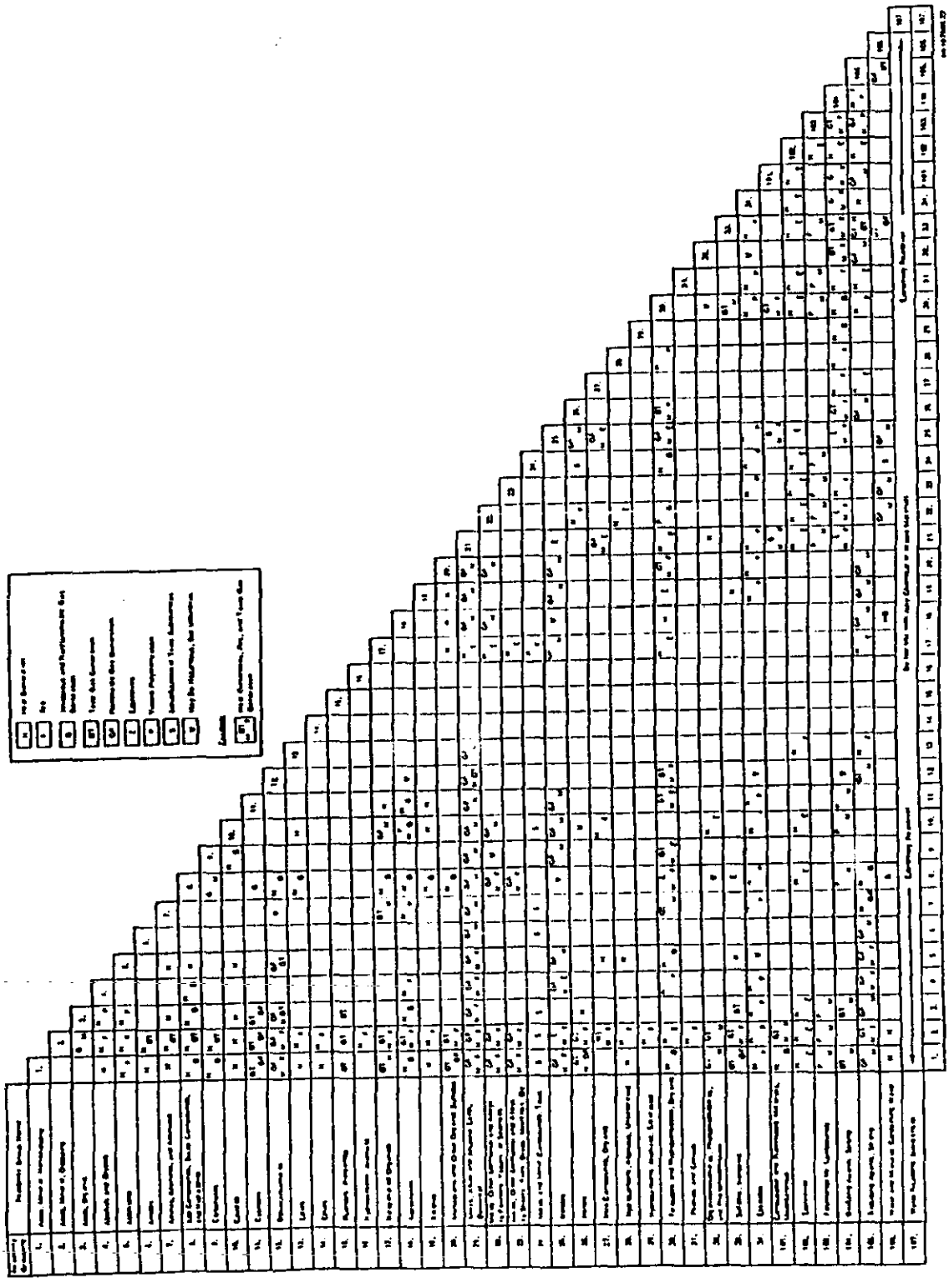

Figure 4. Compatibility Chart (USCG 1985).

Table 1. Analytical Methodology Specified for Generating Unit Waste.
(sheet 1 of 3)

Parameter and method		Reference (EPA 1986 unless otherwise specified)
CHARACTERISTICS:		
Flash point	Pensky-Martens closed-cup method	1010
Flash point	Setaflash[a] closed-cup method	1020
Corrosivity	pH meter or pH paper	9040 and 9041
Heavy metals	Toxicity characteristic leaching procedure	1311
INORGANIC TECHNIQUES:		
Acid digestion procedure for flame atomic absorption spectroscopy		3010
Acid digestion procedure for furnace atomic absorption spectroscopy		3020
Acid digestion of oils, greases, or waxes		3040
Acid digestion of sludge		3050
Alkaline digestion		3060
ORGANIC TECHNIQUES:		
Separation funnel liquid, liquid extraction		3510
Continuous liquid, liquid extraction		3520
Acid-base cleanup extraction		3530
Soxhlet extraction		3540
Sonication extraction		3550
INORGANIC ANALYTICAL METHODS:		
Antimony		
	Atomic absorption, direct aspiration method	7040
	Atomic absorption, graphite hydride method	7041
Arsenic		
	Atomic absorption, furnace method	7060
	Atomic absorption, gaseous hydride method	7061
Barium		
	Atomic absorption, direct aspiration method	7080
	Atomic absorption, furnace method	7081
Beryllium (reserved)		
	Atomic absorption, direct aspiration method	7090
	Atomic absorption, furnace method	7091
Cadmium (8.54)		
	Atomic absorption, direct aspiration method	7130
	Atomic absorption, furnace method	7131

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Table 1. Analytical Methodology Specified for Generating Unit Waste.
(sheet 2 of 3)

Parameter and method	Reference (EPA 1986 unless otherwise specified)
Chromium	
Atomic absorption, direct aspiration method	7190
Atomic absorption, furnace method	7191
Hexavalent chromium, co-precipitation	7195
Hexavalent chromium, calorimetric	7196
Hexavalent chromium, chelation-extraction	7197
Hexavalent chromium, differential pulse polargraphy	7198
Copper	
Atomic absorption, direct aspiration method	7210
Atomic absorption, furnace method	7211
Lead	
Atomic absorption, direct aspiration method	7420
Atomic absorption, furnace method	7421
Mercury	
In liquid waste (manual cold vapor technique)	7470
In solid or semisolid waste (manual cold vapor technique)	7471
Nickel	
Atomic absorption, direct aspiration method	7520
Atomic absorption, furnace method	7521
Osmium	
Atomic absorption, direct aspiration method	7550
Atomic absorption, furnace method	7551
Selenium	
Atomic absorption, direct aspiration method	7740
Atomic absorption, furnace method	4441
Silver	
Atomic absorption, direct aspiration method	7760
Atomic absorption, furnace method	7761
Thallium	
Atomic absorption, direct aspiration method	7840
Atomic absorption, furnace method	7841
Vanadium	
Atomic absorption, direct aspiration method	7910
Atomic absorption, furnace method	7911
Zinc	
Atomic absorption, direct aspiration method	7950
Atomic absorption, furnace method	7951

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Table 1. Analytical Methodology Specified for Generating Unit Waste.
(sheet 3 of 3)

Parameter and Method	Reference (EPA 1986 unless otherwise specified)
ORGANIC ANALYTICAL METHODS:	
Gas chromatographic methods	
Halogenated volatile organics	8010
Nonhalogenated volatile organics	8150
Aromatic volatile organics	8020
Acrolein, acrylonitrile, and acetonitrile	8030
Phenols	8040
Phthalate esters	8060
Organochloride pesticides and polychlorinated biphenyls	8080
Nitroaromatics and cyclic ketones	8090
Polynucleararomatic hydrocarbons	8100
Chlorinated hydrocarbons	8120
Organophosphate pesticides	8140
Chlorinated herbicides	8150
Gas chromatographic/mass spectroscopy (GC/MS) methods	
GC/MS method for volatile organics	8240
GC/MS method for semivolatile organics packed column technique	8270
GC/MS method for semivolatile organics: capillary column technique	8250
MISCELLANEOUS ANALYTICAL METHODS:	
Total and amenable cyanide	9010
Total organic halides	9020
Sulfides	9030
Fish toxicity, static acute fish toxicity text	Ecology 80-12 Part A[b]
Rat toxicity, acute oral rat toxicity test	Ecology 80-12 Part B[b]
Halogenated hydrocarbons	Ecology 83-13[c]
Polycyclic aromatic hydrocarbons	Ecology 83-13[c]

[a]Setaflash is a trademark of ERDCO Engineering Corporation.
[b]Ecology (1980).
[c]Ecology (1982).

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Table 2. Sampling Methods and Equipment.

Material	Sampling method	Sampling equipment
Containerized liquids	SW-846	COLIWASA* or tubing
Extremely viscous liquid	ASTM D140-70	Tubing or trier
Crushed or powdered material	ASTM D346-75	Tubing, trier, auger, scoop, or shovel
Soil or rock-like material	ASTM D420-69	Tubing, trier, auger, scoop, or shovel
Soil-like material	ASTM D1452-65	Tubing, trier, auger, scoop, or shovel
Fly ash-like material	ASTM D2234-86	Tubing, trier, auger, scoop, or shovel
Containment systems	Wipe sampling (OSHA 1977)	Filter paper and cleaning solution

*COLIWASA = composite liquid waste sampler device.

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

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

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

Analytical Parameter	Rationale for Selection
9. PCB screen	To determine PCB content in oil-bearing waste for the purpose of managing this waste in accordance with regulations prescribed in the *Toxic Substance Control Act of 1976*.
10. TCLP	A method used to determine whether a waste is a regulated toxic waste due to its toxicity characteristics.
11. Toxicity	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its toxic constituents as determined by the NIOSH Registry of Toxic Effects.
12. Halogenated hydrocarbons	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its halogenated hydrocarbon content.
13. Polycyclic aromatic hydrocarbons	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its polycyclic aromatic hydrocarbon content.
14. Carcinogenicity	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its carcinogenic chemical constituents as determined by the International Agency for Research on Cancer.
15. Biological testing	To determine whether a waste is Ecology-regulated dangerous waste or extremely hazardous waste because of its toxic constituents as determined by tests on biological systems.

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

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Table 4. Sample/Container Compatibility.

Sample	Container		
	Plastic	Glass	Metal
Acids (except hydrofluoric)	*	*	
Hydrofluoric acids	*		
Alkalies	*	*	
Solvents/Solvent Contaminated Oils	*[1]	*	*
Oils	*	*	*
Solids	*	*	*
Aqueous Waste	*	*	

*Sample compatible for storage in this type of container.
[1]Polypropylene can be used with some solvent and/or solvent oil wastes.

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APPENDIX 8A

RCRA TRAINING

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APPENDIX 8A

RCRA TRAINING

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CONTENTS

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LIST OF TABLES

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8A-1.0 TRAINING PROGRAM DESCRIPTION

This appendix describes the *Resource Conservation and Recovery Act of 1976* (RCRA) training program that is implemented at Solid Waste Disposal Division (SWDD) waste management units. Terms used in this appendix include Hanford Facility personnel, visitors, and subcontractors. Hanford Facility personnel include employees of the U.S. Department of Energy, Richland Operations Office (DOE-RL), and employees of the Hanford Facility major contractors (i.e., Westinghouse Hanford Company, Pacific Northwest Laboratories, Bechtel Hanford Company). Visitors include personnel who do not have a contract in place with DOE-RL or the Hanford Facility major contractors, and regulatory agency personnel who conduct regulatory compliance inspections. Subcontractors refer to any contractor working for DOE-RL or the major Hanford Facility contractors. These definitions could differ from other definitions used on the Hanford Facility to describe training requirements.

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8A-1.1 TRAINING PROGRAM DIRECTOR

The manager of each SWDD waste management unit has overall responsibility for all training at the SWDD units under their control. However, no one individual is designated as training director. The position is shared among SWDD, training, and support organizations. The SWDD can access training resources and experts from many different areas on hazardous material, dangerous waste management, and safety rather than rely on the knowledge of one or more persons. This shared responsibility ensures the identification of appropriate training requirements and that the training program meets all applicable dangerous waste management requirements. General responsibilities for training are discussed in the following sections.

8A-1.1.1 SWDD Responsibilities

The SWDD has the following responsibilities related to training:

- Determine training requirements and training compliance for all Hanford Facility personnel, subcontractors, and visitors who obtain access or work within SWDD units
- Request and/or conduct training
- Submit training completion records to the Training Records Information (TRI) system
- Identify training requirements to contractors working in or around SWDD units.

8A-1.1.2 Training Organization Responsibilities

Training organizations have the following responsibilities:

- Conduct informal job analysis and identify training commensurate with personnel duties and responsibilities
- Design and develop training programs
- Develop and instruct training courses
- Develop and maintain on-the-job training requirements
- Operate and maintain centralized computerized training record files
- Track refresher requirements and maintain current training status for SWDD personnel
- Maintain the TRI system
- Process training completion records received into the TRI system.

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8A-1.1.3 RCRA Support Organization Responsibilities

The RCRA support organizations have the following responsibilities:

- Consult with training organizations and SWDD in the development and reevaluation of current training programs
- Assist SWDD managers in determining training requirements and RCRA compliance for personnel
- Maintain current knowledge of RCRA training requirements pertaining to Hanford Facility personnel.

8A-1.1.4 ICF Kaiser Hanford Company (ICF KH) Responsibilities

ICF KH, whose personnel are classified as Hanford Facility personnel, has the following responsibilities:

- Ensure ICF KH employees are trained to meet SWDD unit training requirements
- Maintain ICF KH employee training records and provide them if requested by SWDD.

8A-1.2 TRAINING FREQUENCY

New employee training is completed within the first 6 months of assignment to SWDD or to a new position within the SWDD units, whichever is later. After completing introductory training, employees are required to receive annual refresher training for RCRA-related courses to meet continuing training requirements, unless otherwise justified. When annual refresher training is not warranted, the justification will be provided in the

corresponding course description in Appendix 8C. Refresher training for non-RCRA courses can occur either annually or biennially. Untrained employees are not allowed to work at SWDD units without supervision by a trained employee. The SWDD operations management is responsible for ensuring that all SWDD employees are trained and that certifications are maintained. To help inform SWDD operations when training will expire, a tickler file is available to indicate when training is within 90 days of expiration.

8A-1.3 TRAINING RECORDS

8A-1.3.1 Location of Training Records

Training records, as described in WAC 173-303-330, consist of documentation that shows training has been completed. Hanford Facility training records include both electronic data storage and hard copies. The electronic data storage information is the training record initially presented to demonstrate that personnel at SWDD units have been trained. After a course is completed, the electronic data storage record is created on the TRI system. The electronic data storage record will contain the course number, course title, date of attendance, and any refresher dates.

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Hard copies of training records that are sent to the training record organization for entry onto the TRI system are initially maintained in Richland, Washington. Original hard copy training records are transferred quarterly to the Records Holding Facility in Richland, Washington. After approximately 1 year, the original hard copy training records are archived at the Federal Records Center in Kent, Washington. Electronic data storage and hard copy training records on former employees are kept for at least 3 years from the date the employee last worked at a SWDD unit.

8A-1.3.2 Access of Training Records

When a training record is requested during an inspection, an electronic data storage record will initially be provided. When the electronic data record does not satisfy the inspection concern, a hard copy training record will be provided. Training records on former employees may not be available for normal users and may require a representative from the training records organization to access the TRI system for this information.

8A-1.3.3 Determining Current Training Status

After an electronic data storage training record is obtained, it will be compared to information in Appendices 8A and 8D of this plan. This plan can be used to determine the RCRA training status of all Hanford Facility personnel, visitors, and subcontractors. The electronic data storage training record coupled with this training plan will allow any inspector the ability to quickly determine the training status of personnel in the field. To accomplish this, the correct training must be assigned after properly categorizing personnel into a variety of program areas.

8A-2.0 ASSIGNING THE CORRECT TRAINING

8A-2.1 EMPLOYEE CATEGORIES, JOB POSITIONS, AND DESCRIPTIONS

Five general worker categories are defined for compliance with the Hanford Facility dangerous waste training requirements. Personnel duties and responsibilities may overlap between categories. When overlaps occur, personnel will complete appropriate training pertaining to each category. The determining factor for placing specific personnel within any of the worker categories is the corresponding job duties. The five worker categories are as follows:

1. All Employees
2. General Worker
3. Advanced General Worker
4. General Manager
5. General Shipper.

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The duties corresponding to these categories can be divided between "generator" and "SWDD unit" operations. The level of training is determined by the duties associated with each worker category. The descriptions of job duties for each category are general in nature; however, they do provide adequate specifics that can be matched to individual job titles or job positions commonly employed at the Hanford Facility. A general description of the duties associated with each worker category is contained in Table 8A-1.

The SWDD unit personnel are assigned a job title (from the salaried nonexempt or bargaining unit classifications) or position (from the exempt classifications). The job or position descriptions include applicable requisite skills, work experience, education, other qualifications, and a brief list of duties and/or responsibilities for each job title or position. Information regarding work experience, education, and other qualifications required for each position is maintained on the Hanford Facility. In general, all personnel require a high school diploma or General Educational Development (GED) certificate. Personnel filling exempt management or engineering positions may require a college degree with 2 or more years of industry experience. Many prerequisites exist for these positions. In some cases, a college degree may be waived as a prerequisite requirement. An equivalent combination of education and experience also may be accepted. Additional information on specific prerequisites can be provided upon request to SWDD management.

The following sections describe, within the appropriate worker category, job titles and brief position descriptions of Hanford Facility personnel, visitors, and subcontractors associated with dangerous waste management at SWDD units. Subcontractors and visitors requiring access to work or tour SWDD units must complete the appropriate level of training determined by SWDD management according to their job duties. Most visitors and subcontractors will be trained as if they were in the All Employee or General Worker categories, respectively.

Table 8A-1. Worker Categories.

Worker Categories	Generator Job Duties	SWDD Unit Specific Job Duties
All Employees	Is not categorized as a General Worker, Advanced General Worker, General Manager, or General Shipper.	Duties are the same as for generator job duties.
General Worker	Generates dangerous waste and places waste into appropriate containers. Waste management activities are overseen by person-in-charge or other SWDD unit personnel. Contingency plan duties are to immediately evacuate incident area and report incident to appropriate personnel. Duties and responsibilities would not exceed those stated above.	SWDD unit-specific duties might include repair, replacement, calibration, modification, or any other similar activity on SWDD unit systems. Work performed is either supervised by individuals with in-depth knowledge of systems and components or is adequately addressed through organized pre-job briefing before commencing work. Contingency plan duties are to evacuate the SWDD unit during emergencies and notify appropriate personnel.
Advanced General Worker	Duties include the generation and management of dangerous waste. Selects, packages, and prepares containers of dangerous waste for movement including proper marking and labeling of containers. Performs inspections of waste accumulation areas. Samples containers of dangerous waste and prepares samples for delivery to a laboratory. Contingency plan duties include responding to small spills in accordance with procedures within plans.	SWDD unit-specific duties include the control, operation, manipulation, sampling, transfer, or recording of dangerous waste within tank or waste process systems. Other duties include annunciator response and other offnormal operational responses to maintain SWDD unit within operational parameters. Escorts or directs General Workers in activities within the SWDD unit. Contingency plan duties include implementation of emergency procedures and small spill responses.
General Manager	Someone who can act as the Building Emergency Director, Environmental Compliance Officer, or directs Advanced General Workers in accumulation of dangerous waste. Responsible for the accountability and directing of employees during dangerous waste emergency events. Must be trained to the same level as managed employees.	Duties are the same as for generator job duties
General Shipper	Duties include the preparation and shipment of dangerous waste containers in compliance with applicable requirements. Directs General and Advanced General workers in dangerous waste management and/or transportation activities. Authorized individual for signing offsite waste manifests.	Duties are the same as for generator job duties.

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Personnel who have completed training offsite are required to provide a certificate or other suitable training course(s) evidence that meets the requirements of WAC 173-303 and this section. SWDD management, or a delegated representative, must verify the acceptability of offsite training as commensurate with the employee's anticipated job assignment and the minimum training requirements referenced in this section.

8A-2.1.1 All Employees

Hanford Facility personnel included in this category are not categorized into one of the other four worker categories. Personnel in the All Employees category will have no duties or responsibilities associated with the management of dangerous waste in accumulation containers, or with the critical system of the SWDD unit. Most of the personnel categorized as All Employees

will be administrative personnel and visitors, subcontractors, or support organizations who tour or provide oversight at the SWDD unit. Although visitors and subcontractors are not defined as Hanford Facility personnel, they are still trained to a level equivalent to the All Employees category.

8A-2.1.2 General Worker

Hanford Facility personnel or subcontractors with waste management duties limited to the generation of waste and placing that waste into a pre-approved container are classified as General Workers. In addition, these personnel could be working on the critical system(s) of a SWDD unit conducting maintenance or modification. Employees classified as General Workers will not assume responsibilities that involve the inspection, advanced marking, or movement of accumulation containers. Personnel who function as General Workers may include, but are not limited to, the following:

- Maintenance personnel
- Health physics technicians
- Supervisors of ICF KH general workers
- Contractor crafts
- Truck drivers.

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8A-2.1.3 Advanced General Worker

Hanford Facility personnel are categorized as Advanced General Workers if their job duties exceed that of General Workers. These personnel manage dangerous waste that can include the inspection, advance marking, or movement of containers. These personnel can also be involved in the operation of the SWDD unit's critical system(s). These personnel typically have responsibility to act and/or notify SWDD operations management when an incident occurs which requires immediate response, such as a spilled container or process upset.

8A-2.1.3.1 SWDD Operators. The SWDD operators can rotate through SWDD units and be assigned to different units during the year. Responsibilities and duties are similar regardless of the SWDD unit where the operators are currently working. Responsibilities for all SWDD operators at SWDD units include the following:

- Perform SWDD unit work activities in accordance with current operating procedures
- Escort supporting crafts and visitors working in or entering the SWDD unit
- Receive, segregate, sort, inventory, store, and stage dangerous waste
- Perform sampling as required by procedure
- Conduct routine inspections
- Provide surveillance of SWDD unit area for offnormal conditions

- Assist truck drivers in loading and unloading at the SWDD units
- Ensure that trucks transporting dangerous waste are properly placarded
- Respond to alarms at the SWDD units
- Respond to offnormal and/or emergency conditions according to established procedures
- Respond to dangerous waste leaks or spills
- Ensure that the waste has been properly secured in the transportation vehicle.

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8A-2.1.4 General Manager

Various types of management are included in this category. In addition, engineers assigned to SWDD units can be classified as General Managers if their involvement in waste management warrants such a classification. Other than the difference in titles, managers and engineers at SWDD units have many similar responsibilities and are required to take the same courses. The following managers are included within this category: (1) personnel who act as the Emergency Coordinator and/or alternate(s), (2) the Environmental Compliance Officer for the SWDD unit, and (3) managers of Advanced General Workers (i.e., operations managers). Engineers can be classified as General Managers if their responsibilities affect the critical system(s) of a SWDD unit.

8A-2.1.4.1 SWDD Building Emergency Director/Alternate(s). Responsibilities of the SWDD Emergency Coordinator/alternate(s) include the following:

- Function as the Emergency Coordinator as defined in WAC 173-303-360
- Determine if a RCRA contingency plan has been implemented during the course of an incident or process upset
- Ensure all reports to the Washington State Department of Ecology have been made after an incident or process upset has occurred
- Become thoroughly familiar with SWDD unit contingency plans, operations, activities, location and properties of all wastes handled, location of all records for the SWDD unit, and the SWDD unit layout.

8A-2.1.4.2 SWDD Environmental Compliance Officer. Responsibilities of the SWDD Environmental Compliance Officer include the following:

- Provide support to the SWDD unit management to ensure compliance with the applicable environmental compliance requirements as identified in this manual, environmental permits, the *Hanford Federal Facility Agreement and Consent Order* (Ecology et al. 1994), and other compliance orders

- Ensure that the SWDD unit management is aware of the unit's environmental compliance status and the unit's environmental compliance activities

- Understand and be able to explain the SWDD unit's environmental compliance status with all applicable environmental requirements

- Advise the SWDD unit management of new environmental requirements and policies, the associated impacts, and recommended implementation mechanisms to ensure compliance.

8A-2.1.4.3 SWDD Operations Management. Responsibilities of the SWDD operations management include the following and are similar for each SWDD unit:

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- Maintain control over SWDD unit operations in accordance with established operating procedures and policies, DOE orders, and federal and state regulations

- Direct, control, and coordinate the receipt, storage, transfer, and reprocessing of dangerous waste

- Ensure compliance with SWDD unit operating limits and specifications

- Ensure that pre-job safety and planning meetings are conducted, as applicable, with Hanford Facility personnel, visitors, and subcontractors involved with the SWDD unit operations

- Ensure that regulatory records are maintained

- Understand SWDD unit operating procedures as applicable

- Respond to and provide remedial guidance and decisions for operational anomalies, offnormal conditions, and equipment malfunctions

- Respond to offnormal and/or emergency conditions according to established procedures

- Coordinate the recovery from, measure, and reestablish control of unplanned releases to the environment and other emergency conditions

- Notify the Emergency Coordinator of any unplanned releases to the environment.

8A-2.1.4.4 SWDD Engineers. Responsibilities of SWDD engineers (may include cognizant, systems, test, and/or maintenance engineers) include the following:

- Ensure that emergency and monitoring equipment, process equipment, procedures, designs, etc., comply with DOE orders, federal and state regulations, national standards, and applicable engineering procedures and management standards

- Issue and maintain, or provide oversight and review of, operating documentation, operating procedures, flowsheets, sample schedules, specifications, process test plans and procedures, operational safety requirements, and other documents necessary to operate the SWDD units
- Perform routine and comprehensive evaluations of SWDD unit processes to ensure compliance with process control requirements, procedure compliance, and equipment performance, assessing problem areas and implementing timely corrective actions
- Prepare, issue, and review operating procedures and departure authorizations
- Maintain instrument and equipment flow diagrams
- Prepare design criteria and perform and approve design analysis
- Prepare and approve equipment and material specifications for new design
- Prepare and approve engineering design documents and drawings that are in compliance with applicable policies, procedures, and instructions in accordance with recognized national standards and codes
- Provide input to environmental permit applications
- Develop procedures for inspecting and replacing emergency and monitoring equipment
- Ensure compliance with requirements, applicable policies, programs, regulations, and DOE orders to ensure personnel safety, environmental compliance, and public safety
- Review and revise maintenance procedures and work plans, and ensure that procedures are current and accurate
- Provide technical direction for hazardous material and dangerous waste spill responses
- Respond to offnormal and/or emergency conditions according to established procedures.

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8A-2.1.5 General Shipper

General Shippers prepare and sign documentation for the shipment of dangerous waste. The SWDD units involve both onsite shipments and offsite shipments as defined by WAC 173-303-040. General Shippers who sign Uniform Hazardous Waste Manifests for offsite shipments are included within this appendix. Requirements for General Shippers who sign paperwork associated with onsite waste movements are discussed in Appendix 8B.

Offsite shipments are made from the 616 Nonradioactive Dangerous Waste Storage Facility (NRDWSF). In the future, offsite shipments may be made from other SWDD units; however, they are not occurring at this time. Offsite shipments may be received at some or all of the SWDD units. These shipments are received at the SWDD unit by SWDD operators who are categorized as Advanced General Workers. The SWDD operators will not be categorized as General Shippers because they are involved in the receipt of an offsite waste shipment.

8A-2.2 TRAINING PROGRAM AND STRUCTURE

The Hanford Facility training program was developed using a graded approach to training after reviewing DOE orders and federal and state regulations. Tasks performed by personnel in selected job positions were identified and evaluated to determine training requirements. In addition, training needs are evaluated continually in relation to current DOE orders and federal and state regulations. The current training program will be revised as necessary.

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8A-2.2.1 Relevance of Training to Job Positions

After assigning Hanford Facility personnel, visitors, and subcontractors into a worker category, the training program must ensure that those individuals receive training commensurate with their duties and responsibilities. Some of these duties are general in nature and can be taught in a course for all personnel within a worker category on the Hanford Facility. Other considerations are specific to either all or one SWDD unit and do not apply to other treatment, storage, and disposal (TSD) units managed on the Hanford Facility. The training program is therefore designed to address concerns on a general perspective and a unit/building perspective.

8A-2.2.2 Training Program Descriptions and Courses

The Hanford Facility training program is divided into five program areas. These program areas are described in Table 8A-2 as orientation, awareness, advanced, administration, and unit/job specifics. Three of these program areas are further divided into general training and unit/building specific training categories. These three areas are orientation, awareness, and advanced.

8A-2.2.2.1 Waste Management Orientation. All Hanford Facility personnel are required to complete Waste Management Orientation training. In general, the waste management orientation program includes training to emergency responses, identifying contacts for personnel to obtain dangerous waste management information, and waste minimization concepts. Visitors and subcontractors also will receive appropriate training in the Waste Management

Table 8A-2. DOE-RL Program Area Descriptions.

Program	Descriptions
Waste Management Orientation	Training at this level involves a basic introduction to dangerous waste management and contacts involving dangerous waste. Correct response to emergencies involving releases of materials to the environment is addressed. Training also includes a discussion of the Hanford Facility Contingency Plan (DOE-RL 1993) and other applicable conditions.
Unit/Bldg Orientation	This level of training provides unit/building specific information on the hazards in the immediate and surrounding work environments. This training will ensure personnel are informed about potential emergency at a unit/building to which access is desired.
Waste Management Awareness	The training at this level is commensurate with the duties of generating dangerous waste and placing the waste into pre-approved containers. The training provides an overview of requirements pertaining to satellite accumulation areas. Additionally, the training covers contingency plan requirements and worker response to small spills, materials release reporting, and notifications. General safe practices for handling and storing dangerous waste/materials are addressed.
Unit/Bldg Awareness	This level of the training encompasses the job-specific or building-specific requirements that supplement the information provided in waste management awareness. The training provides personnel with proper waste handling and emergency procedures relevant to their responsibilities during normal operations and emergencies.
Waste Management Advanced	The training at this level is for personnel required to properly select, package, and prepare for the movement of dangerous waste containers. General advanced training is provided only for container management. Training for other RCRA units such as tank systems, surface impoundments, landfills, etc., must be covered through the unit/building specific portion of the advanced program. This is the most comprehensive container waste management training provided to personnel and covers the necessary information regarding documentation, reporting, recordkeeping, and other information pertaining to the generation of dangerous waste and movement of the waste to a TSD unit.
Unit/Bldg Advanced	This level of training provides specific information required to operate, control, and manage processes and dangerous waste management operations. Considerations for this program involve container management as well as all other RCRA units such as tank systems, surface impoundments, landfills, etc. This program can be deferred to the unit/job specific program area if operator/supervisor certification programs must be administered at the TSD unit. Personnel who monitor and inspect tank systems receive training in this program area for operations, maintenance, and response to nonroutine conditions.
Waste Management Admin.	Training at this level is for general shippers and those who must resolve problems and issues related to dangerous waste management. This training covers aspects of waste minimization, waste management, and recordkeeping for the Hanford Facility.
Unit/Job Specific	The training at this level is designed to provide additional generator/SWDD unit/building specific information for personnel to ensure the safe and efficient operation and maintenance of SWDD unit processes and operations. Not all training within this program will be RCRA related. Some operator/supervisor certification programs are not based on dangerous waste management. In these cases, the training plan will identify which portions of this program will be included within the RCRA training program.

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Orientation program area for the locations such personnel will be at and the activities that will be undertaken. The concepts must be covered generally as they pertain to the Hanford Facility and on a unit/building basis to inform personnel of the hazards in their immediate and surrounding environments. When unit/building specific training requirements are waived, personnel must be escorted by qualified SWDD unit personnel. In these cases, it is the escorts responsibility to explain and announce the hazards in their immediate and surrounding environments. The following courses address training concerns within Waste Management Orientation:

Hanford Facility personnel

- New Hire Orientation (NHO)
  Retraining: Hanford General Employee Training (HGET)

- SWDD unit/building specific orientation (this requirement is waived when non-SWDD unit personnel are escorted by qualified SWDD unit personnel)
  Retraining: HGET

Visitors

- Visitor/Vendor Training
  Retraining: none

- Escorted by qualified SWDD unit personnel (see Appendix 8B for cases when SWDD unit/building specific orientation may be required)
  Retraining: none

Subcontractors

- NHO or Visitor/Vendor Training
  Retraining: HGET or none: time dependent

- SWDD unit/building specific orientation or escorted by qualified SWDD unit personnel
  Retraining: HGET or none: time dependent.

8A-2.2.2.2 Waste Management Awareness. In addition to Waste Management Orientation, General Workers, Advanced General Workers, General Managers, and General Shippers must complete Waste Management Awareness training. Subcontractors could also fall within this program description because many subcontractors are categorized as General Workers. Training at this level is commensurate with the duties of performing maintenance or construction activities where a dangerous or mixed waste is generated. Unit/building specific training also is provided in the awareness program area. The training courses that are provided for this program include the following:

Hanford Facility personnel

- Generator Hazards Safety Training
  Retraining: Provided through the non-RCRA Occupational Safety and Health Administration (OSHA) training in Appendix 8B

- SWDD unit/building specific Building Emergency Plan training (training may be provided through SWDD unit/building specific orientation)
  Retraining: same

Visitors

- SWDD unit/building specific emergency response training (see Appendix 8B for cases when SWDD unit/building specific orientation may be required)
  Retraining: none

Subcontractors

- Generator Hazards Safety Training
  Retraining: Provided through the non-RCRA OSHA training in Appendix 8B

- SWDD unit/building specific Building Emergency Plan training if not escorted by qualified SWDD personnel (training may be provided through SWDD unit/building specific orientation)
  Retraining: same.

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8A-2.2.2.3 Waste Management Advanced. Waste Management Advanced training must be completed by Advanced General Workers, General Managers, and General Shippers. General Managers complete training in the environmental regulations and/or environmental compliance course. Advanced General Workers and General Shippers complete training associated with containerized waste management. SWDD units subject to this training plan concern activities associated with container management (i.e., 616 NRDWSF, 224-T Transuranic Waste Storage and Assay Facility [TRUSAF], Central Waste Complex [CWC]), treatment (i.e., Waste Receiving and Processing Facility [WRAP]), and disposal (i.e., Low-Level Burial Grounds [LLBG], and Environmental Restoration Disposal Facility [ERDF]) of dangerous or mixed waste. Courses intended for this program area include the following:

- Core Waste Management training
  Retraining: Core Waste Management Refresher

- Building Emergency Director Training
  Retraining: Building Emergency Director refresher

- Environmental Regulations at Hanford
  Retraining: Environmental Regulations and Compliance Refresher

- Environmental Compliance at Hanford
  Retraining: Environmental Regulations and Compliance Refresher

- Unit/building specific training (see Section 8A2.2.2.5).

Visitors and subcontractors will not require training under the Waste Management Advanced program as their duties and responsibilities will not involve this program area.

8A-2.2.2.4 Waste Management Administration. Waste Management Administration t aining is targeted for General Shippers and personnel who must resolve problems and issues related to waste management. This program area covers administrative aspects of waste minimization, waste management, and recordkeeping. Courses in this program area include the following:

- Hazardous Waste Shipment Certification
  Refresher: same
- Waste Management Administrative
  Retaining: Waste Management Refresher
- Waste Designation Support
  Retraining: same
- Facility Waste Sampling and Analysis
  Retraining: N/A, one-time course.

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8A-2.2.2.5 Unit/Job Specific Training. To ensure that Hanford Facility personnel receive appropriate training in SWDD unit operations, SWDD operators and operations managers/supervisors complete specific courses in preparation for work assignments. Certifications for job-specific work assignments have been developed in accordance with DOE Order 5480.20. The training at this level is designed to provide additional information to ensure the safe and efficient operation and maintenance of SWDD unit processes and operations. Additionally, the training provides more detailed information for the response to emergencies and offnormal events that could occur within the SWDD unit.

A certification program is available for each of the SWDD units. Each certification is developed around dangerous and mixed waste operations and, therefore, all SWDD unit certification packages are included within the RCRA portion of this training plan. Whenever an SWDD operator rotates from one unit to another within SWDD, a different certification package will be completed before personnel are allowed to work unescorted within the SWDD unit.

Certification is required for personnel working in selected job positions (operations managers/supervisors and nuclear operators). To become certified, personnel must successfully complete classroom training, self-study, and on-the-job training as applicable. Classroom instruction and/or self-study is designed to provide personnel with the knowledge required to work safely at SWDD units.

The on-the-job training requires affected SWDD employees to gain experience with the operating procedures. All work involving hazardous materials and dangerous waste management is performed according to approved operating procedures; therefore, an understanding of procedures is crucial to ensure the proper and safe operation of the SWDD units' critical system(s). Personnel learn the procedures by performing, simulating, and/or describing a particular task as specified by the appropriate operating procedure. Personnel demonstrating the required knowledge and skills are observed by certified personnel. An operational examination administered by an independent evaluator is required following satisfactory completion of the written examination and observation by certified personnel. Certification

follows satisfactory completion of the operational examination. Courses identified under this program area include the following:

- 616 Nonradioactive Dangerous Waste Storage Facility Operator Certification program
  Retraining: same
- 224-T Transuranic Storage and Assay Facility Operator Certification program
  Retraining: same
- Central Waste Complex Operator Certification program
  Retraining: same
- Low-Level Burial Grounds Operator Certification program
  1. Low-Level Burial Grounds
  2. TRU Retrieval
  3. Environmental Restoration Disposal Facility: TBD
     Retraining: same (for all three)
- Waste Receiving and Processing Facility Operator Certification program: TBD
  Retraining: same
- Manager/Supervisor Certification program
  Retraining: same.

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8A-2.2.3 Emergency Response Training

Federal and state regulations require that personnel be able to respond effectively to emergencies. In accordance with WAC 173-303-330(1)(d), personnel are trained on emergency equipment, systems, and procedures. SWDD units involve the management of waste within containers in storage units and waste in disposal units. Treatment of mixed waste is planned for WRAP. Table 8A-3 indicates those items within WAC 173-303-330(1)(d) that are applicable to SWDD unit operations.

Table 8A-3. Applicability of WAC 173-303-330(1)(d) to SWDD Units.

WAC 173-303-330(1)(d) Criteria	Applicability to SWDD Units
Procedures for using, inspecting, repairing, and replacing SWDD unit emergency and monitoring equipment	Y
Key parameters for automatic waste feed cut-off systems	Y[1]
Communications or alarm systems	Y
Response to fires or explosions	Y
Response to groundwater contamination incidents	Y[2]
Shutdown of operations	Y[1]

[1]Applicable only to WRAP.
[2]Applicable only to LLBG and ERDF.

Specific topics required by federal and state dangerous waste regulations are included in many courses taught at the Hanford Facility. The courses cover many different program areas. For example, some courses address the orientation program area required of all Hanford Facility personnel. At the other end of the spectrum, some of these courses concern responsibilities of the Emergency Coordinator as defined in WAC 173-303-360. All of the following courses are described in Appendix 8C:

- NHO
- HGET
- Building Emergency Plan
- SWDD operator certification training for each SWDD unit
- Solid waste manager/supervisor certification training
- Building Emergency Director training.

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8A-2.3 TRAINING TABLES AND ATTACHMENTS

After categorizing Hanford Facility personnel, visitors, and subcontractors into the worker categories, duties and responsibilities are evaluated. The duties and responsibilities will determine appropriate courses from the five training program areas. Table 8A-4 shows the interaction between worker categories and program areas. Table 8A-5 includes the additional unit/job specific training required for the operator/supervisor certification packages.

Appendix 8C contains a brief description of the training courses for the SWDD RCRA training program, including course title and number, brief course description, mandating document(s) (as applicable), target audience, instructional delivery, evaluation method, length of course, and frequency of retraining.

Appendix 8D provides tables for Hanford Facility personnel who are categorized as Advanced General Workers, General Managers, and General Shippers. These tables identify the required RCRA courses for these Hanford Facility personnel by personnel name. Example tables are provided to eliminate the need to modify Appendix 8D every time a name is changed at the SWDD units. Appendix 8D is used to illustrate the type of training table that will be available upon request to an inspector on a regulatory compliance inspection. The inspector should expect to see a table similar to those in Appendix 8D when making inquiries regarding the proper training of these types of personnel.

Text discussing Waste Management Orientation and Waste Management Awareness in Section 8A2.2.2 will be used to determine if visitors and subcontractors have received the correct training. Table 8A-4 will be used to determine the training status of Hanford Facility personnel who are categorized as All Employees or General Workers.

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Table 8A-4. SWDD Dangerous Waste Training Matrix.

Program Area	Course Title	Freq	Worker Category				
			All Employees	General Worker	Advanced General Worker	General Manager	General Shipper
Waste Management Orientation	NHO 02006A: Refresher 000001	(1)	X[1]	X[1]	X	X	X
Unit/Bldg Orientation	SWDD Unit Orientation: Refresher 000001	(1)	X[1,2]	X[1,2]	X	X	X
Waste Management Awareness	Generator Hazards Safety Training 02006G (refer to course description)	(1)		X[1]	X	X	X
Unit/Bldg Awareness	SWDD Unit Specific Building Emergency Plan (refer to course description)	(1)		X[1,2]	X	X	X
Waste Management Advanced	Core Waste Management Training 035100: Refresher 035110	(1)			X[3]	X[4]	
	Building Emergency Director Training 02028B: Refresher 037510	(1)				X[5]	
	Environmental Compliance at Hanford - 035050 or Environmental Regulations at Hanford - 035040: Refresher 035055	(1)				X[6]	
Waste Management Administration	Hazardous Waste Shipment Certification 020159	(2)					X
	Waste Management Administration 035120: Refresher 035130	(1)					X
	Waste Designation Support 035010	(1)					X
	Facility Waste Sampling and Analysis 035020	One time					X
Unit/Job Specific	Certifications or Other Training	(1) or (2)			X[7]	X[7]	

(1) Annually
(2) Repeated every 2 years
[1] Equivalent training exists for visitors and subcontractors.
[2] Training requirement waived when escorted by qualified SWDD personnel.
[3] Required only for Advanced General Workers managing waste in containers.
[4] Required only for Advanced General Worker Managers.
[5] Required only for Emergency Coordinator and Alternates.
[6] ECO, Engineers, and Level 4, 5, and 6 Managers take 035050.
[7] Refer to Table 8A-5.

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Table 8A-5. SWDD Units Dangerous Waste Unit/Job Specific Training Requirements for Advanced General Workers (SWDD Operators) and General Managers.

SWDD Units	616 NRDWSF	CWC	224-T TRUSAF	WRAP	LLBG			General Managers All SWDD Units
	300050 (B)	300020 (B)	300030 (B)	(TBD)	LLBG 300040 (B)	ERDF (tbd)	TRU Retrieval 300010 (B)	300590 (B)
616 NRDWSF	X/C	X/C	X/C					X/C
CWC		X/C	X/C		X/C			X/C
224-T TRUSAF	X/C		X/C				X/C	X/C
LLBG		X/C			X/C		X/C	X/C
WRAP								

NOTE: For actual list of courses by personnel name, contact SWDD training organizations. Refer to Appendix 8D for an example of those lists.
(B) = Retraining every other year
C = Continuing
X = Initial
TBD = To be developed

8A-2.4 LIST OF COURSES AND COURSE NAMES

Table 8A-6 contains a listing of courses by number and title.

Table 8A-6. Course Listing.

Course Numbers	Course Titles
000001	Hanford General Employee Training
000090	Visitor/Vendor Orientation
02006A	New Hire Orientation
02006G	Generator Hazards Safety Training
020159	Hazardous Waste Shipment Certification
020288	Building Emergency Director Training
03E044	Building Emergency Plan Training - LLBG
03E045	Building Emergency Plan Training - 616
03E046	Building Emergency Plan Training - TRUSAF
03E047	Building Emergency Plan Training - CWC
TBD	Building Emergency Plan Training - WRAP
TBD	Building Emergency Plan Training - ERDF
035010	Waste Designation Support
035020	Facility Waste Sampling and Analysis
035040	Environmental Regulations at Hanford
035050	Environmental Compliance at Hanford
035055	Environmental Regulations and Compliance Refresher
035100	Core Waste Management Training - Initial
035110	Core Waste Management Training - Requalification
035120	Waste Management Administrative - Initial
035130	Waste Management Administrative - Requalification
037510	Building Emergency Director/Warden Requalification
300010	TRU Retrieval - Operator Certification
300020	CWC - Operator Certification
300030	224-T TRUSAF - Operator Certification
300040	LLBG - Operator Certification
300050	616 NRDWSF- Operator Certification
TBD	WRAP - Operator Certification
TBD	ERDF - Operator Certification
300590	SWDD Supervisor/Manager Certification
300700	SWDD Unit Orientation Refresher (refer to HGET)
300705	616 NRDWSF Building Orientation
300710	LLBG Orientation
300715	224-T TRUSAF Orientation
300720	CWC Orientation
300725	TRU Retrieval Orientation
TBD	ERDF Orientation
TBD	WRAP Orientation

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8A-3.0 REFERENCES

DOE Order 5480.20, *Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities*, U.S. Department of Energy, Washington, D.C.

DOE-RL, 1993, *Hanford Facility Contingency Plan*, DOE/RL-93-75, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, EPA, and DOE, 1994, *Hanford Federal Facility Agreement and Consent Order*, Fourth Amendment, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq.

WAC 173-303, 1990, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

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APPENDIX 8B

NON-RCRA TRAINING

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APPENDIX 8B

NON-RCRA TRAINING

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8B-1.0 ACCESS TO SWDD UNITS

This appendix describes the non-RCRA training programs that are closely related to the RCRA programs that are implemented at SWDD waste management units. Terms used in this appendix include Hanford Facility personnel, visitors, and subcontractors. Hanford Facility personnel include employees of DOE-RL, and employees of the Hanford Facility major contractors (i.e., Westinghouse Hanford Company, Pacific Northwest Laboratories, Bechtel Hanford Company). Visitors include personnel who do not have a contract in place with DOE-RL or the Hanford Facility major contractors, and regulatory agency personnel who conduct regulatory compliance inspections. Subcontractors refer to any contractor working for DOE-RL or the major Hanford Facility contractors. These definitions could differ from other definitions used on the Hanford Facility to describe training requirements.

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8B-1.1 HANFORD FACILITY ACCESS

Access to the Hanford Facility is controlled through the issuance of badges. The type of badge that is issued will depend on the access frequency of the visitor or subcontractor. In most cases, visitors such as regulatory agency inspectors are issued permanent badges. There are instances where the regulatory agency inspector visit frequency is low and a temporary badge is issued instead of a permanent badge. In either case, to have a badge issued, the visitor or subcontractor must prove U.S. citizenship, provide identification, and view the visitor/vendor video (course number 000090) described in Appendix 8A. Subcontractors may require escorting (vendor) until security background checks have been completed. When the subcontractor vendor status is removed, the subcontractor will complete New Hire Orientation (NHO) (course number 02006A) and has the potential to work unescorted without Solid Waste Disposal Division (SWDD) unit personnel present.

In cases where the visitor is a foreign national, the individual must be processed through the Foreign Visitor and Assignment Program before they are allowed access to the Hanford Facility. When a foreign national requests access to the Hanford Facility, the extent of documentation will depend on the duration of the stay and whether either the visitor or the facility being visited is classified as "sensitive." Approvals typically take anywhere from 3 to 8 weeks from start to finish. The name of the guest, country of origin, date(s) of visit, and facility(ies) to be visited must be supplied. All personnel escorting the foreign national must be trained in escort training for foreign nationals (course number 000094).

8B-1.2 SWDD UNIT/BUILDING ACCESS

Unit/building access is evaluated on whether the visitor or subcontractor must be escorted (this does not include foreign national considerations). If the visitor or subcontractor is escorted by qualified Hanford Facility personnel assigned to the building or SWDD unit, unit/building orientation is not required unless the visitor or subcontractor will be working and not touring under a Radiation Work Permit (RWP). For example, when a regulatory

inspector wants to sample a container during part of an inspection, the inspector must complete the appropriate SWDD unit/building orientation training if the sampling will be conducted under an RWP. This orientation fulfills radiological safety training considerations specific to the hazards present at the SWDD unit. Hanford Facility personnel being escorted by qualified SWDD unit personnel also fall under the same orientation considerations as do the visitors and subcontractors. Although included in Appendix 8A as part of the RCRA training program, the SWDD unit orientation courses are reiterated and include the following:

- 300700 SWDD unit Orientation refresher (refer to HGET)
- 300705 616 NRDWSF Building Orientation
- 300710 LLBG Orientation
- 300715 224-T TRUSAF Orientation
- 300720 CWC Orientation
- 300725 TRU Retrieval Orientation
- TBD LRDF Orientation
- TBD WRAP Orientation.

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8B-1.3 RADIOLOGICAL AREA ACCESS

In addition to the requirements for building access, there are also specific requirements pertaining to Radiological Area access. For entry into Radiological Areas, visitors (e.g., regulatory agency inspectors) are allowed access when accompanied by a qualified escort (Hanford Facility personnel assigned to the unit/building). There are limitations, however, on the amount of exposure that visitors may receive, which may impact access over time. Health physics organizations can help ascertain these types of limits.

To enter a radiological area, dosimeters must be acquired. Appropriate dosimeters will be issued to visitors and subcontractors either on a temporary or permanent basis. Regulatory agency inspectors assigned permanent dosimetry are not required to complete a Radiological Area Visitor Form (BC-3000-002) for each visit if a Personnel Radiation Exposure History Form has been completed. Those regulatory agency personnel with permanent dosimetry should possess a valid Qualification Card and should present it at the time of entry to eliminate the need to complete the Radiation Area Visitor Form. Temporary dosimetry is also issued (depending on visit frequency) to visitors and subcontractors and is returned with the temporary badge after the visit. Visitors and subcontractors that are issued temporary dosimetry need to complete the Radiological Area Visitor Form upon each visit to a Radiological Area. The form may be completed at the unit/building which will be accessed, but should be completed at the time the visitor or subcontractor is badged. Visitors and subcontractors who anticipate wearing a respirator, handling radioactive materials, contaminated or potentially contaminated materials, or contaminated equipment shall comply with access qualifications met by Hanford Facility personnel as stipulated by an RWP. In addition, some unit/buildings may require an exit contamination survey.

Whole body counts are only required by the specific RWPs that are written for a specific Radiological Area or for specific radiological work. Radiological Areas and the respective RWPs for those areas must be identified before the visitors or subcontractors visit the site so whole body counts can

be completed. Whole body counts can be required for both entry and exit considerations to establish a baseline and to determine any intake of radioactive materials.

There are three types of Radiological Areas that require additional training for visitors and subcontractors: Very High Radiation Areas, High Contamination Areas, and Airborne Areas. For these areas, additional qualifications include those of Hanford Facility radiological workers. These courses/items include the following:

- SWDD unit/building orientation (see Section 8B1.2)
- Radiological Worker II Training - Initial (course number 020001)
- Bioassay testing (if applicable)
- Criticality training (if applicable)
- Mask fit user test (pulmonary capacity).

Finally, all Hanford Facility personnel, visitors, and subcontractors are required to read the applicable RWP upon initial entry. Personnel must sign that they have read and understood the RWP and agree to comply with the requirements.

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8B-2.0 OCCUPATIONAL SAFETY AND HEALTH TRAINING

Occupational Safety and Health Administration (OSHA) training on the Hanford Facility is described in three terms: Hazard Communication (HAZCOM), Hazardous Waste Operations Training (24/40 hour training), other health and safety training. HAZCOM training and Hazardous Waste Operations training are discussed in Sections 8B2.1 and 8B2.2. Other health and safety training can include, but is not limited to, confined space entry, noise conservation, fork lift training, and lock and tag. Hanford Facility health and safety organizations can provide additional clarity on all of these training areas. Regulatory agency inspectors will not be held to any requirements discussed in this section. It is the responsibility of each regulatory agency to provide the necessary training to their personnel in these areas before the inspectors visit the Hanford Facility.

8B-2.1 HAZARD COMMUNICATION

HAZCOM training consists of general training and unit/building specific training as required by 29 CFR 1910.1200. All Hanford Facility personnel receive general HAZCOM training through NHO (course number 02006A). Only Hanford Facility personnel who handle or manage hazardous materials or dangerous wastes (except consumer commodities) must receive unit/building specific HAZCOM training. To administer unit/building specific HAZCOM programs, the Hazard Evaluation Workshop (course number 035030) is provided to managers and personnel who are responsible for developing the unit/building specific program.

8B-2.2 HAZARDOUS WASTE OPERATIONS TRAINING

Hazardous Waste Operations training, among other things, is required for personnel entering a hazardous waste site or a treatment, storage, and disposal (TSD) unit in accordance with 29 CFR 1910.120. Training requirements for hazardous waste sites involve 40 hours of training (classroom and field experience) whereas training requirements for TSD units involve 24 hours of training (classroom only). Entry requirements for all SWDD units require that Hanford Facility personnel receive 24-hour training under this standard. The 24-hour training is applicable to personnel who have a "reasonable possibility of employee exposure to health or safety hazards" at the TSD unit. Some areas of a TSD unit do not have this possibility (e.g., the administrative offices at the 616 Nonradioactive Dangerous Waste Storage Facility [NRDWSF]).

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The only RCRA training consideration applied to 24 hour OSHA training involves the 8-hour refresher course (course number 032020 or 032030). The 8 hour refresher course is taken by personnel who maintain either a 24 or 40-hour qualification. When Hanford Facility personnel attend the 8-hour refresher, credit is given for refresher training in the Waste Management Awareness program area, Generator Hazards Safety Training (course number 02006G). The Waste Management Awareness program area is discussed in Appendix 8A.

8B-3.0 U.S. DEPARTMENT OF TRANSPORTATION TRAINING

U.S. Department of Transportation (DOT) training is conducted onsite for Hanford Facility personnel who are involved with transportation, or who offer materials and wastes for transportation. At this time, there are four courses being offered through the transportation organizations on the Hanford Facility:

- 020064 Basic DOT Hazardous Materials Regulation
- 020159 DOT Hazardous Waste Shipment Certification
- 020059 Basic Radioactive Materials Shipment Awareness
- 020069 Radioactive Materials Shipment Certification.

Basic DOT Hazardous Materials Regulation is designed to meet the training needs of "HAZMAT Employees." The Hazardous Waste Shipment Certification course is only included in the RCRA portion of this training plan (Appendix 8A) when the General Shipper will be shipping an offsite shipment as defined in WAC 173-303. Otherwise, this course will not be enforceable under the Hanford Facility RCRA Permit when issued. The transportation organizations on the Hanford Facility can provide additional information concerning these courses.

8B-4.0 OTHER ENVIRONMENTAL TRAINING

In addition to RCRA training, other environmental training requirements exist. For example, *Toxic Substances Control Act* (TSCA) training exists on the Hanford Facility for polychlorinated biphenyl (PCB) spill response. Training also exists for compliance with reporting under the *Emergency Planning and Community Right-to-Know Act*. There also are asbestos training requirements for workers and supervisors involved in asbestos abatement. In all of these cases, this is non-RCRA training. The environmental training and regulatory support organizations can assist Hanford Facility personnel in determining training needs in these areas.

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8B-5.0 REFERENCES

Emergency Planning and Community Right-to-Know Act of 1986, 42 USC 11001, et seq.

Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq.

Toxic Substances Control Act, 1976, 15 USC 2601 et seq.

WAC 173-303, 1990, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response, *Code of Federal Regulations*, as amended.

29 CFR 1910.1200, "Hazard Communication," *Code of Federal Regulations*, as amended.

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APPENDIX 8C

TRAINING COURSE DESCRIPTIONS

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APPENDIX 8C

TRAINING COURSE DESCRIPTIONS

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8C-1.0 HANFORD FACILITY DANGEROUS WASTE TRAINING COURSES

Title	000001 Hanford General Employee Training
Description	Course covers U.S. Department of Energy (DOE) orders and applicable policies pertaining to employer and employee rights and responsibilities, general radiation training, hazard communications, dangerous waste, fire prevention, personal protective equipment, safety requirements, certain unit/building orientation refresher training, emergency preparedness, accident reporting, and avenues for addressing safety concerns.
Mandating Document(s)	Hanford Facility RCRA Permit (when issued), General Conditions
Target Audience	All Hanford Facility personnel
Delivery	Computer-based training with interactive video
Evaluation	Computer-generated questions
Length	Average = 2 to 6 hours
Frequency	Annual

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Title	000090 Visitor/Vendor Orientation
Description	Course is designed to acquaint and familiarize visitors and subcontractors with safety, security, and emergency preparedness requirements and their responsibilities to notify Hanford Facility personnel when situations arise. In addition, this orientation identifies the need to obey signs and labels that may be encountered regarding radiological areas, hazardous materials, and dangerous wastes.
Mandating Document(s)	Hanford Facility RCRA Permit (when issued), General Conditions
Target Audience	Visitors/vendors/subcontractors
Delivery	Video tape
Evaluation	Not applicable
Length	15 minutes
Frequency	Annual

Title	02006A New Hire Orientation
Description	Course covers DOE orders and applicable policies pertaining to employer and employee rights and responsibilities, general radiation training, hazardous waste, fire prevention, personal protective equipment, safety requirements, accident reporting, and avenues for addressing safety concerns.
Mandating Document(s)	Hanford Facility RCRA Permit (when issued), General Conditions
Target Audience	All Hanford Facility personnel
Delivery	Classroom
Evaluation	Not applicable
Length	3 hours
Frequency	Initial (Retrained annually by 000001 HGET)

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Title	02006G Generator Hazards Safety Training
Description	Course introduces workers to federal laws governing chemical safety in the work place. The course provides the hazardous material/waste worker with the basic fundamentals for safe use and disposal of hazardous material. Course defines hazard communication and hazardous material, reviews labeling requirements, and introduces material safety data sheets and key terms used in chemical safety. The course also introduces methods for waste minimization.
Mandating Document(s)	WAC 173-303-200(2)
Target Audience	Hanford Facility personnel categorized as a General Worker, Advanced General Worker, General Manager, and General Shipper
Delivery	Classroom
Evaluation	Written examination - 80% passing grade
Length	4 hours
Frequency	Annual: Solid Waste Disposal Division (SWDD) personnel receive refresher training through 24-hour Occupational Safety and Health Administration (OSHA) 8-hour refresher.

Title	020159 DOT Hazardous Waste Shipment Certification
Description	Course introduces General Shippers to identify shippers' responsibilities and liabilities with regard to compliance to WAC 173-303 and U.S. Department of Transportation (DOT) regulations, including storage, inspection, and loading requirements.
Mandating Document(s)	WAC 173-303-180, -190, and -370
Target audience	General Shippers
Delivery	Classroom
Evaluation	Written examination - 80% passing grade
Length	4 hours
Frequency	Every other year

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Title	02028B Building Emergency Director Training
Description	Course provides an overview of the responsibilities of the building emergency director, identifies the building emergency organizations, actions required during an event, implementing the contingency plan, and discusses drill and exercise requirements.
Mandating Document(s)	WAC 173-303-340, -350, and -360
Target audience	Building Emergency Directors and their alternates who can function as the Emergency Coordinator
Delivery	Classroom
Evaluation	Not applicable
Length	2 hours
Frequency	Initial (Retrained annually by 037510 Building Emergency Director/Warden Requalification)

Title	03E044 Building Emergency Plan Training- LLBG 03E045 Building Emergency Plan Training- 616 NRDWSF 03E046 Building Emergency Plan Training- 224-T TRUSAF 03E047 Building Emergency Plan Training- CWC TBD Building Emergency Plan Training- ERDF TBD Building Emergency Plan Training- WRAP
Description	Course consists of a review of specific hazards associated with the SWDD unit and job assignment, as covered by each SWDD unit's Building Emergency Plan (WHC-IP-0263-XXX). The training is completed by the supervisor, manager, or a designated individual using a checklist. The unit/building specific information is reviewed concerning hazards in the work area and emergency response requirements including, where applicable, waste feed cut-off, communication and alarm systems, and response to fires. The checklist acts as a guide to ensure consistent coverage of necessary topics.
Mandating Document(s)	WAC 173-303-330(1)(d), -340, and -350
Target Audience	All Hanford Facility personnel categorized as Advanced General Workers, General Managers, and General Shippers assigned to SWDD units. All General Workers may take this course, or equivalent training may be given during the pre-job safety meeting or the SWDD unit/building specific orientation course.
Delivery	One-on-one or as a group with supervisor, manager or designated individual
Evaluation	Training checklist documentation
Length	1 hour
Frequency	Annual

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Title	035010 Waste Designation Support
Description	Course teaches dangerous waste designation according to WAC 173-303. Class content includes section-by-section lecture on the regulations, with examples following each section. Students complete examples using a waste designation flow chart. Examples addressed include federally listed waste, discarded chemical products, dangerous waste source, Washington State criteria (e.g., toxicity, persistence, carcinogenic), and federal characteristics (e.g., ignitability, corrosivity, reactivity, and toxicity).
Mandating Document(s)	WAC 173-303-070, and -080 through -100
Target Audience	General Shippers
Delivery	Classroom
Evaluation	Written examination - 80% passing grade
Length	12 hours
Frequency	Annual

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Title	035020 Facility Waste Sampling and Analysis
Description	Course presents waste sampling methodologies according to EPA Protocols SW-846, Test Methods for Evaluating Solid Waste Physical/Chemical Methods. This course also covers documentation requirements in a sampling plan, field and laboratory quality control/assurance, and use of actual sampling equipment. One-time training is required because the General Shipper, in most cases, will utilize resources on the Hanford Facility to acquire samples. This training provides an overview of information to ensure that sampling efforts are properly set up.
Mandating Document(s)	WAC 173-303-110 and -070
Target audience	General Shippers
Delivery	Classroom presentation, exercises, demonstration and discussion
Evaluation	Written Examination
Length	12 hours
Frequency	One time

Title	035040 Environmental Regulations at Hanford
Description	This course provides an overview of environmental regulations as they apply to the Hanford Facility. This course helps enable participants to make informed decisions relating to environmental compliance issues. It includes information on potential legal liabilities, applicable federal and state regulations, various reporting requirements, inspections/audits and record keeping. Information is presented using Hanford Facility examples.
Mandating Document(s)	WAC 173-303-145 and general overview of certain WAC 173 303 sections. Training covers disciplines from *Resource Conservation and Recovery Act of 1976* (RCRA), *National Environmental Policy Act of 1969* (NEPA), air regulations, *Emergency Planning and Community Right-to-Know Act* (EPCRA), *Toxic Substances Control Act* (TSCA), spill reporting, and inspection considerations.
Target Audience	Level I, II, and III Managers
Delivery	Classroom
Evaluation	Written examination - 80% passing grade
Length	8 hours
Frequency	Initial (Retraining 035055)

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Title	035050 Environmental Compliance at Hanford
Description	Provides an overview of environmental regulations and focuses on the use of environmental compliance manuals to address compliance issues. Information is presented through Hanford Facility examples.
Mandating Document(s)	WAC 173-303-145 and general overview of certain WAC 173-303 sections Training covers disciplines from RCRA, NEPA, air regulations, EPCRA, TSCA, spill reporting, and inspection considerations.
Target Audience	Environmental Compliance Officers, engineers categorized as General Managers, and level 4, 5, and 6 managers
Delivery	Classroom
Evaluation	Workbook
Length	8 Hours
Frequency	Initial (Retraining 035055)

Title	035055 Environmental Regulations and Compliance Refresher
Description	This course provides participants with an update of environmental regulation and compliance issues related to work at the Hanford Facility. Emphasis of instruction and information will be based on current Hanford issues. Information reviewed may include potential legal liabilities, applicable federal and state regulations, various reporting requirements, inspections/audits, and recordkeeping. Information is presented using Hanford Facility examples.
Mandating Document(s)	WAC 173-303-145 and general overview of certain WAC 173-303 sections Training covers disciplines from RCRA, NEPA, air and water regulations, EPCRA, TSCA, spill reporting, and inspection considerations related to current Hanford issues.
Target Audience	Managers, Environmental Compliance Officers, engineers categorized as General Managers who have attended either Environmental Regulations at Hanford or Environmental Compliance at Hanford.
Delivery	Classroom or self-study
Evaluation	Workbook
Length	About 4 hours
Frequency	Retrained annually

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Title	035100 Core Waste Management - Initial
Description	Course covers basic requirements of waste management, incorporating 40 CFR 260 through 265, WAC 173-303, DOE orders, and company policy. Includes three practical exercises for hands-on experience with satellite and 90-day accumulation area requirements, labpacks for dangerous waste and mixed waste, and preparation of packages for final destination.
Mandating Document(s)	WAC 173-303-630, -200 and Waste Minimization
Target Audience	Advanced General Workers and General Managers of Advanced General Workers
Delivery	Classroom
Evaluation	Written Examination - 80% passing grade
Length	16 hours
Frequency	Initial (retrained annually by 035110 Core Waste Management Training - Refresher)

Title	035110 Core Waste Management - Refresher
Description	Refreshes Course 035100
Target Audience	Advanced General Workers and General Managers of Advanced General Workers
Delivery	Classroom
Evaluation	Written Examination - 80% passing grade
Length	4 Hours
Frequency	Annual

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Title	035120 Waste Management Administration - Initial
Description	Course is designed for personnel preparing to become authorized shippers of dangerous and/or mixed waste. This course covers regulatory and company policies, forms, reports, forecasts, and plans. Topics also covered include: waste characterization, waste storage disposal request, low-level waste storage/disposal record, transuranic waste storage/disposal record, and radioactive mixed waste attachment sheet. In addition, students will learn how these forms are used to complete shipping papers.
Mandating Document(s)	Hanford Facility RCRA Permit (when issued), Part II, condition II.Q
Target Audience	General Shippers
Delivery	Classroom
Evaluation	Written examination - 80% passing grade
Length	8 hours
Frequency	Initial (Retrained annually by 035130 Waste Management Administration - Refresher)

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Title	035130 Waste Management Administration - Refresher
Description	Refreshes course 035120
Target Audience	General Shippers
Delivery	Classroom
Evaluation	Written examination - 80% passing grade
Length	4 hours
Frequency	Annual

Title	037510 Building Emergency Director/Warden Requalification
Description	Refresher for Building Emergency Director Training
Target audience	Building Emergency Directors and alternates
Delivery	Classroom
Evaluation	Not applicable
Length	2 hours
Frequency	Annual

8C-2.0 HANFORD FACILITY DANGEROUS WASTE TRAINING COURSES

Title	300010 TRU Waste Retrieval Operator Certification
Description	Operator qualification course that defines the processes and equipment associated with transuranic (TRU) retrieval activities in and around the Low-Level Burial Grounds (LLBG) based on operations as defined in current plant operating procedures and controlled documents. Covers evaluation, inspection, acceptance, movement, and storage/disposal of transuranic solid waste packages.
Mandating Document(s)	DOE Order 5480.20, WAC 173-303-400, and -170
Target Audience	Nuclear Operators
Delivery	Classroom, self-study, on-the-job training (OJT)
Evaluation	Operational examination - 70% of job performance measures (JPM) must receive satisfactory grade.
Length	Approximately 24 hours
Frequency	Every 2 years (OJT excluded in refresher)

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Title	300020 Central Waste Complex Operator Certification
Description	Operator qualification course that defines the processes and equipment associated with the Central Waste Complex (CWC) based on operations as defined in current plant operating procedures and controlled documents. Covers receipt, inspection, acceptance, movement, and storage of radioactive mixed waste packages.
Mandating Document(s)	DOE Order 5480.20, WAC 173-303-400, 40 CFR 265, Subpart I
Target Audience	Nuclear Operators
Delivery	Classroom, self-study, OJT
Evaluation	Operational examination - 70% of JPM must receive satisfactory grade.
Length	Approximately 24 hours
Frequency	Every 2 years (OJT excluded in refresher)

Title	300030 224-T TRUSAF Operator Certification
Description	Operator qualification course that defines the processes and equipment associated with the 224-T Transuranic Waste Storage and Assay Facility (224-T TRUSAF) based on operations as defined in current plant operating procedures and controlled documents. Covers evaluation, inspection, acceptance, assay, movement, and storage of transuranic waste packages.
Mandating Document(s)	DOE Order 5480.20, WAC 173-303-400, 40 CFR 265, Subpart I
Target Audience	Nuclear Operators
Delivery	Classroom, self-study, OJT
Evaluation	Operational examination - 70% of JPM must receive satisfactory grade.
Length	Approximately 24 hours
Frequency	Every 2 years (OJT excluded in refresher)

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Title	300040 LLBG Operator Certification
Description	Operator qualification course that defines the processes and equipment associated with the LLBG based on operations as defined in current plant operating procedures and controlled documents. Covers evaluation, inspection, acceptance, movement, and storage/disposal of solid waste packages.
Mandating Document(s)	DOE Order 5480.20, WAC 173-303-400, 40 CFR 265, Subpart N
Target Audience	Nuclear Operators
Delivery	Classroom, self-study, OJT
Evaluation	Operational examination - 70% of JPM must receive satisfactory grade.
Length	Approximately 24 hours
Frequency	Every 2 years (OJT excluded in refresher)

Title	300050 616 NRDWSF Operator Certification
Description	Operator qualification course that defines the processes and equipment associated with the 616 Nonradioactive Dangerous Waste Storage Facility (616 NRDWSF) based on operations as defined in current plant operating procedures and controlled documents. Covers receipt, inspection, acceptance, movement, and storage of nonradioactive dangerous waste packages.
Mandating Document(s)	DOE Order 5480.20, WAC 173-303-600, Hanford Facility RCRA Permit (when issued), Part III
Target Audience	Nuclear Operators
Delivery	Classroom, self-study, OJT
Evaluation	Operational examination - 70% of JPM must receive satisfactory grade.
Length	Approximately 24 hours
Frequency	Every 2 years (OJT excluded in refresher)

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Title	ERDF Operator Certification (TBD) WRAP Operator Certification (TBD)
Description	TBD
Mandating Document(s)	DOE Order 5480.20, WAC 173-303-400 and Corrective Action Management Unit (CAMU) RCRA Corrective Action requirements: WAC 173-303-646 and 40 CFR 264.552
Target Audience	Nuclear Operators
Delivery	Classroom, self-study, OJT
Evaluation	Operational examination - 70% of JPM must receive satisfactory grade.
Length	Approximately 24 hours
Frequency	Every 2 years (OJT excluded in refresher)

Title	300590 SWDD Supervisor/Manager Certification
Description	Course includes the following topics to prepare the Manager in SWDD operations: • Administrative information • Technical information • Hazardous material/dangerous waste requirements • Handling dangerous waste • Safety analysis reports • Operational safety requirements • Radiation work procedures • Occurrence reporting • Jobs conducted in the area of assigned responsibility • Conduct of operations • Processes and services • Equipment.
Mandating Document(s)	DOE Order 5480.20, WAC 173-303-400 or -600 depending on the SWDD unit
Target Audience	Operations supervisors and managers
Delivery	Classroom, self-study, OJT
Evaluation	Written examination - 80% passing grade, oral board
Length	Self-paced
Frequency	Every 2 years

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Title	300705 616 NRDWSF Building Orientation 300710 LLBG Orientation 300715 224-T TRUSAF Orientation 300720 CWC Orientation 300725 TRU Retrieval Orientation TBD ERDF Orientation TBD WRAP Orientation
Description	This course covers SWDD orientation considerations pertaining to the health and safety hazards concerning the hazardous materials and dangerous wastes within the immediate and surrounding work environments. The course can also describe appropriate radiological procedures for access and exit of the SWDD unit.
Mandating Document(s)	Hanford Facility RCRA Permit (when issued), Part II.C, and Hazard Communication
Target Audience	All SWDD unit personnel requiring access to SWDD units. All Hanford Facility personnel, visitors, and subcontractors who will not be escorted by qualified SWDD unit personnel.
Delivery	Classroom presentation
Evaluation	None
Length	30 minutes
Frequency	Annual - Refresher training provided through HGET for all SWDD units (course number 300700)

8C-3.0 REFERENCES

DOE Order 5480.20, *Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities*, U.S. Department of Energy, Washington, D.C.

Emergency Planning and Community Right-to-Know Act of 1986, 42 USC 11001, et seq.

National Environmental Policy Act of 1969, 42 USC 4321 et seq.

Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq.

Toxic Substances Control Act, 1976, 15 USC 2601 et seq.

WAC 173-303, 1990, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

40 CFR 260, "Hazardous Waste Management System-General," *Code of Federal Regulations*, as amended.

40 CFR 261, "Identification and Listing of Hazardous Waste," *Code of Federal Regulations*, as amended.

40 CFR 262, "Standards Applicable to Generators of Hazardous Waste, *Code of Federal Regulations*, as amended.

40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste," *Code of Federal Regulations*, as amended.

40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," *Code of Federal Regulations*, as amended.

40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," *Code of Federal Regulations*, as amended.

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APPENDIX 8D

DANGEROUS WASTE TRAINING REQUIREMENTS LISTED BY EMPLOYEE WORKER CATEGORY AND NAME

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APPENDIX 8D

DANGEROUS WASTE TRAINING REQUIREMENTS LISTED BY EMPLOYEE WORKER CATEGORY AND NAME

NOTE: Appendix 8-D is maintained by the Solid Waste Disposal Division SWDD. These examples are provided to help identify the typical table that can be found for Advanced General Workers, General Mangers, and General Shippers. The actual tables maintained by SWDD will be updated on a quarterly basis.

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8D-1.0 SWDD DANGEROUS WASTE TRAINING REQUIREMENTS FOR ADVANCED GENERAL WORKERS (SWDD OPERATORS) (EXAMPLE)

	Training Courses											
	Waste Management Orientation, Awareness, and Advanced							Unit/Job Specific				
SWDD Operators	02006A or 000001 (A)	02006G (A)[1]	LLBG	616 NRDWSF	224-T TRUSAF	CWC	035100 or 035110 (A)	616 NRDWSF	CWC	224-T TRUSAF	LLBG	
			03E044 and 300710[2] (A)	03E045 and 300705[2] (A)	03E046 and 300715[2] (A)	03E047 and 300720[2] (A)		300050 (B)	300020 (B)	300030 (B)	LLBG 300040 (B)	TRU Retrieval 300010 (B)
Examples												
Anderson, J. Q.	X/C	X	X/C				X/C				X/C	X/C
Brown, B. L.	X/C	X		X/C			X/C	X/C				
Jones, H. A.	X/C	X	X/C		X/C		X/C			X/C	X/C	X/C
SMITH, T. R.	X/C	X				X/C	X/C		X/C			-
WHITE, M. L.	X/C	X	X/C				X/C				X/C	X/C

[1]Continuing training provided through 24-hour OSHA TSD Hazardous Waste Worker Training Refresher.
[2]Continuing training provided through HGET (Course 300700).
(A) = Annually
(B) = Every 2 years
C = Continuing
X = Initial

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8D-2.0 SWDD DANGEROUS WASTE TRAINING REQUIREMENTS FOR GENERAL MANAGERS (EXAMPLE)

Managers by Job Positions	Training Courses: Waste Management Orientation, Awareness, and Advanced										Unit/Job Specific
	02006A or 000001 (A)	02006g (A)[1]	03E044 and 300710[2] (A)	03E045 and 300705[2] (A)	03E046 and 300715[2] (A)	03E047 and 300720[2] (A)	02028B or 037510 (A)	035040 or 035055 (A)	035050 or 035055 (A)	035100 or 035110 (A)	All SWDD 300590 (B)
Examples											
Building Emergency Directors											
Worker, J. Q.	X/C	X	X/C				X/C	X			
Operations Manager											
Olson, J. B.	X/C	X		X/C					X	X/C	X/C
Environmental Compliance Officer											
Brown, B. L.	X/C	X	X/C	X/C	X/C	X/C	X/C		X		

[1]Continuing training provided through 24-hour OSHA TSD Hazardous Waste Worker Training Refresher.
[2]Continuing training provided through HGET (Course 300700).
(A) = Annually
(B) = Every 2 years
C = Continuing
X = Initial

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8D-3.0 SWDD DANGEROUS WASTE TRAINING REQUIREMENTS FOR COGNIZANT, TEST, AND SYSTEMS ENGINEERS (EXAMPLE)

	Training Courses							
	Waste Management Orientation, Awareness, and Advanced							
Cognizant, Test, and Systems Engineers	02006A or 000001 (A)	02006G (A)[1]	03E044 and 300710[2] (A)	03E045 and 300705[2] (A)	03E046 and 300715[2] (A)	03E047 and 300720[2] (A)	035050 or 035055 (A)	035100 or 035110 (A)
Examples								
Anderson, J. Q.	X/C	X	X/C	X\C			X	X/C
Brown, B. L.	X/C	X			X/C		X	X/C
Jones, H. A.	X/C	X				X/C	X	X/C

[1]Continuing training provided through 24-hour OSHA TSD Hazardous Waste Worker Training Refresher.
[2]Continuing training provided through HGET (Course 300700).
(A) = Annually
(B) = Every 2 years
C = Continuing
X = Initial

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8D-4.0 SWDD DANGEROUS WASTE TRAINING REQUIREMENTS FOR GENERAL SHIPPERS (EXAMPLE)

Shippers	Training Courses: Waste Management Orientation, Awareness, Advanced, and Administration									
	000001 or 02006A (A)	02006G (A)[1]	03E044 and 300710[2] (A)	03E045 and 300705[2] (A)	03E046 and 300715[2] (A)	03E047 and 300720[2] (A)	035120 or 035130 (A)	035010 (	035020	020159 (B)
Examples										
Offsite Shipper										
White, M. L.	X/C	X	X/C		X/C	X/C	X/C	X/C	X	X/C
Young, M. R.	X/C	X	X/C		X/C	X/C	X/C	X/C	X	X/C
Zimmer, W. B.	X/C	X		X/C			X/C	X/C	X	X/C

[1]Continuing training provided through 24-hour OSHA TSD Hazardous Waste Worker Training Refresher.
[2]Continuing training provided through HGET (Course 300700).
(A) = Annually
(B) = Every 2 years
C = Continuing
X = Initial

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HANFORD SITE COMMENTS ON THE SECOND DRAFT OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF DANGEROUS WASTE FOR THE HANFORD FACILITY

ATTACHMENT 20

REVISION 2A PAGE CHANGES FOR THE 305-B STORAGE UNIT PERMIT APPLICATION

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3.0 WASTE CHARACTERISTICS [C]

305-B receives a wide variety of dangerous waste and limited quantities of RMW. This variety results from the nature of the activities generating the wastes, namely research and development. The amount of wastes that may be stored in 305-B are indicated by waste code in the Part A permit application. This chapter describes the characteristics of the wastes received at 305-B, and presents the waste analysis plan used to characterize these wastes to ensure proper management.

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

The dangerous waste and RMW stored at 305-B can be categorized as originating from five basic sources:

- Waste from nonspecific sources
- Discarded commercial chemical products
- Waste from research activities using radioactive isotopes
- Waste from chemicals synthesized or created in research laboratories
- Discarded commercial products exhibiting dangerous waste characteristics and/or criteria.
- Oil Wastes
- Waste from Maintenance Activities

Each of these waste categories is discussed below, including waste descriptions, hazard characteristics, and bases for hazard designations. This information includes that which must be known to treat, store, or dispose of the wastes, as required under WAC 173-303-806(4)(a)(ii).

Wastes from Nonspecific Sources. Wastes from nonspecific sources consist of those listed wastes identified in WAC 173-303-9904. The Part A permit application for 305-B identifies the following wastes from this category with their estimated annual management quantities:

- F001 - Spent halogenated degreasing solvents and sludges (2,000 kg/yr)
- F002 - Spent halogenated solvents and still bottoms (2,000 kg/yr)
- F003 - Spent nonhalogenated solvents and still bottoms (5,000 kg/yr)
- F004 - Spent nonhalogenated solvents and still bottoms (1,000 kg/yr)
- F005 - Spent nonhalogenated solvents and still bottoms (5,000 kg/yr)
- F027 - Discarded polychlorinated phenol formulations (200 kg/yr).

These halogenated and nonhalogenated solvents are in the form of spent solvents; no still bottoms are generated. Degreasing solvents (F001), as well as spent halogenated solvents (F002), are used primarily in research although some

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ommercial applications (ist (e.g., printing, duplicating). Spent non-alogenated solvents (FO 004, and F005) also come primarily from research laborator , although a significant amount of methyl ethyl ketone (F005) is generated rough maintenance applications such as the Craft Services paint shop (350 Buil). Manufac uring activities are not performed at Hanford; therefore, ngerous was es from specific sources (WAC 173-303-9904 "K" Wastes) are not ge ated.

Wastes in s category (F Wastes) are generally received at 305-B in 1-gal and 5-gal flammable liquid safety cans ("flash cans"). Methyl ethyl ketone, which is received in 55-gal drums, is an exception.

Wastes in this category are designated on the basis of the generator's knowledge (i.e., information from container labels or material safety data sheets), or by sampling. Sampling is performed if the generating unit does not have information to document the composition and characteristics of the waste. The waste generator is responsible for specifying the characteristics of the waste on the basis of knowledge of the chemical products used (i.e., information supplied by the manufacturer) and the process generating the waste. These listed wastes are all designated as dangerous waste (DW) unless the generator determines through process knowledge (i.e., knowledge of materials used and concentrations used) that wastes F001 or F002 contain greater than 1% halogenated hydrocarbons. Wastes with greater than 1% halogenated hydrocarbons are designated as extremely hazardous waste (EHW). Wastes F001 through F005 are also designated as land disposal restricted (LDR) wastes unde 40 CFR 268.30 (solvent wastes). Waste F027 is designated as an LDR waste under 40 CFR 268.31 (dioxin-containing waste).

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Discarded Chemical Products. Discarded chemical products consist of those products listed in WAC 173-303-081. The Part A permit application for 305-B identifies all of the discarded chemical products listed in WAC 173-303-9903 (P001 through P123 and U001 through U359) and specifies an estimated maximum annual management quantity, based on prior experience, of 200 kg/yr for each of these wastes. Only a few of these wastes are typically generated at any one time. The Part A permit application listed all of these wastes, however, because the wide variety of research activities conducted at Hanford presents the potential to generate any of these wastes.

These wastes (P Wastes and U Wastes) are typically received at 305-B in the manufacturer's original container. Approximately 70% of these wastes are in partially full, opened containers and the remaining 30% are in sealed, unopened containers. These containers typically consist of glass and polyethylene jars or bottles and metal cans having a volume equal to or less than 4 L.

Wastes in this category are designated on the basis of the generator's knowledge. As these wastes are usually in original containers, information on the container label is verified by generator knowledge (i.e., knowledge that material is in its original container) and is used to identify contents. Wastes in "as procured" containers (i.e., original container with intact label) are not sampled. These listed wastes contain those designated as DW as well as those designated as EHW. These wastes are also subject to LDR regulations under 40 CFR 268, including disposal prohibitions and treatment standards.

Wastes from Research Activities Using Radioactive Isotopes. Dangerous wastes from research activities using radioactive isotopes are RMW. These wastes are generated in laboratories performing chemical and physical research, and consist primarily of radiologically contaminated chemicals or lead stacked in sealed 55-gal drums. These wastes are designated on the basis of the generator's knowledge or on the basis of sampling and analysis. The generator's knowledge is used if the generator has kept accurate records of the identities and concentrations of constituents present in the waste. For example, many generating units keep log sheets for accumulation containers in satellite areas to keep a record of waste constituents. If information available from the generator is inadequate for waste designation, the wastes are sampled (as described in Section 3.2) and the results of the analysis are used for designation. These wastes include those designated as dangerous waste mixtures under WAC 173-303-084 and also those designated as characteristic dangerous wastes under WAC 173-303-090. The Part A permit application for 305-B includes all categories of toxic, persistent, and carcinogenic waste mixtures (i.e., both DW and EHW). While not all of these wastes are currently generated or have been generated, the wide variety of research activities conducted at Hanford presents the potential that these wastes could be generated and require subsequent management at 305-B. Similarly, the Part A permit application includes the characteristic dangerous waste categories D001 through D043 (i.e., ignitable, corrosive, reactive, and TCLP toxic due to metals or organics content).

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Flammables (i.e., flash point less than 100° Fahrenheit) will not be stored in the below-grade RMW cell; however, ignitables (D001 due to oxidizer content) will be stored in this cell. Flammable RMW is not stored below grade due to Fire Code restrictions. These wastes are stored above the RMW cell in a flammable storage locker. The flammable RMW locker is equipped with secondary containment to provide greater than 100% secondary containment volume.

The wastes in this category could include those designated as either DW or EHW. These wastes could also be federal LDR wastes regulated under 40 CFR 268 as well as state LDR wastes regulated under WAC 173-303-140 (e.g., leachable inorganic wastes).

Waste from Chemicals Synthesized or Created in Research Laboratories. Wastes from chemicals synthesized or created in research laboratories typically consist of organics in quantities of 100 g or less, received in small containers.

These wastes are designated on the basis of the generator's knowledge or on the basis of sampling and analysis. The generator's knowledge is used if the generating unit has kept accurate records of the identities and concentrations of constituents present in the waste (e.g., log sheets for accumulation containers). If information available from the generating unit is inadequate for waste designation, the wastes are sampled (as described in Section 3.2) and the results of the analysis are used for designation. These wastes include those designated as dangerous waste mixtures under WAC 173-303-084 and also those designated as characteristic dangerous wastes under WAC 173-303-090. The Part A permit application for 305-B includes all categories of toxic, persistent, and carcinogenic waste mixtures (i.e., both DW and EHW). While not all of these wastes are currently generated or have been generated, the wide variety of research activities conducted at Hanford presents the potential that these wastes could be generated and require subsequent management at 305-B.

The wastes in this category could include those designated as either DW or EHW. These wastes could also be federal LDR wastes regulated under 40 CFR 268 as well as state LDR wastes regulated under WAC 173-303-140 (e.g., organic/carbonaceous wastes).

Discarded Commercial Products Exhibiting Dangerous Waste Characteristics and/or Criteria. Many discarded chemical products handled in 305-B are not listed in WAC 173-303-9903 and are still considered dangerous waste since they exhibit at least one dangerous waste characteristic and/or criterion (WAC 173-303-0 and WAC 173-303-084). These wastes are included with those listed in the Part A permit application under waste codes D001 through D043, WT01, WT02, WP01, WP02 and WC02. These wastes are typically received at 305-B in the manufacturer's original container. Approximately 70% of the wastes are in partially full, opened containers; the remaining 30% are in sealed, unopened containers for which no local recycle/reuse options can be identified. These containers typically consist of glass and polyethylene jars or bottles and metal cans having a maximum volume of 4 L.

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Wastes in this category are designated based on the generator's knowledge. As these wastes are usually in their original containers, information on the container label is verified by the generator's knowledge and is used to identify the contents. These wastes contain those designated as DW as well as those designated as EHW. These wastes could also be federal LDR wastes regulated under 40 CFR 268 as well as state LDR wastes regulated under WAC 173-303 (e.g., organic/carbonaceous wastes, leachable inorganic wastes).

Oil Wastes. Oil wastes typically consist of pump oil, PCB's, soil contaminated with oil and other commercially refined products. These wastes are typically received in 5 gallon or larger containers and are designated on the basis of the generator's knowledge or on the basis of sampling and analysis. The generator's knowledge is used if the generating unit has kept accurate records of the identities and concentrations of constituents present in the waste (e.g., log sheets for accumulation containers). If information available from the generating unit is inadequate for waste designation or if the oils were used in machinery or a process where contamination by other wastes is suspected, the wastes are sampled and the results of the analysis are used for designation. These wastes are usually designated as characteristic wastes (including W001) and/or wastes from nonspecific sources (F001 through F005), as listed above, or Toxicity Characteristic (D004-D043) depending on the type of contamination.

Waste from Maintenance Activities. Waste generated during maintenance activities typically consists of crushed fluorescent light tubes, paints, light ballasts and batteries. These wastes are typically received in 5 gallon or larger containers and are designated by Material Safety Data Sheets (MSDS) or analytical data. The generator's knowledge is used if the generating unit has kept accurate records of the identities and concentrations of constituents present in the waste (e.g., log sheets for accumulation containers). If information available from the generating unit or MSDS is inadequate for waste designation or if the oils were used in machinery or a process where contamination by other wastes is suspected, the wastes are sampled and the results of the analysis are used for designation. These wastes are usually designated as characteristic wastes (including W001) and/or wastes from nonspecific sources (F001 through F005), as listed above, or Toxicity Characteristic (D004-D043), depending on the type of contamination.

3.1.1 Containerized Wastes [C-1a]

The container storage areas at 305-B meet the containment system requirements of WAC 173-303-630(7)(c). Testing or documentation that the dangerous wastes stored at 305-B do not contain free liquids is not required.

3.1.2 Waste in Tank Systems [C-1b]

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

3.1.3 Waste in Piles [C-1c]

This section does not apply to the 305-B Storage Unit because wastes are not stored in piles.

3.1.4 Landfilled Wastes [C-1d]

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

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

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

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

This section does not apply to the 305-B Storage Unit because wastes do not undergo land treatment.

3.2 WASTE ANALYSIS PLAN [C-2]

The 305-B Storage Unit Waste Analysis Plan (Appendix 3A) summarizes the waste streams and acceptance processes. It describes the procedures used to obtain the information necessary to manage wastes in accordance with the requirements of WAC 173-303 (Ecology 1994). Described in the waste analysis plan are sampling methods, analytical parameters and rationale, quality control and quality assurance procedures, requirements for incoming waste, storage requirements for ignitable, reactive and incompatible waste, and the waste tracking and recordkeeping procedures.

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CONTENTS (Continued)

FIGURES

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FACILITY CONTINGENCY PLAN AND

BUILDING EMERGENCY PROCEDURE

305-B STORAGE UNIT

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7.0 CONTINGENCY PLAN [G]

The information contained in this chapter is the unit contingency plan, as required under WAC 173-303-806(4)(a)(vii). This chapter is also the Building Emergency Plan (BEP) as required under the DOE-RL Site Emergency Plan (revised 4/90) and PNL procedure PNL-[illegible]-11. It supersedes all previous contingency plans and BEPs. It is to be maintained in the locations shown in Section 7.3 of this plan.

A building emergency plan (BEP) is required under the DOE-RL Emergency Plan for each building on the Hanford Site. This Contingency Plan has been designed to meet the requirements for a BEP as well as the Ecology requirements for a contingency plan for the 305-B unit. The Site Emergency Plan details the membership of the Emergency Action Coordinating Team (EACT) mentioned in Section 7.3 and following sections, and the procedure for notifying and mobilizing the team.

This plan provides for the safety of employees, other contractor personnel, visitors, and members of the general public in the event of an emergency. It also is designed to minimize hazards resulting from fires, explosions, or an other unplanned sudden or non-sudden release of dangerous waste or dangerous waste constituents to air, soil, or water. The provisions of the plan will be carried out immediately whenever there a fire, explosion, or release of dangerous waste or dangerous waste constituents which could threaten human health or the environment.

DOE-RL or PNL shall review and immediately amend, if necessary, this plan whenever:

- Applicable regulations or the facility permit are revised;
- The plan fails in an emergency;
- The facility changes (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or in any way that changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

Amendments to the plan, if necessary following review, will be made in accordance with Section 1.5 of the 305-B Part B permit application.

7.1 GENERAL INFORMATION [G-1]

The 305-B Storage Unit is a dangerous and radioactive mixed waste storage facility located in the 300 Area of the Hanford Site. The unit is owned and operated by DOE-RL and co-operated by PNL. It is used for the collection,

consolidation, and packaging of containerized dangerous and radioactive mixed waste. Typically, 305-B handles various types of small volume wastes from research laboratory activities. A more detailed description of 305-B activities is located in Chapter 2.0.

7.2 EMERGENCY COORDINATORS [G-2]

The overall responsibility for implementation of this Plan lies with the Building Emergency Director (BED) or the designated alternates. The BED has the responsibilities of the Emergency Coordinator as named in WAC 173-303-360. The BED or alternates are on call 24 hours per day and have the authority to commit all necessary resources (both equipment and personnel) to respond to any facility emergency.

Response by an emergency coordinator is usually obtained through the PNL Single Point Contact at (509) 375-2400. The Single Point Contact has been designated as the contact point to mobilize a response to any PNL emergency on the Hanford Site. The Single Point Contact is available at all times and has the responsibility to contact the BED or alternate to begin responses to emergencies under this plan.

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Due to the security requirements at the Hanford Site, DOE-RL does not submit names or phone numbers of personnel acting as emergency contacts as part of permit applications or other public documents. All emergency notifications to the BED, building managers, etc. are made through the PNL Single Point Contact. The names and work phone numbers of the 305-B Emergency Coordinator(s) shall be submitted to Ecology and the Agency and kept at the Single Point contact and with the contingency plan at the 305-B Unit.

7.3 IMPLEMENTATION OF THE CONTINGENCY PLAN [G-3]

The decision by the BED or alternate to implement this Plan depends on whether an incident in progress may threaten human health or the environment. Immediately after being notified of an emergency, the BED or alternate will go to the site and evaluate the situation. Based on evaluation of the event, the BED or alternate will implement this plan to the extent necessary to protect human health or the environment.

Incidents discovered by unit personnel trained in emergency response may be responded to according to the procedures given in this plan prior to the arrival of the BED. However, immediate notification of the BED is still required prior to implementing these procedures.

7.4 EMERGENCY RESPONSE PROCEDURES [G-4]

Emergency response procedures have been established for the 305-B Storage Unit and are described below.

7.4.1 Notification [G-4a]

Discoverer

1. If within the unit, notify unit personnel of discovery of spill or release.

2. Immediately notify the PNL Single Point Contact (375-2400) and provide all known information, including:

   - Name(s) of chemical(s) involved and amount(s) spilled, on fire, or otherwise involved, or threatened by, the incident.
   - Name and callback phone number of person reporting the incident.
   - Location of spill or discharge (pinpoint as closely as possible).
   - Time incident began or was discovered.
   - Where the materials involved are going or may go, such as into secondary containment, under doors, through air ducts, etc.
   - Source and cause, if known, of spill or discharge.
   - Name(s) of anyone contaminated or injured in connection with the incident.
   - Any corrective actions in progress.
   - Anyone else who the caller has contacted.

NOTE: DOE-RL and other (non-PNL) contractor personnel are trained to notify Hanford Emergency number (911 from onsite telephones) rather than the Single Point Contact. Hanford Patrol, who operates the 911 number, then notifies the Single Point Contact.

Single Point Contact

1. The single point contact will notify the BED, or one of his alternates if the BED cannot be immediately reached, to arrange immediate response to the incident.

2. The single point contact will arrange for immediate response from Hanford Fire Department for fire or ambulance services as needed based on the report of the discoverer.

3. The single point contact will notify the Laboratory Safety Department of the spill or release incident.

4. The single point contact will support the BED in providing further notification and coordination of response activities if needed. Potential activities requiring single point contact participation are:

   - Activate the general evacuation alarm for the 300 Area, if the BED determines that evacuation is necessary.
   - Notify the Emergency Management Center (EMC) operated for DOE by WHC if evacuation of the 300 Area or adjacent areas is necessary.
   - Activate the 300 Area Emergency Control Center (ECC), described in the Site Emergency Plan, if needed.

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- Notify the DOE-RL Emergency Action Coordinating Team (EACT) in accordance with the Sitewide Emergency Plan if necessary to evacuate areas lying outside the Hanford Site.
- Any other activities found in the DOE-RL Site Emergency Plan.

Building Emergency Director (BED) (or alternate)

1. Notify the Single Point Contact if an evacuation is needed. EXCEPTION: If only 305-B needs to be evacuated, activate the fire alarm first, then notify the Single Point Contact.

2. Arrange for care of any injured employees, utilizing the Single Point Contact for notification of ambulance services.

3. Notify the Single Point Contact of any need to activate the 300 Area Emergency Control Center (ECC) described in the Sitewide Emergency Plan. Activation of the ECC should be done whenever technical assistance in evaluating a spill is required, when the emergency may affect other neighboring buildings, or when otherwise deemed necessary by the BED. See Section 7.5.5.

4. Provide for off-normal event notification in accordance with DOE Order 5000.3A, PNL-MA-11, and other established site procedures, within 30 minutes of discovery. (Normally this is done through the Single Point Contact.)

5. Provide details on incident to Laboratory Safety as they become available.

Laboratory Safety

1. Provide telephone notification of incident to DOE-RL contact personnel. Sections 12.4.1.5.1 and 12.4.1.6 of the permit application.

DOE-RL

1. Provide notification of releases to the National Response Center and to Ecology in accordance with the sitewide hazardous waste permit, 40 CFR 302.6, and WAC 173-303-145.

7.4.2 Identification of Hazardous/Dangerous Materials [G-4b]

The BED or alternate will immediately identify the character, exact source, amount, and extent of the hazardous material or dangerous wastes involved in the incident to the degree possible. Identification of waste may be made by visual inspection of involved containers, by sampling, by reference to facility inventory records or shipping manifests, or by consulting with unit operations personnel. The 305-B operating record includes information on the characteristics and storage location of all wastes stored in the unit. This information is referenced to container identification numbers and can be used to identify containers involved in the emergency.

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Samples of materials involved in an emergency can be analyzed by PNL, HEHF, or other analytical laboratories as appropriate. Samples of spilled or released material(s) shall be taken in accordance with the WAP found in Appendix 3A.

7.4.3 Hazard Assessment [G-4c]

Once the materials involved in the incident have been identified by the procedure above, it should be possible to determine the extent of the danger posed by the incident. The BED or alternate on scene should assess both direct and indirect hazards posed by the incident. The ECC is available to assist the BED if needed. Possible aid may be in the form of determining the extent of an emergency, identifying the hazards associated with the materials involved in the incident, assisting in response to the incident, or coordinating the mobilization of special equipment or supplies to the incident site.

If assessment of all available information does not yield a positive assessment of the danger posed by the incident, a worst - case condition will be presumed and evacuation procedures will be initiated. The BED (or alternate) present on scene is responsible to inititate any evacuation through the steps shown in Section 7.4.1 above.

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7.4.4 Control Procedures [G-4d]

The initial response to any emergency will be to immediately protect the health and safety of persons in the immediate area. Identification, containment, treatment, and disposal assessment will be the secondary response.

The following is presented to define specific emergency actions for personnel assigned to 305-B for different types of emergencies which could be encountered during normal operations.

7.4.4.1 Area-wide Evacuation. (Signal: Steady siren of 3-5 minutes' duration) In the event of an area-wide evacuation of the 300 Area, 305-B personnel will shut down equipment, secure wastes (especially RMW), and secure classified documents (or carry them with them), if time permits. They will then report to the north parking lot accountability area. The zone warden will account for all facility personnel.

7.4.4.2 Take Cover. (Signal: Wavering siren) In the event a take cover alarm is sounded, 305-B personnel will stay inside the 305-B Storage Unit, close all exterior doors, and turn off all intake ventilation. They will secure all wastes and classified documents. Personnel will then contact WM&EC with their whereabouts and request a call back for status.

7.4.4.3 Response to Minor Spills or Releases. (Signal: None) Unit personnel will generally perform immediate cleanup of minor spills or releases using unit equipment, sorbents and emergency equipment noted in Section 7.5. For spills or releases occurring within individual storage cells during routine handling and storage, see Section 4.1.1.8.

A spill or release of hazardous material or dangerous waste is considered "minor" if all of the following are true:

- The spill is minor in size (generally less than five gallons of liquid or 50 lb. of solids);
- The composition of the material or waste is known or can be immediately determined from label, manifest, MSDS, or disposal request information;
- The spill does not threaten the health and safety of building occupants, i.e. an evacuation is not necessary;
- Unit personnel have received appropriate training in accordance with Section 8.1.5; and
- Unit personnel have appropriate protective equipment, respiratory protection, and emergency response equipment to immediately respond and remediate the spill or release.

If one or more of the foregoing conditions are not met, the provisions of Section 7.4.4.4 should be followed.

Notification of the spill shall take place as shown in Section 7.4.1.

7.4.4.4 Major Dangerous Waste and/or RMW Spill or Material Release. (Signal: None) The following actions will be taken in the event of a major release:

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Discoverer

1. If within the unit, notify unit personnel of discovery of spill or release by sounding the fire alarm.

2. Immediately notify the PNL Single Point Contact (375-2400) and provide all known information, including:

   - Name(s) of chemical(s) involved and amount(s) spilled, on fire, or otherwise involved, or threatened by, the incident.
   - Name and callback phone number of person reporting the incident.
   - Location of spill or discharge (pinpoint as closely as possible).
   - Time incident began or was discovered.
   - Where the materials involved are going or may go, such as into secondary containment, under doors, through air ducts, etc.
   - Source and cause, if known, of spill or discharge.
   - Name(s) of anyone contaminated or injured in connection with the incident.
   - Any corrective actions in progress.
   - Anyone else who the caller has contacted.

3. Take action to contain and/or stop the spill if all of the following are true:

   - The identity of the substance(s) involved is known;
   - Appropriate protective equipment and control/cleanup supplies are immediately available;
   - The employee can perform the action(s) contemplated without assistance, or assistance is immediately available from other trained unit employees; and
   - Time is of the essence, i.e. the spill/discharge will get worse if immediate action is not taken.

If any of the above conditions are not met, or there is doubt, the employee should evacuate the area and remain outside the unit and upwind from it pending the arrival of the BED. He/she should remain available for consultation with the BED, Hanford Fire Department, or other emergency response personnel.

Single Point Contact

1. The single point contact will notify the BED, or one of the alternates if the BED cannot be immediately reached, to arrange immediate response to the incident.

2. The single point contact will remain available to the BED to support further notification and response activities if needed. Potential activities requiring single point contact participation are shown in Section 7.4.1 and in the DOE-RL Site Emergency Plan.

Building Emergency Director (BED) (or alternate)

1. Go directly to the unit to coordinate further activity. Take command of the scene from discovering unit employee.

2. Obtain all immediately available information pertaining to the incident. Determine need for assistance from agencies listed in Section 7.6 and arrange for their mobilization and response through the Single Point Contact.

3. If building evacuation is necessary, sound the fire alarm.

4. Arrange for care of any injured employees.

5. If a threat to surrounding facilities exists, activate the 300 Area ECC.

6. Provide for event notification in accordance with Section 7.4.1.

7. Maintain access control at the site by keeping unauthorized personnel and vehicles away from the area. Security personnel may be used to assist in site control if control of the boundary is difficult, e.g. repeated incursions. In determining controlled-access areas, be sure to consider environmental factors such as wind velocity and direction.

8. Arrange for proper remediation of the incident after evaluation in accordance with Sections 7.4.2 and 7.4.3. Remain available to fire, police, and other authorities on scene and provide all required information. If round-the-clock work is anticipated, enlist the assistance of alternate BEDs to provide coverage. Make no comment to media unless authorized to do so. Refer media inquiries to the Media Relations office.

9. If remediation is performed by unit personnel, ensure use of proper protective equipment, proper remedial techniques (including ignition source control for flammable spills), and decontamination procedures by all

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involved personnel. Consult a PNL industrial hygienist for assistance in determining necessary equipment or procedures.

10. If remediation is performed by outside agencies such as the Hanford Hazardous Materials Response Team or other remedial contractors, remain at the site to oversee activities and provide information.

11. Ensure proper containerization, packaging, and labeling of recovered spill materials and overpacked containers.

12. Ensure decontamination (or restocking) and restoration of emergency equipment used in the spill remediation prior to resumption of unit operations in compliance with Section 12.4.1.5.3 of this permit application.

13. Provide reports after the incident in accordance with Section 12.4.1.6.

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7.4.4.5 Response to Fire. (Signal: Gong -- 2 gongs/second) In the event of a fire, the discoverer will pull one of the manual fire alarms and call the Single Point Contact. Automatic initiation of a fire alarm (through the smoke detectors and sprinkler systems) is also possible. The personnel operating the facility are trained in the use of portable fire extinguishers. They will use their best judgment whether to extinguish a fire or evacuate. Under no circumstances will personnel remain in the facility to extinguish a fire if unusual hazards exist.

The following actions will be taken in the event of a fire or explosion:

1. Upon actuation of the fire alarm, personnel will shut down equipment, secure wastes (especially RMW), and lock up classified documents (or carry them with them), ONLY if time permits.

2. The alarm automatically signals both the 300 Area Hanford Fire Department Station and the 300 Area Hanford Patrol Headquarters. Both will respond immediately.

3. Personnel shall leave 305-B by the nearest safe exit and proceed to the designated staging area (south parking lot) for accounting.

4. The Single Point Contact shall be immediately notified, who shall in turn notify the BED (or alternate).

5. The BED will go directly to the scene.

6. The BED will obtain all necessary information pertaining to the incident.

7. The BED will contact the Single Point Contact and advise whether to notify the PNL Occurrence Representative or the PNL Management Representative, depending on the severity of the event. Inform the Single Point Contact as to the extent of the emergency (including estimates of dangerous waste or RMW quantities released to the environment) and any actions necessary to protect nearby facilities.

8. Activation of the 300 Area ECC sets into motion the notification process for DOE, other Hanford contractors, and outside agencies.

9. The Hanford Patrol will set up roadblocks within the area to route traffic away from the emergency scene.

10. Emergency medical technicians will remove injured personnel to a safe location, apply first aid, and prepare for transport to the medical department (DOE/HEHF) or to hospitals. Medical personnel are on standby at the medical facility 24 hours/day.

11. The Hanford Fire Department will extinguish the fire.

12. All emergency equipment will be cleaned and restored for its intended use immediately after completion of cleanup procedures.

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7.4.4.6 Unusual, Irritating, or Strong Odors. (Signal: None) If an unusual, irritating, or strong odor is detected, and the person detecting it has reason to believe that the odor may be the result of an uncontrolled release of a toxic or dangerous material, they shall:

- Immediately activate the building fire alarm system to evacuate the building, and
- Notify the Single Point Contact, the building manager, and cognizant line management.

In the event that the discoverer has knowledge of the source and scope of the release and believes that the release poses no immediate threat to others, the release shall immediately be reported to the building manager and to the discoverer's manager. Measures shall be taken to contain the release and ventilate the area, if safe and advisable to do so.

In the event that an unusual odor is detected within the facility, and the source of the odor is unknown, the BED must consider whether the facility should be evacuated.

7.4.4.7 Criminal Activity. (Signal: None) In the event of sabotage, threatened action, or a bomb or suspicious object is discovered, unit personnel will clear the immediate area. The Single Point Contact will be notified immediately. Facility personnel shall take whatever steps are necessary to assure that suspicious objects are not moved, opened, or otherwise disturbed. If practicable and safe to do so, personnel may place warning signs, barricades, or guards to protect the object pending the arrival of qualified personnel.

7.4.4.8 "Off-Shift" Conditions. (Signal: None) If a staff member is working outside normal facility working hours, and the need to evacuate the facility occurs, the following procedure should be followed:

- Ensure that anyone else in the facility leaves through the nearest safe exit; provide assistance if necessary.
- Follow the facility evacuation procedure (Section 7.4.4.1).

- In case of fire, activate the fire alarm, located at each building exit, and leave the building.

- Stay in a safe place nearby and inform the responding fire personnel of the nature and location of the emergency.

- Notify the Single Point Contact.

7.4.4.9 Power Failure. (Signal: None) In the event of power failure, all containers of waste will be checked for closure and, if the duration of the outage exceeds 30 minutes, will be returned to their storage cells if they have been removed for labpacking or bulking. Facility equipment will be shut down to allow orderly restoration of power.

In a power failure incident, the Building Manager and the BED are to be notified. The Building Manager is responsible to arrange for restoration of power service to the unit. The BED is responsible to evaluate whether the Contingency Plan should be implemented as described in Section 7.3, or whether an evacuation is advisable. If the Contingency Plan is not implemented immediately, site personnel may be required to monitor the unit for continuing release potential during extreme temperature periods. The BED will determine the need for, and extent of, any such monitoring, in consultation with an industrial hygienist if appropriate.

In the event of power loss to site equipment which results in failure of the equipment, the Building Manager is to be contacted to arrange for repair of the affected equipment and/or provide restoration of power. The BED should be contacted in the event that any failure results in a release or potential release to the environment as described in Section 7.3.

7.4.4.10 Damaged, Unacceptable Shipments. (Signal: None) When a damaged shipment of hazardous material or dangerous waste arrives at the unit, the shipment is unacceptable for receipt under the criteria of Section 2.8.3 of this permit application. The damaged shipment should not moved. Unit personnel should instead perform the following steps:

1. If the release from damaged packagings is a "minor spill" under the criteria of Section 7.4.4.3:

   - Immediately notify the Single Point Contact to advise of the situation. The Single Point Contact will notify the BED, who will respond and assist in the evaluation of, and response to, the incident.
   - Notify the generator of the damaged shipment, and obtain any chemical information necessary to assist the response.
   - Unit personnel may proceed with remedial action, including overpacking of damaged containers, cleanup of spilled material, or other necessary actions to contain the spill.

2. If the release does not meet the criteria of a "minor spill" as noted above, or the extent of the spill cannot be immediately determined, the unit contingency plan will be implemented as described in Section 7.3.

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7.4.5 Prevention of Recurrence or Spread of Fires, Explosions, or Releases [G-4e]

The BED is responsible for taking the steps necessary to ensure that a secondary release, fire, or explosion does not occur after the initial incident. Procedures that will be implemented may include:

- Inspection of containment for leaks, cracks, or other damage
- Inspection for toxic vapor generation
- Isolation of residual waste materials and debris
- Reactivation of adjacent operations in affected areas only after cleanup of residual waste materials is achieved.

7.4.6 Storage and Treatment of Released Material [G-4f]

Restart of operations after an emergency is conducted in accordance with established procedures for recovery from off-normal events. Treatment and/or storage and disposal of released material and contaminated debris is part of the recovery process leading to restart. These procedures call for cognizant PNL line management and Laboratory Safety staff to determine the need for a recovery plan. A recovery plan is needed following an event when further risk could be introduced to personnel, a facility, or the environment through recovery action and/or to maximize the preservation of evidence. If a recovery plan is required, it must be approved by PNL line management before restart. Restart of operations must be performed in accordance with the approved plan.

For emergencies not involving activation of the ECC, the BED is responsible for ensuring that conditions are restored to normal before operations are resumed. If the ECC was activated and the emergency phase is complete, a special recovery organization may be appointed at the discretion of the BED to restore conditions to normal. The makeup of this organization will be dependent upon the extent of the damage and its effects. The recovery organization will be appointed by the AED.

Immediately after an emergency, the BED or the recovery organization will make arrangements for the cleanup phase. Procedures for treatment, storage, and/or disposal of released material and contaminated debris are implemented at this time.

Released material and contaminated debris will be managed in the same manner as wastes received from outside the unit (see Section 4.3 for procedures). All waste so generated will be containerized in drums or other appropriate containers and stored in an appropriate storage area pending analysis and determination of final treatment/disposal requirements. WM&EC will be contacted for support and guidance during this phase of operations.

Cleanup actions will be taken by unit operations personnel or other personnel meeting the training requirements of Chapter 8 of the unit Part B permit application. Actions to be taken may include, but are not limited to, any of the following:

- Neutralization of corrosive spills
- Chemical treatment of reactive materials to reduce hazard
- Overpacking or transfer of contents from leaking containers
- Using sorbents to contain and/or absorb leaking liquids for containerization and disposal
- Decontamination of solid surfaces impacted by released material, e.g. intact containers, facility equipment, floors, containment systems, etc.
- Disposal of contaminated porous materials which cannot be decontaminated, and any contaminated soil
- Containerization and sampling of recovered materials for classification and determination of proper disposal technique
- Followup sampling of decontaminated surfaces to determine adequacy of cleanup techniques as appropriate.Wastes from cleanup activities will be analyzed and stored in the same manner as are wastes received from outside the unit, i.e. in the manner prescribed in Chapter 4 of the Part B permit application for 305-B. A field check for compatibility prior to first storage, if necessary, will be performed as described in PNL-MA-833 procedure SWMO-SH-1, "General Safety and Health Practices concerning chemical hazards and Compatibility". Incompatible wastes will not be placed in the same container. Containers of waste will be placed in storage areas appropriate for their compatibility class.

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If it is determined that incompatibility of wastes was a factor in the incident, the BED or the recovery organization will ensure that the cause is corrected. Corrective examples would be modification of an incompatibility chart, or increased scrutiny of wastes from a generating unit (in accordance with Section 3.2 of the Part B permit application) when incorrectly designated wastes caused or contributed to an incident.

7.4.7 Post-Emergency Equipment Maintenance [G-4h]

All equipment used during an incident will be decontaminated (if practicable) or disposed of as spill debris. Decontaminated equipment will be checked for proper operation prior to storage for subsequent use. Consumables and disposed materials will be restocked in the quantities shown in the inventories of Section 7.5. Fire extinguishers will be recharged or replaced.

The BED is responsible to ensure that all equipment is cleaned and fit for its intended use prior to the resumption of operations. Depleted stocks of neutralizing and absorbing materials will be replenished, SCBAs cleaned and refilled, protective clothing cleaned or disposed and restocked, etc. Notification of state and local authorities will be made through DOE-RL of completion of cleanup, decontamination and emergency equipment resupply activities pursuant to WAC 173-303-360(2)(j). Upon notification and approval of PNL line management, normal facility operations may be resumed.

7.4.8 Response to Container Spills or Leaks [G-4i]

In addition to the foregoing contingency plan provisions, the following specific actions may be taken for leaks or spills from containers at the unit:

- Container leaks will be stopped as soon as possible through tightening closures, tipping the container to stop the leak, use of plugging or patching materials, or overpacking. Appropriate protective equipment will be used.

- If it is inadvisable to approach the container, build a containment of sorbent materials and restrict access pending notification of the BED and implementation of the contingency plan.

- Contents of leaking containers may be transferred to appropriate nonleaking containers. Transfer procedures for fire safety will be followed for ignitable or reactive wastes (e.g., use of nonsparking tools, bonding and grounding of containers, isolation of ignition sources, and use of explosion-proof electrical equipment).

- Overpacked containers will be marked and labeled in the same manner as the contents. All containers of spill debris, recovered product, etc. will be managed in the same manner as waste containers received from outside the unit. Overpacks in use at the facility will be marked with information pertaining to their contents, and noting whether the container inside the overpack is leaking or is in good condition.

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7.4.9 Response to Tank Spills or Leaks [G-4j]

This section is not applicable to 305-B because wastes are not stored in tanks.

7.4.10 Surface Impoundment Spills and Leakage [G-4k]

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

7.4.11 Waste Pile Spills and Leakage [G-4l]

This section is not applicable to 305-B because wastes are not stored in waste piles.

7.4.12 Incineration Spills and Leakage [G-4m]

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

7.4.13 Landfill Leakage [G-4n]

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

7.4.14 Land Treatment Facility Spills and Leakage [G-4o]

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

7.5 EMERGENCY EQUIPMENT [G-5]

The emergency equipment available for use during an emergency at the 305-B Storage Unit and at adjacent portions of the Hanford 300 Area are discussed in the following sections. The location of emergency equipment in the 305-B unit is shown in Figure 7-1.

7.5.1 Communication Equipment

The 305-B Storage Unit has an alarm system that is monitored by the Hanford Fire Department. A manual fire alarm pull box is located near each exit door. Unit operations personnel may also use telephones, the building PA system, or portable radios located throughout the unit to summon assistance. Further description of communication equipment is located in Sections 6.3.1.1 and 6.3.1.2 of Chapter 6 of the Part B permit application.

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7.5.2 Fire Control Equipment

The 305-B Storage Unit is constructed of noncombustible materials and equipped with an automatic fire-suppression (sprinkler) system. A portable fire extinguisher is located in each working area in compliance with NFPA safety codes. Each Class ABC extinguisher is capable of suppressing fires involving ordinary combustible materials, flammable liquids, oils, paints, flammable gases, and fires involving electrical equipment. The Class D extinguisher is capable of extinguishing Class D (reactive metals) fires. Each Halon extinguisher is capable of extinguishing Class ABC fires where Halon would be more appropriate, e.g. fires involving large electrical equipment. All extinguishers comply with the National Fire Code standards for portable extinguishers and are inspected monthly by the building manager. The inspections are recorded on tags attached to each extinguisher.

7.5.3 Personal Protective Equipment

The unit has a safety shower and eyewash units at each end of the high bay. Drainage from these units flows into the containment trenches. In addition to these units, a portable eyewash unit is maintained at the protective equipment storage area just outside the high bay, adjacent to the office area. These eyewash/shower units are inspected weekly in accordance with Section 6.2 of the Part B permit application.

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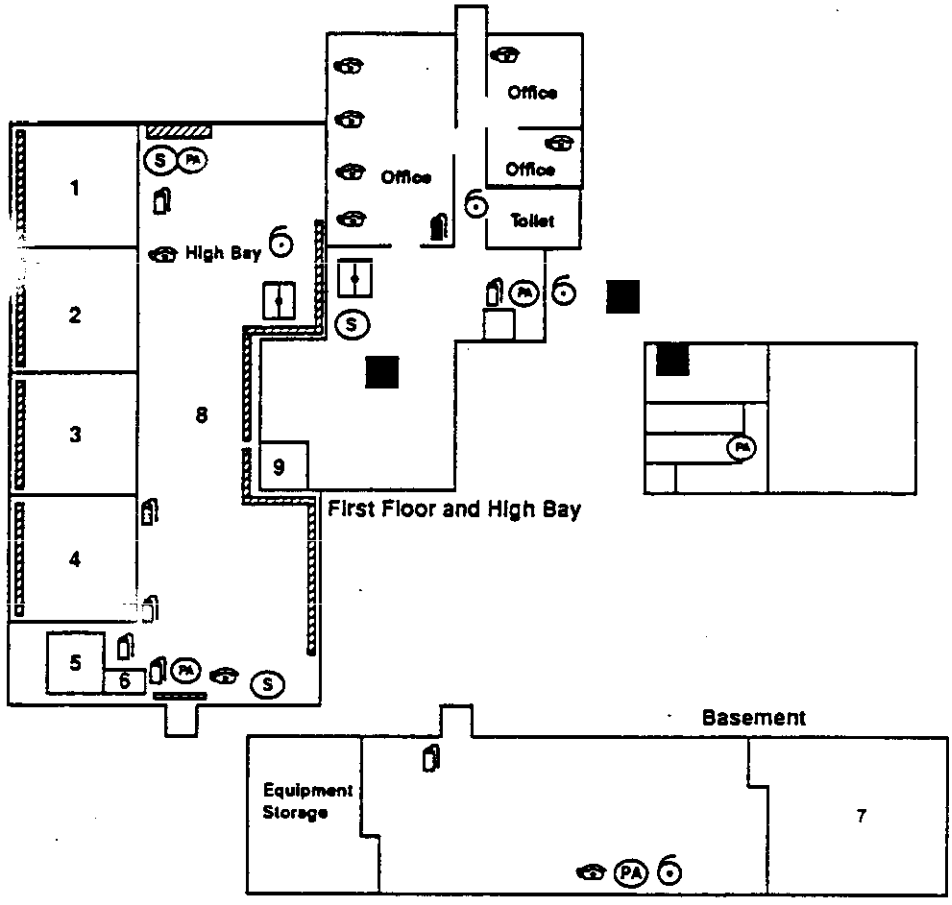

Legend

1. Acids, Oxidizers
2. Poisons, ORM
3. Caustics, Non-regulated, WSDW
4. Hydrocarbons
5. Liquid Bulking Module
6. Asbestos Cabinet
7. RMW Storage Cell
8. High Bay Floor Storage
9. Small Quantity Flammable RMW

- Safety Shower/Eyewash
- Phone
- Fire Alarm Bell
- Fire Alarm Pull Box
- 14 lb Halon Fire Extinguisher
- 10 lb ABC Fire Extinguisher
- 15 lb Class D Fire Extinguisher
- Removable Access to Basement
- Personal Protective Equipment Cabinet
- Collection Sumps

Figure 7-1. 305-B Storage Unit Emergency Equipment Locations.

Protective clothing and respiratory protective equipment are maintained at the facility for use during both routine and emergency operations. This protective equipment includes at a minimum:

- At least 6 sets of chemically resistant suits, aprons, boots and gloves
- 20 protective glasses
- 5 pair chemical goggles
- 4 face shields
- 4 full face respirators
- Respirator cartridges (variety)
- 3 self contained breathing apparatus (30 minute type)

This protective equipment is stored in cabinets located outside of the high bay east entrance. Personnel assigned to 305-B are available to assist other trained personnel (e.g., firefighters) in emergency situations or possible Immediately Dangerous to Life or Health (IDLH) spill cleanup situations.

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7.5.4 Spill Control and Containment Supplies

Supplies of absorbent pillows are located in the high bay operating area near the east entrance. These pillows absorb organic or inorganic materials and have a rated absorption capacity of approximately one liter of waste each. They may be used for barriers to contain liquid spills as well as for absorbent purposes. The work area also has an ample supply of diatomaceous earth for absorption of liquid waste spills. Neutralizing absorbent is available for response to acid or caustic spills. A supply of empty drums (DOT 17E tight head and DOT 17H open head) and salvage drums (overpacks) is maintained in the high bay area along with brooms, shovels, and miscellaneous spill response supplies.

7.5.5 Hanford Site Emergency Equipment

The Hanford Site has fire and patrol personnel trained and equipped to respond in emergency situations. These personnel are employees of the site operating contractor. The Hanford Fire Department's Hazardous Material Response Team is trained for mobilization and control of hazardous material emergencies. The Hanford Fire Department will take control of the incident scene until the incident is under control and personnel rescue is complete. A list of available equipment for hazardous materials responses available through the Hazardous Material Response Team is given in Appendix 6A.

The Hanford Patrol provides support to the Fire Department during an incident, including such activities as activation of area crash alarm telephone systems or area sirens (for evacuation or take cover), access control, traffic control, and emergency notifications.

If an emergency threatens other facilities and/or there is a danger of release of hazardous materials to the environment, the 300 Area ECC will be activated. The ECC will provide any assistance requested by the BED, coordinate protective response actions and notifications, and furnish any necessary technical assistance.

7.6 COORDINATION AGREEMENTS [G-6]

This section refers to a number of coordination agreements "Memorandum of Understanding" and (MOU) established by and through DOE-RL to assure proper response resources availability for incidents involving the 305-B unit.

An MOU among the four major site contractors (WHC, PNL, Kaiser Engineers Hanford, and HEHF) defines the interfaces and notifications required during an emergency. DOE-RL has overall responsibility for emergency preparedness. Per the MOU, WHC has responsibility for Site-wide emergency preparedness while each contractor retains responsibility for emergency preparedness at individual units they co-operate with DOE-RL.

MOUs have been established with a number of offsite authorities to reduce the impact to human health and the environment in the event that an incident has off-site public health implications, or if an on-site emergency warrants off-site assistance. These MOUs are generally activated through the emergency notification of DOE-RL as stated in Section 7.4.1 and in Appendix 7A.

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7.6.1 Local, State, and Federal Authorities

Various MOUs have been established between DOE-RL and Benton, Franklin, and Grant Counties and the states of Washington and Oregon. These MOUs describe the cooperative agreements between these agencies for any on-site emergency that warrants off-site assistance, and they describe the planning for, communication of, and response to emergencies at the Hanford Site that might have off-site consequences.

7.6.2 Hanford Fire Department Mutual Aid

The Hanford Fire Department provides fire department services for the Hanford Site. Mutual aid agreements have been established with Richland, Kennewick, and Pasco fire departments; with Benton County Fire Districts 1, 2, and 4; Franklin County Fire District 3; and Walla Walla Fire District 5 for support. In events where fire and/or toxic smoke threatens more than one facility, the 300 Area ECC is activated.

7.6.3 Medical and First Aid

Professional medical help is provided by DOE-RL onsite through HEHF. Doctors and/or nurses are available for emergency assistance at all times. These medical personnel are trained in procedures to assist personnel contaminated with hazardous and/or radioactive material. Emergency call lists are maintained to provide professional medical consultation at all times. A nurse is on duty in the 300 Area Medical Aid station during normal business hours.

Referral to offsite hospital facilities is made by the HEHF physician providing emergency assistance by phone or in person. The primary hospital utilized in emergencies is Kadlec Hospital, Richland. Kennewick General Hospital, Kennewick, and Our Lady of Lourdes Hospital, Pasco, are backup facilities. MOUs between these hospitals and DOE-RL dated February 24, 1989 are in place and incorporated in the DOE-RL Site Emergency Plan.

7.6.4 Ambulance Service

Ambulance service is provided by the Hanford Fire Department, which uses qualified emergency medical technicians as attendants. This service is available to the 305-B unit from the 300 Area fire station on a 24-hour, 7-day basis. Additional ambulance service is available from other site fire stations and from other local fire departments through the mutual aid agreements noted in Section 7.6.2. An MOU has also been specifically established between DOE-RL and the City of Richland to provide backup ambulance services.

7.6.5 Unified Dose Assessment Center

The Unified Dose Assessment Center (UDAC) is the technical extension of the DOE-RL EACT, providing services to both the EACT and the ECC. The primary mission of the UDAC is to provide recommendations for protective actions, dose calculations and projections, and consultation in the area of industrial hygiene for hazardous materials, biology, environmental monitoring, and meteorology to support the EACT and the ECC.

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Industrial hygiene and biological consultants at the UDAC advise and assist in determining proper response procedures for spills or releases of toxic, flammable, carcinogenic, and pathogenic materials. UDAC staff are responsible to provide a central unified assessment of the dispersion and impact of environmental releases from the Hanford Site. In communication with the ECC, UDAC coordinates the assessment of impacts and assists in determination of actual and potential release scenarios.

7.6.6 Hanford Patrol Mutual Aid

The Hanford Patrol serves as the security and enforcement agency for the Hanford Site. In the event of an emergency, the Hanford Patrol provides services such as activating the crash alarm systems or area sirens, coordinating the movement of emergency responders through security gates, assisting evacuation, establishing barricades, and making necessary notifications through the Single Point Contact. MOUs have also been established with the Tri-Cities police departments to provide additional backup capabilities if required.

7.6.7 River Evacuation

An MOU among DOE-RL, the Washington Public Power Supply System (WPPSS), Benton and Franklin Counties, and the Thirteenth Coast Guard District exists to ensure safety on the Columbia River during an emergency at the Hanford Site and to coordinate response activities for a river evacuation.

7.6.8 Meteorological Information

An MOA is in place between the DOE-RL and the National Weather Service to define mutual responsibilities for providing meteorological information in an emergency situation. Additional meteorological information can be obtained from the Hanford weather station.

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Figure 7-2. 305-B Evacuation Exits.

EMERGENCY SIGNALS

Signal	Meaning	Response
Gong (2 gongs/sec)	Fire	Evacuate building. Move upwind. Keep clear of emergency vehicles.
Siren (steady blast)	Area Evacuation	Proceed promptly to north parking lot accountability area. Follow instructions.
Wavering Siren	Take Cover	Close all exterior doors, turn off all intake ventilation and notify WM&EC of your whereabouts. Request call back for status and monitor portable radios.
Howler (Aa-oo-gah)	Criticality	Follow "take cover" instructions above. (No criticality will take place in 305-B since fissile materials are not accepted for storage.)

To hear these signals and a description of actions to take, call 373-2345.

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7.6.9 Washington Public Power Supply System

An MOA has been established between DOE-RL and WPPSS for providing mutual assistance as needed and available in the use of facilities and equipment for personnel decontamination, first aid, evacuation and reassembly areas, respiratory protective equipment, protective clothing, radiological survey equipment, resources for river evacuation, and radiological assistance response.

7.7 EVACUATION PLAN [G-7]

The 305-B unit has an evacuation plan which includes emergency signal identification and staging area location. In the event an evacuation is required, 305-B unit personnel depart by one of the exit doors noted in Figure 7-2 and proceed through the north gate. They are to assemble in the north parking lot accountability area for accounting. If the north gate is blocked by the emergency, personnel may escape through the Apple Street (west) gate opening to Stevens Drive or the south gate.

7.8 REQUIRED REPORTS [G-8]

Three types of written post-incident reports, summarized below are required for incidents at the 305-B unit.

7.8.1 Report to Ecology/EPA

Within 15 days of the incident, a written report will be submitted to Ecology concerning the incident. The report must include:

- Name, address, and telephone number of DOE-RL contact;
- Name, address, and telephone number of 305-B unit;
- Date, time, and type of incident (e.g. fire, explosion);
- Name and quantity of material(s) involved;
- The extent of any injuries;
- Assessment of any actual or potential hazards to human health or the environment caused by the incident;
- Estimated quantity and disposition of recovered material that resulted from the incident;
- Cause of the incident; and
- Description of corrective action taken to prevent recurrence of the incident.

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7.8.2 DOE Occurrence Reporting

Under DOE Order 5000.3A, an occurrence report is required for incidents occurring at the 305-B unit involving hazardous materials release, fire, etc. Specific details of this reporting system are found in the Order. To summarize, the BED is responsible to file the following occurrence reports with DOE-RL under the Order:

- Within 24 hours of discovery, file a Notification Report.
- Within 10 days of discovery, file a complete Occurrence Report reporting all information available.
- File an updated Occurrence Report whenever significant new information relating to the incident becomes available.
- File a final Occurrence Report when cause of the incident has been analyzed, root cause and contributing causes determined, corrective actions determined and scheduled, and "lessons learned" identified.

7.8.3 Off-Normal Event Reporting

Under off-normal event reporting procedures, occurrences shall be promptly investigated, reported, and analyzed to ensure that effective corrective actions are taken in compliance with contractual, statutory, and corporate requirements. All incidents are recorded in the building manager's logbook, and the logbook is audited to assure that incidents were reported and handled properly. In the DOE reporting system, four levels of incidents are described in descending order of severity: emergency, unusual occurrence, off-normal occurrences, and logbook entry only.

An "off-normal event" is a significant deviation from normal operation that requires categorization and reporting as noted above. PNL management is required to evaluate an event to determine the depth of investigation and level of reporting required.

Reporting of emergencies, unusual occurrences, and off-normal occurrences takes place as described under Section 7.8.2.

The BED is responsible for investigating each event in his/her area(s) of responsibility and submitting the appropriate report.

7.9 CONTINGENCY PLAN LOCATION

Copies of the 305-B contingency plan are maintained at the following locations:

- The 305-B Storage Unit
- Hanford Fire Department (300 Area Fire Station)
- 300 Area ECC Offices
- The DOE-RL/EACT command post, Federal Building, Richland.
- All local police and fire departments, hospitals, and State and local response teams that may be called upon to provide emergency services.

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8.0 PERSONNEL TRAINING [H]

The information contained in this chapter outlines the Personnel Training Program for PNL 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. PNL 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.

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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 PNL 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 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 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 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 PNL 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
Risk Information for Female Radiation Workers[3]	I	I	I	I
Respiratory Protection	A	A	A	N
Hazardous Waste Operations (24-hour initial w/ 8-hour annual 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	B	B	B	N
Hazardous and Radioactive Material Packaging and Shipping	N	B	B[4]	N
Solid Waste Management Operations Operating Manual (PNL-MA-833)	I[5]	I[5]	I[5]	I[5]
Hazardous and Mixed Waste Generator	A	A	A	A
Hazardous Waste Operations Supervisor	I	N	N	N

[1]Staff Position Key: OS -- Unit Operations Supervisor
E -- MW and Waste Management Engineers
TS -- Waste Management Technicians and 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.

[4]Required for staff directly responsible for radioactive material shipments.

[5]Required initially or whenever manual is revised.

Figure 8-1. 305-B Training Requirements.

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

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

A list of the personnel filling the above mentioned positions as of February 8, 1994 can be found in Appendix 8A. The personnel list will be updated as the names of responsible personnel change.

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

A number of training courses are required of 305-B personnel on periodic basis. A brief description of required courses is given in this chapter (Figure 8-1). Equivalent training may be substituted with approval from the 305-B unit operating supervisor or the waste managment section manager.

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

8.1.3 Training Coordinator [H-1c]

Training at PNL 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 an engineer or specialist having "hands-on" experience with handling chemical wastes. PNL also has a unit which tracks and monitors training for PNL employees. This coordination includes a system for "flagging" affected employees when additional training and/or followup is warranted.

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

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

- Hazardous Waste Management -- Annual: This training covers internal PNL hazardous and mixed waste procedures and issues, and regulatory requirements applicable to PNL operations.

- Worker Right-to-Know -- Initial: This course familiarizes the employee with their rights under the right-to-know statutes. Information on material safety data sheets and their availability and on standard industrial hygiene terms is also covered.

- 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 PNL-owned vehicles.

- General Radiation Safety -- Biennial: This course gives staff members information on the basic characteristics of radiation, natural and manmade sources, biological effects and risks of radiation exposure, ALARA, contamination control, and warnings and alarms.

- Risk Information for Female Radiation Workers -- Initial: For female radiation workers only. The briefing informs the female radiation worker of the potential hazards of radiation to women of reproductive age.

- Solid Waste Management Operations Operating Manual (PNL-MA-833) -- Initially or whenever procedure content is revised: This requirement is fulfilled by reading and studying the written procedures.

- Hazardous Waste Shipment Certification -- Initial: This course provides training to those who supervise and prepare hazardous waste shipments and who certify that these shipments have been properly prepared in compliance with applicable laws and regulations. This training ensures that these persons understand their responsibilities and liabilities in the shipment of hazardous waste and that they have a basic understanding of which regulations are applicable and how they must achieve compliance.

- Hazardous and Radioactive Material Packing and Shipping Representative -- Biennial: This course provides training in 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).

- Crane Hoist and Rigging Safety -- Triennial: This course provides instruction in the safe operation of cranes and in proper rigging techniques.

- Safe Forklift Operation -- Triennial: This course provides instruction in the safe operation of forklifts.

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

8.1.5 Training for Emergency Response [H-1e]

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

- Using, inspecting, repairing, and replacing unit emergency and monitoring equipment
- Activating and responding to communications and alarm systems
- Response to fires and explosions
- Shutdown of operations.

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Procedures for Using, Inspecting, Repairing, and Replacing Unit Emergency and Monitoring Equipment. Personnel operating 305-B are adequately trained to ensure prompt and effective response to emergency situations that may arise during operation of the unit. The following required safety courses outline procedures for using, inspecting, repairing, and replacing unit emergency and monitoring equipment.

- Building Emergency Preparedness (contingency plan): conducted annually or when changes are made, whichever is more frequent, to familiarize the employee with the written contingency plan and specific responsibilities of emergency procedures.
- Hand-Held Radio Operator: conducted initially, this briefing makes the employee familiar with the operation of the hand-held and truck-mounted radio for both everyday and emergency operation. This briefing also includes a discussion on radio etiquette.
- Respiratory Protection: conducted annually, the course familiarizes the operating staff with the proper use of air purifying respirators and their limitations. It also makes the staff aware of potential respiratory hazards, how to recognize them, and what actions to take.
- Hazardous Waste Operations: consists of 24-hour initial training and an 8-hour annual refresher. This course provides extensive instruction on the use of field survey instruments such as combustible gas indicators, oxygen meters, detector tube systems, photo and flame ionization instruments, organic vapor analyzer (OVA) meters, and atmospheric sampling instruments. Other topics covered include heat-induced illnesses, OSHA's Emergency Response Standards, lists of personal protective equipment, hazardous materials classification systems, confined space work practices, liquid storage tanks, contamination control, toxicology, medical monitoring, and many others.
- SCBA: conducted annually, this course instructs the employee of the advantages and limitations of the SCBA equipment. Key items covered include equipment inspection, modes of operation, donning procedures,

recognition and response to malfunctions, maintenance and repair, and practical demonstrations.

- Fire Extinguisher Use: conducted annually, this 30-minute course consists of a videocassette, lecture, and reading materials. Its intent is to familiarize all personnel with proper discharging, inspecting, and maintenance procedures for fire extinguishers to be used during an emergency.

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

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

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

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

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

8.2 IMPLEMENTATION OF TRAINING PROGRAM [H-2]

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

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

APPENDIX 3A

305-B STORAGE UNIT WASTE ANALYSIS PLAN

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CONTENTS

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CONTENTS (Continued)

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FIGURES

TABLES

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ACRONYMS AND INITIALISMS

AA	Atomic Absorption
ASTM	American Society for Testing Materials
CDRR	Chemical Disposal Recycle/Request Form
CFR	Code of Federal Regulations
COLIWASA	Composite Liquid Waste Sampler
DOE	Department of Energy
DOE-RL	Department of Energy-Richland Field Office
DOT	Department of Transportation
DW	Dangerous Waste
EHW	Extremely Hazardous Waste
EPA	Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectroscopy
ICP	Inductively Coupled Plasma Spectroscopy
LDR	Land Disposal Restricted
MW	Mixed Waste
MSDS	Material Safety Data Sheet
ORM	Other Regulated Material
OSHA	Occupational Safety and Health Administration
OVA	Organic Vapor Analyzer
PCB	Polychlorinated Biphenyls
PNL	Pacific Northwest Laboratory
RCW	Revised Code of Washington
RCRA	Resource Conservation and Recovery Act
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage, or Disposal
WAC	Washington Administrative Code
WM	Waste Management

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ABBREVIATIONS

°C	degrees Celsius
Ecology	Washington State Department of Ecology
°F	degrees Fahrenheit
fpm	feet per minute
ft	feet
g	gram
gal	gallon
in	inch
kg	kilogram
L	liter
lb	pound
lbs	pounds
yr	year
305-B	305-B Storage Unit

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305-B STORAGE UNIT
WASTE ANALYSIS PLAN

1.0 FACILITY DESCRIPTION

This plan describes the process used to obtain the information necessary to manage wastes in accordance with the requirements of WAC 173-303 (Ecology 1994). The plan correlates with Section II.E. of the Hanford Facility Dangerous Waste (DW) Permit. Together, this plan and the waste characterization and analysis data in the "Hanford Facility Dangerous Waste Permit Application, 305-B Storage Unit Waste Characteristics Supplemental Information," submitted to the Environmental Protection Agency (EPA) and Ecology in October 1993, comprise the 305-B Storage Unit (305-B) waste analysis plan.

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The 305-B Storage Unit, located in the northwest portion of the 300 Area of the Hanford Site, is a dangerous-waste and mixed-waste storage unit owned and operated by the U. S. Department of Energy (DOE) and co-operated by Pacific Northwest Laboratory (PNL). The Pacific Northwest Laboratory is operated for the DOE by Battelle Memorial Institute under Contract DE-AC06-76RL0 1830. The 305-B Storage Unit is managed by PNL's Waste Management section and is used for the collection, sampling, consolidation, packaging, storage, and preparation for transport and disposal of both dangerous waste and limited amounts of mixed waste. Activities conducted at 305-B include receiving, interim storage, and shipment of containerized waste regulated by Resource Conservation and Recovery Act (RCRA), Federal Insecticide, Fungicide, Rodenticide Act (FIFRA), and Toxic Substance Control Act (TSCA). It is an integral part of the Hanford Site's waste management system.

The 305-B Storage Unit, which was constructed in the early 1950's, is a one-story frame and masonry building with a basement. Attached is a two-story-high metal and concrete building, which was constructed in January 1978, referred to in this document as the "high bay." The unit is located within the 300 Area, as shown in Figure 3A-1, and was formerly used for engineering research and development. Unit upgrades were completed in 1988 to meet requirements for storage of dangerous waste and mixed waste. Waste storage under interim status began in March 1989.

A variety of small-volume chemical wastes are generated by PNL's research laboratory activities under contract to DOE. These wastes are brought to 305-B and segregated by compatibility for storage in the unit until enough waste is accumulated to fill a labpack or bulking container, usually a 30- to 55-gal drum. When a sufficient number of shipping containers of waste has accumulated, they are manifested for shipment to permitted off-site recycling, treatment, or disposal facilities.

Dangerous wastes are stored in the high bay, which has been equipped with a secondary containment system to facilitate storage of containerized wastes. In addition, four storage "cells" have been constructed within the high bay area for segregated storage of incompatible waste streams (including polychlorinated biphenyls storage area). Each of the cells is approximately 14 ft. x 14 ft., enclosed by 4-ft-high concrete block walls; each cell has its own separate secondary containment system. Drum-quantity storage for incompatible wastes has also been provided in separate areas in the southeast corner of the high bay. A self-contained flammable storage module is located at the south end of the high

bay. Its fire suppression system is interconnected with building the water supply.

Mixed waste is stored in a concrete vault in the basement of the original wing of the building in an area approximately 18 ft. x 32 ft. The mixed waste area is also equipped with a secondary containment berm to prevent migration of spilled wastes. Flammable mixed waste cannot be stored below grade, per the Uniform Fire Code (UFC), and is stored on the first floor of the original wing. A PCB storage area is also located in the basement. The storage area complies with 40 CFR 761.60 and is used to store radioactively contaminated PCB material and equipment.

Further segregation is provided by chemical storage cabinets located throughout the facility in various areas as shown in Figures 3A-3 through 3-12. Cabinet types are noted in those figures and capacities described in Table 3A-1.

A simplified building layout is shown in Figure 3A-2.

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1.1 HIGH BAY STORAGE AREA

The high bay is where most of the dangerous waste is stored at 305-B. In the highbay non-radioactive dangerous wastes are stored and packaged in several different areas. In the high bay there are four storage cells (acids and oxidizers cell, poisons and other regulated materials (ORM) cell, caustics, Washington-only wastes, and non-regulated waste cell and organics cell), four drum storage areas (acid, caustic, oxidizer and flammable drum storage area), a flammable liquid bulking module, and a self-contained flammable storage unit.

1.2 HIGH BAY FLOOR

Due to space limitations in the individual cells, and for ease of mechanical handling, the high bay floor is typically used for storage of non-radioactive chemicals in drums. There is also capacity for six drums of flammable waste storage inside of four flammable liquid drum storage cabinets located along the west side of the high bay (see Figure 3A-3).

The high bay floor is also used to store labpacks and bulked waste containers before shipping offsite to RCRA permitted treatment, disposal, or recycling facilities. Generally, only ignitable wastes (oxidizers), toxic organic solvent mixtures (typically halogenated solvents), antifreeze mixtures, contaminated water that is toxic, nonliquid wastes, ORMs, or state-only dangerous waste materials are stored in the high bay storage area.

If wastes incompatible with the foregoing are stored in the high bay storage area, they are kept separated and stored in individual drip pans for segregation in case of simultaneous accidental spillage. Compatibility of the materials is determined before prior to acceptance in accordance with internal PNL General and Health Practices procedures regarding chemical hazards and compatibility.

1.3 ACIDS AND OXIDIZERS CELL

The acids and oxidizers cell is located at the northwest corner of the 305-B high bay floor. Storage capacity of the cell is limited by the UFC to not more than 55 gal of liquid (inorganic or noncombustible organic) acids, 6000 cubic ft. of oxidizing gases, 50 gal of oxidizing liquids, 1000 lb of ammonium nitrate and ammonium nitrate mixtures, and 500 lb of solid oxidizers. A diagram of the cell is provided in Figure 3A-4.

1.4 POISONS AND ORM CELL

The poisons and ORM cell is located just south of the acids and oxidizers cell along the west wall of the high bay. The northeast corner of the cell is sectioned off with a 6 in. spill retention berm to allow PCB storage for disposal complying with 40 CFR 761.65(b). Due to space limitations, no more than 800 gal of liquid poisons and/or ORMs will be stored at one time. There is no UFC restriction on storage of poisons or ORMs at 305-B. A diagram of this cell is provided in Figure 3A-5.

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1.5 CAUSTICS, WASHINGTON-ONLY WASTES, AND NON-REGULATED WASTE CELL

The caustics, Washington-only wastes, and non-regulated waste cell is located adjacent to the poisons and ORM cell on the west wall of the high bay area. Due to space limitations, no more than 800 gal of liquids will be stored at one time in this cell, no more than 55 gal of which may be caustics due to UFC restrictions. A diagram of this cell is provided in Figure 3A-6.

1.6 ORGANICS CELL

This cell is located south of the caustics, Washington-only wastes, and non-regulated waste cell. A diagram of this cell is provided in Figure 3A-7. Organic waste materials are stored in this cell unless they are non-flammable and exhibit the characteristics of corrosivity or reactivity. Seven Factory Mutual-approved flammable liquid storage cabinets are used for storage of various classes of flammable liquids as defined by the UFC.

Total flammable waste storage capacity of the 305-B high bay, including the organics cell, flammable drum storage area, and high bay storage area is limited by the following UFC restrictions for Class B occupancy:

Class 1A flammable liquids: 120 gal
Class 1B flammable liquids: 240 gal
Class 1C flammable liquids: 360 gal
Maximum Class 1A, 1B, and 1C at any one time: 480 gal
Class 2 combustible liquids: 480 gal
Class 3A combustible liquids: 1320 gal
Combustible fibers, loose: 100 cubic ft.
Combustible fibers, baled: 1000 cubic ft.
Flammable gases in any one cylinder: 3000 cubic ft.
Liquefied flammable gasses: 60 gal

To maintain required aisle spaces and functional usability, the liquid capacity of the organic cell is set at 1000 gal.

1.7 FLAMMABLE LIQUIDS BULKING MODULE

The flammable liquids bulking module, along with its purpose of providing a ventilated area for bulking of compatible hydrocarbon wastes, is used as an independent storage cell. A flammable storage cabinet in the module provides 55 gal of non-transient flammable liquids storage. A diagram of the module is provided in Figure 3A-8.

1.8 FLAMMABLE LIQUIDS STORAGE MODULE

The flammable liquids storage module is a self-contained storage module 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 high bay. A diagram of the module is provided in Figure 3A-9.

1.9 FLAMMABLE WASTE DRUM STORAGE AREA

A section of the high bay has been dedicated to storing drum quantities of flammable waste before offsite shipping. The area is bordered on the north and south sides by angle iron (3 in. x 6 in.) bolted to the floor and sealed to provide secondary containment. The area is approximately 15 ft. x 7 ft. To further enhance containment and to allow greater storage capacity, the drums stored in this area are stored in flammable liquid drum storage cabinets.

Maximum storage in this area is six 55-gal drums and twelve 5-gal drums. A diagram of this area is included in Figure 3A-10. Additional flammable waste storage is provided in Cell four, organics cell, and in the high bay storage area. All of this flammable waste storage uses flammable liquid storage cabinets for added safety.

1.10 ACID WASTE DRUM STORAGE AREA

A section of the high bay has been dedicated to storing drum quantities of acid waste before offsite shipping. The area is constructed similarly to the flammable waste drum storage area (see above) and is also 10 ft. x 7 ft. in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident. Maximum storage in this area will be eight 55-gal drums. A diagram of this area is included in Figure 3A-10.

1.11 CAUSTIC WASTE DRUM STORAGE

A third section of the high bay has been designated for storing drum quantities of caustic waste before shipping offsite. The area is constructed similarly to the flammable waste drum storage area (see above) and is approximately 10 ft. x 10 ft. in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident. Maximum storage in this area is eight 55-gal drums. A diagram of this area is in Figure 3A-10.

1.12 FLAMMABLE MIXED WASTE STORAGE AREA

Due to UFC restrictions, flammable mixed waste cannot be stored in the basement of 305-B with the other mixed waste. The flammable mixed waste received by 305-B for storage before disposal is stored in a separate area above grade in the east portion of the building in a 7 ft. x 7 ft. x 7 ft. flammable liquid storage module. The module is factory mutual approved and has 4-hour fire rated walls and doors. The module has a self-contained internal dry chemical fire suppressant system. The module is lag bolted to the concrete floor in the flammable mixed waste storage area indicated in Figure 3A-2. The module has a storage capacity of four 55-gal drums, or up to 250 gal of total capacity of all containers stored, whichever is less. A diagram of this cell is provided in Figure 3A-11.

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1.13 MIXED WASTE STORAGE AREA

Mixed waste that is not flammable per UFC (i.e., flash point above 100°F) is stored in a special area in the basement of 305-b. For additional segregation capability, there are six small chemical storage cabinets and four 5 ft. x 5 ft. stainless steel "container pans" with 12 in. sides. The containment pans are mounted to the floor or wall of the cell to provide segregated storage for potentially incompatible mixed waste streams. Drums stored in this area are stored on pallets to prevent potential contact with spilled waste in containment during an emergency. A diagram of this area is provided in Figure 3A-12.

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

2.0 305-B MANAGED WASTESTREAMS

Wastes stored at 305-B are from DOE operated and managed facilities and are usually generated by PNL staff. Wastes stored a the unit can be categorized as originating from seven basic sources:

- Waste from nonspecific sources
- Discarded commercial chemical products
- Waste from research activities using radioactive isotopes
- Waste from chemicals synthesized or created in research laboratories

- Discarded commercial products exhibiting dangerous-waste characteristics and/or criteria.

- Oil wastes

- Waste from maintenance activities.

Each of these waste categories is discussed below, including waste descriptions, hazard characteristics, and bases for hazard designations. A complete listing of wastes managed at 305-B, specified by waste code, is included in the Part A application Form 3. The following information includes that which must be known to treat, store, or dispose of the wastes, as required under WAC 173-303-806(4)(a)(ii).

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2.1 WASTE FROM NONSPECIFIC SOURCES

Wastes from nonspecific sources consist of those listed wastes identified in WAC 173-303-9904. The Part A permit application for 305-B identifies the following wastes from this category with their estimated annual management quantities:

F001 - spent halogenated degreasing solvents and sludges (2000 kg/yr)

F002 - spent halogenated solvents and still bottoms (2000 kg/yr)

F003 - spent nonhalogenated solvents and still bottoms (5000 kg/yr)

F004 - spent nonhalogenated solvents and still bottoms (1000 kg/yr)

F005 - spent nonhalogenated solvents and still bottoms (5000 kg/yr)

F027 - discarded polychlorinated phenol formulations (200 kg/yr)

These halogenated and nonhalogenated solvents are in the form of spent solvents; no still bottoms are generated. Degreasing solvents (F001), as well as spent halogenated solvents (F002), are used primarily in research although some commercial applications do exist (e.g., printing, duplicating). Spent non-halogenated solvents (F003, F004, and F005) also come primarily from research laboratories, although a significant amount of methyl ethyl ketone (F005) is generated through maintenance applications such as the Craft Services paint shop (350 Building). Manufacturing is not performed at PNL; therefore, dangerous wastes from specific sources (WAC 173-303-9904 "K" Wastes) are not generated.

Wastes in this category (F Wastes) are generally received at 305-B in 1-gal and 5-gal flammable liquid safety cans ("flash cans"). Methyl ethyl ketone, which is received in 55-gal drums, is an exception.

Wastes in this category are designated on the basis of the generator's knowledge [i.e., information from container labels or material safety data sheets (MSDS)], or by sampling. Sampling is performed if there is insufficient information to document the composition and characteristics of the waste. The waste generator is responsible for specifying the characteristics of the waste on the basis of knowledge of the chemical products used (i.e., information supplied by the manufacturer) and the process generating the waste. These listed wastes are all designated as DW unless the generator determines through process knowledge (i.e.,

knowledge of materials used and concentrations used) that wastes F001 or F002 contain greater than 1% halogenated hydrocarbons. Wastes with greater than 1% halogenated hydrocarbons are designated as extremely hazardous waste (EHW). Wastes F001 through F005 are also designated as land disposal restricted (LDR) wastes under 40 CFR 268.30 (solvent wastes). Waste F027 is designated as an LDR waste under 40 CFR 268.31 (dioxin-containing waste).

2.2 DISCARDED CHEMICAL PRODUCTS

Discarded chemical products are those listed in WAC 173-303-081. The Part A permit application for 305-B identifies all of the discarded chemical products listed in WAC 173-303-9903 (U and P listed wastes) and specifies an estimated maximum annual management quantity, based on prior experience, of 200 kg/yr for each of these wastes. Only a few of these wastes are typically generated at any one time. The Part A permit application listed all of these wastes, however, because the wide variety of research activities conducted at PNL presents the potential to generate any of these wastes.

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These wastes (U wastes and P wastes) are typically received at 305-B in the manufacturer's original container. Approximately 70% of these wastes are in partially full, opened containers, and the remaining 30% are in sealed, unopened containers. These containers typically consist of glass and polyethylene jars or bottles and metal cans having a volume equal to or less than 4 L.

Wastes in this category are designated on the basis of the generator's process knowledge. As these wastes are usually in original containers, information on the container label is verified by generator knowledge (i.e., knowledge that material is in its original container) and is used to identify contents. Wastes in "as procured" containers (i.e., original container with intact label) are not sampled. These listed wastes contain those designated as DW as well as those designated as EHW. These wastes are also subject to LDR regulations under 40 CFR 268, including disposal prohibitions and treatment standards.

2.3 WASTE FROM RESEARCH ACTIVITIES USING RADIOACTIVE ISOTOPES

Dangerous wastes (DW) from research activities using radioactive isotopes are mixed waste. These wastes are generated in laboratories performing chemical and physical research and consist primarily of radiologically contaminated chemicals or lead stacked in sealed 55-gal drums. These wastes are designated on the basis of the generator's knowledge or on the basis of sampling and analysis. The generator's knowledge is used if the generator has kept accurate written records of the identities and concentrations of constituents present in the waste. For example, many generators keep log sheets for accumulation containers in satellite areas to keep a record of waste constituents. If information available from the generator is inadequate for waste designation, the wastes are sampled (as described in Section 5.2) and the results of the analysis are used for designation. These wastes include those designated as DW mixtures under WAC 173-303-084 and also those designated as characteristic DW under WAC 173-303-090. The Part A permit application for 305-B includes all categories of toxic, persistent, and carcinogenic waste mixtures (i.e., both DW and EHW). While not all of these wastes are currently generated or have been generated, the wide variety of research activities conducted at PNL presents the potential that these wastes could be generated and require subsequent management at 305-B. Similarly,

The Part A permit application includes the characteristic DW categories D001 through D043 (i.e., ignitable, corrosive, reactive, and TCLP toxic due to metals or organics content).

Flammables (i.e., flash point less than 100° Fahrenheit) will not be stored in the below-grade mixed waste cell; however, ignitables (D001 due to oxidizer content) will be stored in this cell. Flammable mixed waste is not stored below grade due to UFC restrictions. These wastes are stored above the grade in a flammable storage module. The flammable mixed waste module is equipped with secondary containment to provide greater than 100% secondary containment volume.

The wastes in this category could include those designated as either DW or EHW. These wastes could also be federal LDR wastes regulated under 40 CFR 268 as well as state LDR wastes regulated under WAC 173-303-140 (e.g., leachable inorganic wastes).

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2.4 WASTE FROM CHEMICALS SYNTHESIZED OR CREATED IN RESEARCH LABORATORIES

Wastes from chemicals synthesized or created in research laboratories typically consist of organics in quantities of 100 g or less, received in small containers.

These wastes are designated on the basis of the generator's knowledge or on the basis of sampling and analysis. The generator's process knowledge is used if the he has kept accurate records of the identities and concentrations of constituents present in the waste (e.g., log sheets for accumulation containers). If information available from the generator is inadequate for waste designation, the wastes are sampled (as described in Section 3.2) and the results of the analysis are used for designation. These wastes include those designated as DW mixtures under WAC 173-303-084 and also those designated as characteristic DW under WAC 173-303-090. The Part A permit application for 305-B includes all categories of toxic, persistent, and carcinogenic waste mixtures (i.e., both DW and EHW). While not all of these wastes are currently generated or have been generated, the wide variety of research activities conducted at Hanford presents the potential that these wastes could be generated and require subsequent management at 305-B.

The wastes in this category could include those designated as either DW or EHW. These wastes could also be federal LDR wastes regulated under 40 CFR 268 as well as state LDR wastes regulated under WAC 173-303-140 (e.g., organic/carbonaceous wastes).

2.5 DISCARDED COMMERCIAL PRODUCTS EXHIBITING DANGEROUS WASTE CHARACTERISTICS AND/OR CRITERIA

Many discarded chemical products handled in 305-B are not listed in WAC 173-303-9903 and are still considered DW since they exhibit at least one DW characteristic and/or criterion (WAC 173-303-090 and WAC 173-303-084). These wastes are included with those listed in the Part A permit application under waste codes D001 through D043, WT01, WT02, WP01, WP02, and WC02. These wastes are typically received at 305-B in the manufacturer's original container. Approximately 70% of the wastes are in partially full, opened containers; the remaining 30% are in sealed, unopened containers for which no local recycle/reuse options can be identified. These containers typically consist of glass and polyethylene jars or bottles and metal cans having a maximum volume of 4 L.

Wastes in this category are designated based on the generator's process knowledge. As these wastes are usually in their original containers, information on the container label is verified by the generator's process knowledge and is used to identify the contents. These wastes contain those designated as DW as well as those designated as EHW. These wastes could also be federal LDR wastes regulated under 40 CFR 268 as well as state LDR wastes regulated under WAC 173-303-140 (e.g., organic/carbonaceous wastes, leachable inorganic wastes)

2.6 OIL WASTES

Oil wastes typically consist of pump oil, PCBs, soil contaminated with oil, and other commercially refined products contaminated with DW constituents. These wastes are typically received in 5 gal or larger containers and are designated on the basis of the generator's process knowledge or on the basis of sampling and analysis. The generator's process knowledge is used if the generator has kept accurate records of the identities and concentrations of constituents present in the waste (e.g., log sheets for accumulation containers). If information available from the oils were used in machinery or a process where contamination by other wastes is suspected, the wastes are sampled and the results usually designated as characteristic wastes (including W001) and/or wastes from nonspecific sources (F001 through F005), as listed above, or toxicity characteristic (D004-D043), depending on the type of contamination.

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2.7 WASTE FROM MAINTENANCE ACTIVITIES

Waste generated during maintenance activities typically consists of crushed fluorescent light tubes, paints, light ballasts, and batteries. These wastes are typically received in 5 gal or larger containers and are designated by MSDS or analytical data. The generator's process knowledge is used if the generator has kept accurate records of the identities and concentrations of constituents present in the waste (e.g., log sheets for accumulation containers). If information available from the generator or MSDS is inadequate for waste designation or if the material was used in machinery or a process where contamination by other wastes is suspected, the wastes are sampled and the results of the analysis are used for designation. These wastes are usually designated as characteristic wastes (including W001) and/or wastes from nonspecific sources (F001 through F005), as listed above, or toxicity characteristic (D004-D043), depending on the type of contamination.

3.0 INFORMATION FROM GENERATORS

Before receipt or acceptance of waste at 305-B, generators must supply adequate information to properly characterize and manage the waste. The information includes waste characterization data, waste volume, container information, and generator information. Wastes are almost exclusively received from PNL operational research staff. Sections 3.1 and 3.2 describe the information received from the two categories.

3.1 PNL GENERATOR SUPPLIED INFORMATION

Waste characterization data are provided on a Chemical Disposal/Recycle Request form (CDRR) and is based on process knowledge, MSDS, or chemical and physical laboratory analyses of representative samples of a wastestream. An example CDRR Form is provided in Figure 3A-13. The Information generators supply on a CDRR form is:

- **General Information**-General information includes name of person requesting pickup, technical contacts and telephone numbers, accumulation dates, and waste types.

- **Number of Containers**-The generator indicates the number of containers for each unique waste stream.

- **Container Description**-The volume capacity of each container is entered, e.g., 55 gal, 5 gal, pint, etc. Container information must include the type and material (i.e., glass bottles, steel drums, plastic drums, fiberboard drums, cardboard boxes) and the condition of the container (i.e., damaged containers may need overpacking).

- **Waste Quantity**-The total weight of the waste in each container is entered in kilograms. Containers, inner liners, and weight of absorbents used in a combination package are not considered part of the waste when computing total waste quantity.

- **Material Description**-The generator must provide the trade name(s) (if available) and a general description of each unique wastestream.

- **Chemical Components**-The generator must enter all constituents in each waste. The wt% of all waste constituents must total 100% including water, absorbent, and other inert ingredients. Traces of pesticides, herbicides, heavy metals, and PCB must be specified if present. Elements of particular importance are arsenic, barium, cadmium, silver, mercury, chromium, lead, and selenium. Components must add up to 100 wt% including water, soil, or other constituents.

  If weights are available only in ranges (e.g., methanol 10% to 20%), the generator must list the ranges. All available information describing the waste composition (MSDS, laboratory analysis) must be attached to the CDRR. Attached information must be clearly identified (MSDS number, sample number).

The acceptable ways to obtain chemical information without laboratory analyses are as follows:

- **Commercial Chemicals**-Information concerning the chemical makeup of waste can be found in specification sheets, on labels, and on MSDSs. The information provided must be specific for the commercial chemical used.

- **Laboratory Reagents**-Information on laboratory reagents can frequently be identified by ingredients listed on the label. If the label lists impurities, such as lead, arsenic, or other heavy metals, the generator must include those on the CDRR.

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- **Routine and Nonroutine Waste Mixtures**-Generators are required to use a logbook when waste is accumulated from a routine or nonroutine process. The generator must calculate concentrations of reagents from the analytical procedure or reaction process to determine the weight percent of each constituent.

If the MSDS, laboratory reagent, process knowledge, or analytical information provides insufficient information for a complete designation, 305-B waste management personnel will require the generator to provide laboratory analyses before acceptance at 305-B.

- **Physical Properties**-The generator specifies the physical properties of the waste by identifying whether the waste is a solid, liquid, gas, or sludge; multilayered; etc.

  The generator specifies the pH of the waste. For solids or semisolids, the generator must determine the pH by mixing the solid with an equal weight of water and measuring the pH of the solution.

- **Container/Waste Status**-The generator enters the appropriate abbreviations from the following (more than one might be necessary):

Full	-	F
Partially Full	-	PF
Empty	-	MT
Triple Rinsed	-	TR
Treated	-	T
Spill material	-	S
Old	-	O
New	-	N (unused material)
Recycleable	-	R

PNL waste generators are also required to submit any supporting analysis documentation and/or MSDS information with the CDRR. The information and data supplied on and along with the CDRR form allows the waste management organization to evaluate and designate the waste and to compare it to the 305-B acceptance criteria and requirements.

3.2 NON-PNL GENERATOR SUPPLIED INFORMATION

In the event that 305-B will be asked to receive waste generated from a non-PNL generator, the generator will at a minimum supply the same information as listed above for PNL generators. Generators that fall into this category could include on-site and off-site generators. The information required before acceptance will be comparable to the example waste profile sheet in Figure 3A-14.

4.0 WASTE CHARACTERIZATION, ANALYSIS, AND ACCEPTANCE

The following waste characterization, analysis, and acceptance process describes the process implemented at 305-B to meet the chemical and physical analysis requirements of WAC 173-303-300(2). The waste analysis process begins when the waste management organization is notified of the presence of a chemical or mixed waste. This notification is accomplished by the generator completing and

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transmitting a CDRR form. See Figure 3A-13 for an example of the form. The information requirements of a CDRR are detailed in Section 3.1. Generators are required to submit all supporting data that verify the composition of the waste stream. These supporting data can be MSDSs, laboratory analytical data, and process descriptions. Hazard and compatibility information are obtained for each item on the disposal request form to ensure the safety of the waste management organization staff who collect and transport the waste and to ensure safe and appropriate storage in 305-B.

The primary source of information used by the generator to complete the waste tracking form is process knowledge. The process knowledge information is included with the CDRR form submitted to the Waste Management section for review, approval, and designation. The process knowledge information that might be submitted includes, but is not limited to, the following:

- Chemical Specifications-Chemical specifications might be available from the purchase specifications of the particular chemical in question, from product information provided by the manufacturer, or on the labels for the particular chemical in question. For "pure" chemicals where the material contents and characteristics are well known (e.g., hydrochloric acid), standard chemical reference materials could provide the required information.

- MSDS-Chemical specifications and related information are available on these standard reference materials. The MSDSs could be provided by the manufacturer or acquired through available MSDS databases where the information can be downloaded electronically.

- Process Description-Pertinent details of the process generating the waste and the chemicals used that might have generated the particular waste should be described. The explanations required range from extremely simple to very complex. The more complex the process, the more information required, such as process flow diagrams and listings of chemicals used in the process or introduced at various points in the process before the waste stream in question is generated or reactions that might have taken place.

Other information sources could be used as long as these sources provide detailed information on the chemical constituents present, chemical concentrations, material characteristics (e.g., physical state, ignitability), and the characterization requirements on the CDRR.

The Waste Management staff review the CDRR and either approve or reject the request. Typical causes of rejection include missing or insufficient information in any of the data fields or lack of specific information on waste composition. Where potential deficiencies exist in the information provided, or additional waste constituents might be expected to be present that do not appear on the waste tracking form, the generator is contacted by Waste Management personnel for resolution. Upon approval, the Waste Management section reviews the form to determine the following information:

- appropriate waste designation per WAC 173-303-070
- land ban disposal restrictions per 40 CFR 268
- packaging, marking, and labeling instructions
- U. S. Department of Transportation (DOT) compatibility groups
- identification of a proper storage cell or location at 305-B.

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The compatibility and hazard designation are determined using references listed in WAC 173-303-070 and those in Table 3A-2. The priority of hazard designation for those substances with multiple hazards or for mixtures is the same used by the DOT in 49 CFR 173.2a.

Reference sources used for determining waste designations and compatibility must meet six distinct needs of the dangerous waste manager and sample collector:

- Identify those wastes that are designated dangerous in accordance with WAC 173-303 and whether those wastes are DW or EHW.

- Determine whether the waste is restricted from land disposal under 40 CFR 268 or WAC 173-303-140 and, as appropriate, complies with treatment standards under 40 CFR 268 or WAC 173-303-140.

- Identify and verify specific morphological characteristics of waste in solid or solution form.

- Outline how to safely handle, transport, analyze, store, recycle, or dispose of the waste product or sample.

- Consider storage

- Identify incompatible/inappropriate wastes.

In addition, the CDRR form is reviewed for potential shock-sensitive characteristics. If the characteristics of a potentially shock-sensitive constituent is unresolvable by 305-B personnel, a review of the waste or constituent by a "cognizant professional" (e.g., recognized senior chemist, manufacturer or commercial treatment, storage, disposal (TSD) facility representative) is required.

The cognizant professional will determine whether the waste or constituent does not exhibit shock-sensitive characteristics, is unable to exhibit the potential shock-sensitive characteristics, has the potential to exhibit shock-sensitive characteristics, or exhibits actual shock-sensitive characteristics. A waste or constituent that is determined to not exhibit shock-sensitive characteristics will be deemed acceptable for storage at 305-B in regard to these parameters. A waste or constituent that is determined to be unable to exhibit shock-sensitive or characteristics will be deemed acceptable for storage at 305-B. If the waste or constituent has the potential to exhibit shock-sensitive characteristics, the cognizant professional will prescribe methods, if available, for the generator to detoxify or stabilize the waste or constituent, thereby rendering the waste acceptable for storage at 305-B. If the waste or constituent exhibits potential or actual shock-sensitive characteristics it will not be accepted for storage at the 305-B.

Essentially all of the waste streams received at 305-B are characterized as described previously because the waste streams are generated from known processes. Occasionally sampling and analysis of waste streams is performed by the generator when no other information is available or 305-B personnel determine that additional information is required before waste acceptance that might be obtained only through waste sampling and analysis.

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4.1 FREQUENCY OF ANALYSIS AND CHARACTERIZATION

A characterization and analysis, as required by WAC 173-303-300(2), is performed on each waste before pickup to determine waste designation and characteristics. These processes begin by the generator submitting the CDRR form for the waste. This characterization and analysis process is performed every time a CDRR is submitted before waste pickup. 305-B personnel can, at their discretion, require additional analyses or re-analysis to substantiate waste characteristics. Instances where this may be required include the following:

- Waste management personnel have reason to suspect a change in the waste based on inconsistencies in the CDRR, packaging, or labeling of the waste

- The information submitted previously by a generator does not match the characteristics of the waste submitted

- The off-site TSD facility rejects the waste because its analyses are inconsistent with the waste profile provided by 305-B, which was established using generator information.

Examples of waste streams and characterization data are provided in the Chapter 3.0 *Waste Analysis Plan, Supplemental Information*, which was submitted to Ecology and to the EPA on October 14, 1993. Parameters for the waste designation and/or characterization rationale are listed in Table 3A-2.

All waste characterization data submitted in support of the waste tracking forms are reviewed by 305-B personnel to determine whether the waste can be accepted at 305-B for storage. 305-B personnel can, at their discretion, require additional analyses or re-analysis to substantiate waste characteristics.

Fingerprint sampling and analysis is performed as part of the 305-B off-site waste verification program and the off-site waste verification program of TSD facilities receiving 305-B waste. Sections 5.0 and 6.0 present the requirements to be met for sampling and analysis of waste streams by the generators, where necessary, and the sampling and analytical requirements for the waste verification program.

5.0 SAMPLING AND LABORATORY ANALYSIS

Sampling and laboratory analysis may be required to verify or establish waste characteristics for wastes that will be stored at 305-B. The following are cases where sampling and laboratory analysis is required:

- inadequate generator information on a PNL generated waste

- 10% waste verification for non-PNL wastes generated off-site

- identification and characterization of unknown wastes and spills

Section 5.1 describes the sampling requirements for such characterization.

5.1 PARAMETERS AND RATIONALE

The waste testing parameters for sampling and analysis and the rationale for these parameters are summarized in Table 3A-3. Testing parameters for each type of unknown waste were selected to obtain data sufficient to properly designate the waste under WAC 173-303-070 and to properly manage the wastes. If limited information on the source of the waste is available, all of the parameters may not be required. For example, if waste oil is known to be from an area where no PCB is present, testing for PCB may not be required.

5.2 SAMPLING METHODS

Because of physical variations of the waste that could be received at 305-B, sampling methodologies differ among the waste streams. The specific sampling methods and equipment used will vary with the chemical and physical nature of the waste material and the sampling circumstances. In all cases, the sampling methods adhere to guidance provided in SW-846 and other pertinent references published and accepted by the EPA. In general, aqueous liquids will be sampled using polyethylene samplers, organic liquids using glass samplers, and solids using polyethylene samplers. Typical sample container requirements for aqueous and solid samples are provided in Table 3A-4.

Representative samples of liquid wastes (vertical "core sections") will be obtained using a composite liquid waste sampler (COLIWASA) or tubing, as appropriate. If a liquid waste has more than one phase, each phase will be separated for individual testing and designation. Other waste types that may require sampling are sludges, powders, and granules. In general, nonviscous sludges will be sampled using a COLIWASA. Highly viscous sludges and cohesive solids will be sampled using a trier, as specified in SW-846 (EPA 1986). Dry powders and granules will be sampled using a thief, also as specified in SW-846 (EPA 1986). The sampling methods and equipment used are identified on Table 3A-5. In all instances, sampling methods will conform to the representative sample methods referenced in WAC 173-303-110(2), i.e., American Society for Testing and Materials (ASTM) standards for solids and SW-846 for liquids.

The number of samples collected will depend on the amount of waste present and on the homogeneity of the waste as determined by observation. In most cases, there will be only one container of waste present. In such cases, only one vertical composite sample will be collected (e.g., COLIWASA). If more than one container of a wastestream is present, then a random number of samples will be collected and analyzed statistically using the procedures specified in Section 9.2 of SW-846 (EPA 1986).

Generators or 305-B personnel are responsible for arranging all sampling and laboratory support for sample analysis. Samples are processed either on-site or off-site at one of several laboratories qualified to perform analysis of waste samples in accordance with SW-846 methods. Sampling methodologies are included in Table 3A-5.

Generators or 305-B personnel also document the sampling activities and chain of custody and arrange sample shipment. Sampling information, custody records, and analytical results are submitted as part of the waste tracking form data package submitted by the generator to the waste management section for review, approval, and designation.

All sampling will conform to the protocols in SW-846. These protocols are described briefly in the following paragraphs.

Sample control procedures (i.e., chain of custody forms) are designed to ensure that each sample is accounted for at all times. The primary objectives of the sample control procedures are as follows:

- Each sample received for analysis is uniquely identified.
- Correct samples are analyzed and are traceable to the applicable data records.
- Important and necessary sample constituents are preserved.
- Samples are protected from loss, damage, or tampering.
- Any alteration of samples during collection or shipping (e.g., filtration, preservation, breakage) is documented.
- A record of sample custody and integrity is established that will satisfy legal scrutiny.

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The basic sampling procedure is as follows:

- Obtain samples using a precleaned sampler.
- Fill sample containers in the following sequence: headspace volatile organics, volatile organics, semivolatile organics, metals, ignitability, pH (corrosivity), reactivity, radiochemical parameters.
- Label sample containers.
- Properly clean and decontaminate sample containers and the sampling hardware.
- Custody-seal and blister-wrap all sample containers, place wrapped containers in a leaktight polyethylene bag, and place samples in a durable ice-filled cooler or comparable receptacle for transport to the laboratory or laboratory receiving facility.
- Complete the chain-of-custody and request-for-analysis forms.
- Review all paperwork and enclose the forms in a leaktight, polyethylene bag taped to the underside of the cooler lid.
- Seal and mark the coolers or comparable receptacles in accordance with applicable DOT requirements.
- Transport coolers to the analytical laboratory or laboratory receiving facility.

Sample container selection is critical to sample quality. Considering waste compatibility, durability, volume, and analytical sensitivities, the containers listed in Table 3A-6 are recommended to the generators for these efforts.

All samples are labeled with at least the following information:

- a unique alphanumeric identifier
- date and time of collection
- sample collector's name
- preservatives used
- analyses requested.

Immediately after collection, samples are placed on blue ice or an equivalent, if necessary, in durable coolers or comparable receptacles for transport to the laboratory. Before shipping, coolers or comparable receptacles are tightly sealed with duct tape and are custody-sealed along the front and back edges of the lids. Samples are transported to laboratories within 24 hours of collection. Samples are transported to off-site laboratories via overnight courier to ensure delivery within 24 hours of sample collection. All sample collection, preparation, packaging, transportation, and analyses conform to the requirements of SW-846.

During all sampling activities, strict compliance with health physics, industrial hygiene, and safety standards is mandatory. Personnel are required to wear eye, skin, and respiratory protection gear as dictated by IH and HP personnel. If personnel accidentally contact waste material, decontamination procedures are to be performed immediately.

A chain-of-custody record accompanies samples at all times. The record contains the sample number, date and time of collection, sample description, and signatures of the collector and all subsequent custodians.

Transportation of samples is in accordance with the DOT and the DOE-RL requirements. Hazardous waste samples are properly packaged, marked, and labeled. Shipping papers are prepared in accordance with applicable DOT regulations.

All equipment used to sample waste materials is disposable or designed for easy decontamination. Cleanable equipment is thoroughly decontaminated before reuse. Decontamination solutions are managed as hazardous waste as appropriate, according to the threshold contaminant levels exceeded in the sampled liquids. Disposable samplers will be used whenever possible to eliminate the potential for cross-contamination.

5.3 SAMPLE CUSTODY

The generators or 305-B personnel are responsible for initiating and following chain-of-custody procedures. Generators or 305-B personnel initiate sample custody records in the field at the time samples are collected. A chain-of-custody form is used to document sample collection activities, including sampling site, sample identification, number of samples, and date and time of collection. Additionally, the form documents the chain of custody including the names of responsible individuals and the dates and times of custody transfers.

5.4 SAMPLE RECEIPT AND STORAGE

Samples are received at a qualified contracted laboratory or laboratory receiving facility by a sample custodian. This individual carefully reviews received samples and documentation for compliance with sampling and documentation requirements, such as type and condition of container, sample preservation, collection date, and chain-of-custody forms. The sample custodian signs and dates the chain-of-custody form after verifying that all samples submitted are listed and that the required information is listed on the form. The sample custodian places an identification number on each sample and returns the samples to a refrigerator designated for storage of samples requiring analysis. The sample custodian stores and secures the samples appropriately (e.g., in a locked refrigerator). Based on the type of sample and analysis requested, special procedures for sample handling, storage, and distribution could be specified.

5.5 SAMPLE DISTRIBUTION

Chain-of-custody documentation for samples continues throughout the analytical process. After logging in and storing the samples, the sample custodian distributes sample receiving logs, which list sample numbers and analyses to be performed, to the appropriate analysts and technical leaders. On completion of analyses, results are submitted to the generators or 305-B personnel along with Quality Assurance (QA)/Quality Control (QC) information.

6.0 ANALYTICAL METHODS

Analytical methods employed to verify or characterize waste are of two types, fingerprint analysis and laboratory analysis. Fingerprint analysis is primarily used to verify waste characteristic of waste received from off-site non-PNL generators. Laboratory analytical methods will be employed to establish waste identity and characteristics and verify waste characteristics when 305-B personnel determine it is necessary.

6.1 FINGERPRINT SAMPLING ANALYTICAL METHODS

A representative sample will be taken of the waste (if more than one phase is present, each phase must be tested individually), and the following field tests will be performed:

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

- Flashpoint/explosivity - by HAZCAT™ flammability Procedure B, explosive atmosphere meter, or a closed cup flashpoint measurement instrument.

- pH - by pH meter or pH paper (SW-846 9041). This test will not be performed on non-aqueous materials (i.e., organic solvents)

- Halogenated organic compounds - by organic vapor analyzer with a flame ionization detector, Chlor-D-Tect kits, or the HAZCAT™ fluoride, chloride, bromide, and iodide tests.

- Volatile organic compounds - by gas chromatograph/mass spectrometer or gas Chromatograph (GC) with a photo or flame ionization detector.

If the waste meets the parameters specified in the documentation, confirmation of designation is complete. If the waste does not meet these parameters, proceed to the next step.

1. Sample and analyze the materials in accordance with WAC 173-303-110 (see Section 6.2).

2. Reassess and redesignate the waste. Repackage and label as necessary or return to the generator.

Data obtained through the waste verification process will be used to verify the accuracy of the waste designation for waste received at 305-B.

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6.2 LABORATORY ANALYTICAL METHODS

Table 3A-5 lists the laboratory analytical test methods that are used to perform the analyses in Section 7.1. All methods are specified in Chemical Testing Methods, Washington State Department of Ecology (WDOE) 83-13 (Ecology 1983) and/or Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA SW-846 (EPA 1986).

All testing is performed by chemists and HP technicians working under approved QA guidelines.

6.2.1 Deviations from SW-846 Protocols for Mixed Waste

The 305-B Storage Unit manages limited quantities of mixed waste and therefore deviations from SW-846 protocols may occur during its analysis. Many of the deviations from the SW-846 protocols arose from the radioactive nature of the samples handled. In addition, recommended sample holding times may be exceeded due to the limited availability of mixed waste analytical facilities and equipment. In general, when samples cannot be sent to off-site facilities, PNL laboratories or other on-site facilities will be used and may deviate from SW-846 protocols.

6.2.1.1 Inorganic Analysis. Analytical procedures used to characterize inorganic species deviate from SW-846 protocols in the general areas of sample preparation, sample size, and analytical techniques. These deviations are discussed in Sections 6.2.1.1.1 and 6.2.1.1.2.

- **6.2.1.1.1 Sample Size and Preparation**-In general, smaller sub-sample sizes (0.25 grams to 0.5 grams versus 1 to 2 grams) are to be used when sampling radioactive mixed waste samples to reduce radiation exposure to laboratory personnel. Many sample preparation steps will be performed in disposable Teflon beakers.

- **6.2.1.1.2 Analytical Techniques**-Fluoride, nitrate, sulfate, and phosphate analyses will be performed using an ion chromatographic method. This method is based on EPA methods for waste water analyses.

6.2.1.2 Volatile and Semivolatile Organics-Because of radiological controls and exposure constraints, it may not be possible to refrigerate mixed waste samples during laboratory storage. This complicates the ability to comply with required storage temperature constraints.

6.2.1.3 Toxicity Characteristics Leaching Procedure (TCLP)-On-site laboratories can perform the TCLP [Method 1311 (WAC 173-303)] on a very limited basis. As the ability to ship and process samples is limited by radiological constraints, total analyses are going to be used in place of TCLP extractions. Solid samples containing a total concentration of a toxic characteristic (TC) regulated compound, which is less than 20 times the regulatory limit, are not considered TC wastes.

7.0 LDR WASTE ANALYSIS REQUIREMENTS

The *Hazardous and Solid Waste Amendments of 1984* prohibit the land disposal of certain types of waste that are subject to RCRA. Many of the waste types stored at 305-B fall within the purview of these land disposal restrictions (LDRs). Information presented in this section describes how generators and 305-B personel characterize, document, and certify waste subject to LDR requirements.

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7.1 WASTE CHARACTERIZATION

Before being received at 305-B the RCRA waste characteristics, the level of toxicity characteristics, and the presence of listed waste are determined during the physical and chemical analyses process of Section 4.0. This information allows waste management personnel to accurately make all LDR determinations and complete appropriate notifications and certifications.

7.2 SAMPLING AND ANALYTICAL PROCEDURES

The LDR characterization and analysis is performed as part of the waste characterization and analysis process in Section 4.0. If waste is sampled and analyzed for LDR characterization only EPA methods are used. Wastes are analyzed using the TCLP in accordance with Appendix II of 40 CFR 261, as amended, to provide sufficient information for proper management and for decisions regarding LDRs pursuant to 40 CFR 268. Approved methods are listed in Sections 5.0 and 6.0, respectively.

7.3 FREQUENCY OF ANALYSIS

Before to acceptance and during the waste characterization and analysis process of Section 4.0, all LDR characterizations and designations are made. This characterization and analysis process is performed every time a CDRR is submitted for waste pickup. Instances where sampling and laboratory analysis may be required to determine accurate LDR determinations include the following:

- When waste management personnel have reason to suspect a change in the waste based on inconsistencies in the waste tracking form, packaging, or labeling of the waste

- When the information submitted previously by a generator does not match the characteristics of the waste that was submitted

- When the offsite TSD facility rejects the waste because the fingerprint samples are inconsistent with the waste profile provided by 305-b, which was established using generator information.

7.4 DOCUMENTATION AND CERTIFICATION

The 305-B Storage Unit provides interim storage for DW eventually destined for treatment or disposal at on-site and off-site TSD facilities. The 305-B Storage Unit has, and will continue, to receive and store LDR waste.

Because 305-B personnel determine designations and characterization, including LDR determinations, all notifications and certifications, as required by 40 CFR 268.7, are prepared by 305-B. The 305-B Storage Unit staff collect from the generating unit(s) the information pursuant to 40 CFR 268.7(a) regarding LDR wastes, the appropriate treatment standards, whether the waste meets the treatment standards, and the certification that the waste meets the treatment standards, if necessary, as well as any waste analyses data that support the generator's determinations. If this information is not supplied by the generator, then the 305-B personnel complete and transmit all subsequent information regarding LDR wastes, pursuant to 40 CFR 268.7(b). The notification and certifications are submitted to on-site and off-site TSD units during the waste shipment process. Additionally, any necessary LDR variances are prepared and submitted by 305-B personnel.

Where an LDR waste does not meet the applicable treatment standards set forth in 40 CFR 268, Subpart D, or exceeds the application prohibition levels set forth in 40 CFR 268.32 or Section 3004(d) of RCRA, 305-B provides to the on-site and off-site TSD a written notice that includes the following information:

- EPA hazardous waste number

- the corresponding treatment standards and all applicable prohibitions set forth in WAC 173-303, 40 CFR 268.32, or RCRA Section 3004(d)

- the manifest number associated with the waste

- all available waste characterization data.

In cases where 305-B determines that a restricted waste is being managed that can be land disposed without further treatment, it submits a written notice and certification to the on-site or off-site TSD where the waste is being shipped to, stating that the waste meets applicable treatment standards set forth in WAC 173-303-140 (40 CFR 268, Subpart D), and the applicable prohibition levels set forth in 40 CFR 268.32 or RCRA Section 3004(d). The notice includes the following information:

- EPA hazardous waste number

- corresponding treatment standards and applicable prohibitions

- waste tracking number associated with the waste

- all available waste characterization data.

The certif ation accompanying any of the previously described notices is signed by an authorized representative of 305-B and states the following:

> I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Copies of all notices and certifications described are retained at the TSD unit for at least 5 years from the date that the waste was last sent to an on-site or off-site TSD unit. After that time, the notices and certifications are sent to Records Storage.

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8.0 WASTE VERIFICATION

Essentially all wastes stored at 305-B are generated on the Hanford Site and/or by PNL research programs; effective administrative control can be maintained over individual waste generators (i.e., the same organization generates the wastes and operates the storage unit). Most of these wastes stored at 305-B are wastes for which detailed process knowledge of waste characteristics is available without sampling and laboratory analysis. In addition, many of the wastes stored at 305-B result from research activities which are carefully controlled and documented; this documentation includes information on chemical constituents. Because of this and the fact that on-site waste verification is not required by regulations, laboratory analytical verification is limited.

Generators are not required to sample wastes unless they have inadequate documentation of waste characteristics. However, waste streams shipped off-site are verified through the analysis of fingerprint samples by the off-site TSD facility to which the waste is shipped.

Sufficient knowledge is obtained from generators on the CDRR form or accompanying information to safely and properly manage dangerous and mixed wastes at 305-B. In the event that such knowledge is not available, sampling and analysis is required by 305-B procedures before acceptance at the storage unit. Any sampling and analysis performed by 305-B staff is performed in accordance with Sections 5.0 and 6.0 of this plan.

8.1 ON-SITE WASTE VERIFICATION REQUIREMENTS

The generators of these wastes and 305-B are located on the Hanford facility with the EPA/State Identification Number WA7890008967. In addition, they are located within the same geographical location, the 300 Area.

Waste verification is limited to visual observation of each waste container by 305-B personnel when it is picked up at the generators site, before to acceptance

at the unit. Waste characterization information provided by waste generators is also verified before wastes are accepted for transport to 305-B (e.g., wastes are inspected to verify that they are as described in the disposal request or accompanying information).

If the visual verification indicates that the generator's waste does not match the characterization or profile, verification activities cease until the discrepancies are resolved.

Upon resolution of any discrepancies or determination that the waste matches the profile, the waste is accepted for storage. If the discrepancy cannot be resolved to the satisfaction of 305-B personnel, the waste is not accepted and left at the generators site or sent back to the generator.

8.2 OFF-SITE PNL WASTE VERIFICATION REQUIREMENTS

Although wastes generated at DOE or PNL-owned or leased facilities in the Tri-Cities area may be considered to be generated off-site since they are generated on property not contiguous with the Hanford facility and are transported to 305-B on roads accessible to the public, they are under the same PNL administrative controls as wastes that are generated on-site (i.e., in the 300 Area). Additional requirements for wastes generated outside the 300 Area include proper manifesting (if appropriate) to 305-B and proper packaging for transport over public roadways. The waste verification requirement for non-PNL off-site generated wastes; identical to that of Section 8.1 of this plan. Waste verification is limited to visual observation of the waste by Waste Management personnel when it is picked up at the generators site, before acceptance at the unit. Additional waste verification is not necessary for these PNL off-site generated wastes.

8.3 OFF-SITE NON-PNL WASTE VERIFICATION REQUIREMENTS

The scope of the 305-B storage operation does not include the routine receipt and management of waste from off-site non-PNL generators. Such wastes are received, 10% of these containers shall be sampled and analyzed (fingerprint or laboratory) for waste verification. The 10% shall be calculated on a shipment basis. (i.e., the number of containers sampled and analyzed from a specific shipment shall be 10%). If a shipment is less than 10 containers, a minimum of 1 container shall be sampled and analyzed. The sampling and analysis requirements and protocols of Section 6.0 shall be followed. At their discretion, 305-B personnel may request profile samples from the generator before the waste is shipped to the storage unit. If a discrepancy is discovered during any of these analyses (fingerprint or laboratory), the generator is contacted to resolve the discrepancy. If the discrepancy cannot be resolved to the satisfaction of 305-B personnel, the waste is not accepted and sent back to the generator or managed in accordance with the 305-B Contingency Plan if the shipment cannot be shipped safely.

9.0 WASTE ANALYSIS FOR SPILLS AND UNKNOWNS

In the event of a spill or release of DW within 305-B, the following steps will be implemented:

1. The identification number on the leaking container will be determined based on visual inspection. If the container(s) involved cannot be approached, the location of the container involved and the associated storage cell designations can be determined from a distance.

2. The container identification number or container location number will be entered into 305-B inventory database to determine the CDRR number.

3. The hard copy of the CDRR or a computerized information printout for the container will be located, which contains all applicable information regarding the contents of the container. The hazards associated with the waste will be determined before exercising the emergency response procedures outlined in the *305-B Contingency Plan* (Chapter 7.0).

4. Respond to the spill in accordance with the requirements of the *305-B Contingency Plan*.

5. A new CDRR will be filled out using the information from the original CDRR and information from any spill cleanup kits or absorbents. The waste will then be designated and characterized in accordance with Section 4.0.

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If a leak or other liquid is discovered within the 305-B that cannot be tracked to a specific container because of safety or logistics reasons, the procedures outlined in the 305-B contingency plan would be implemented for responding to an "unknown" chemical release. The residues, including cleanup absorbents, of such a release would be sampled and analyzed in accordance with the requirements in Section 4.0 to determine the characteristics of the waste residue as defined by WAC 173-303-070. Sampling and analysis of the residues will include pH, metals, volatile organics, and semi-volatile organics analyses as required by Sections 5.0 and 6.0.

Based on the information gathered from the laboratory analysis, a new CDRR for the waste cleanup will be filled out. The waste will then be designated and characterized in accordance with Section 4.0

10.0 QUALITY ASSURANCE AND QUALITY CONTROL

Pacific Northwest Laboratory is committed to maintaining a high standard of quality for all of its activities. A critical element in maintaining that standard is a quality assurance program that provides management controls for conducting activities in a planned and controlled manner and enabling the verification of those activities. These management controls are documented in internal PNL manuals.

Activities pertaining to waste analysis that are controlled by in PNL internal manuals include, but are not limited to, the preparation, review, and control of procedures and the selection of analytical laboratories. PNL's QA manual has administrative procedures that establish requirements and provide guidance for the preparation of analytical and technical (i.e., sampling, chain-of-custody, work processes) procedures, as well as other administrative procedures. Procedures undergo a review cycle and, once issued, are controlled to ensure that only current copies are used.

The primary purpose of waste testing is to ensure that the waste is properly characterized in lieu of process knowledge data in compliance with RCRA requirements for general waste analysis [WAC 173-303-300(2)] (40 CFR 264.13). Waste testing also is performed to ensure the safe management of waste being stored, proper disposition of residuals from incidents that might occur, and control of the acceptance of waste for storage. The specific objectives of the waste sampling and analysis program at 305-B are as follows:

- Identify the presence of waste that is substantially different from waste currently stored.

- Provide a detailed chemical and physical analysis of a representative sample of the waste, before the waste is accepted at or transferred from 305-B to an off-site TSD facility, to ensure proper management and disposal.

- Provide an analysis that is accurate and up-to-date to ensure that waste is properly treated and disposed of.

- Ensure safe management of waste undergoing storage at 305-B.

- Ensure proper disposal of residuals.

- Ensure compliance with LDRs.

- Identify and reject waste that does not meet 305-B acceptance requirements (i.e., incomplete information).

- Identify and reject waste that does not meet specifications for 305-B (i.e., Part A listing, restricted from storage at 305-B).

10.1 QUALITY ASSURANCE AND QUALITY CONTROL OBJECTIVES

The objectives of the QA/QC program are two-fold. The first objective is to control and characterize any errors associated with the collected data. Quality assurance activities, such as the use of standard procedures for locating and collecting samples, are intended to limit the introduction of error. Quality control activities, such as the collection of duplicate samples and the inclusion of blanks in sample sets, are intended to provide the information required to characterize any errors in the data. Other QC activities, such as planning the QC program and auditing ongoing and completed activities, ensure that the specified procedures are followed and that the QA information needed for characterizing error is obtained.

The second QA/QC objective is to illustrate that waste testing has been performed according to specification in this waste analysis plan. The QA/QC activities will include the following:

- Field inspections--performed by a PNL QA officer or designee, depending on the activity. The inspections primarily are visual examinations but might include measurements of materials and equipment used, techniques employed, and the final products. The purpose of these inspections is to verify that a specific guideline, specification, or procedure for the activity is successfully completed.

- Field testing--performed on the site by the QA officer (or designee) according to specified procedures.

- Laboratory analyses--performed by on-site or off-site laboratories on samples of waste. The purpose of the laboratory analyses is to determine constituents or characteristics present and the concentration or level.

- Checklists--required for critical inspections. Checklists are filled out during the course of inspection to document inspection results.

- Instrument Calibration--required for maintaining records of calibration of all instruments used to perform surveying, field testing, and laboratory analyses.

10.2 DATA QUALITY OBJECTIVES

The data quality objectives (DQOs) for off-site waste testing will include, but not be limited to, the requirements of Section 10.0.

10.3 SAMPLING OBJECTIVES

The DQOs for the waste sampling and data analyses are as follows:

- Determine if waste samples are representative of the contents of the containers at the time the samples were taken.

- Determine if waste samples are representative of long-term operations affecting 305-B.

- Determine if waste accepted for storage is within the RCRA permit application documentation limitations.

- Determine if waste accepted for storage meets the requirements of 305-Bs waste acceptance criteria.

- Determine if waste accepted for storage meets the waste tracking form provided by the generator.

10.4 DATA COLLECTION/SAMPLING OBJECTIVES

The acquired data need to be scientifically sound, of known quality, and thoroughly documented. The DQOs for the data assessment will be used to determine compliance with National Quality Standards, which are as follows:

- Precision-The precision will be the agreement between the collected samples (duplicates) for the same parameters, at the same location, and from the same collection vessel.

- Representativeness-The representativeness will address the degree to which the data accurately and precisely represent a real characterization of the population, parameter variation at a sampling point, sampling conditions,

and the environmental condition at the time of sampling. The issue of representativeness will be addressed for the following points:

- Based on the generating process, the waste stream, and its volume, an adequate number of sampling locations are selected.

- The representativeness of selected media has been defined accurately.

- The sampling and analytical methodologies are appropriate.

- The environmental conditions at the time of sampling are documented.

- Completeness-The completeness will be defined as the ability of the sampling and analytical methodologies to accurately measure the contaminants present in the waste.

- Comparability-The comparability of the data generated will be defined as the data that are gathered using standardized sampling methods, standardized analyses methods, and quality-controlled data reduction and validation methods.

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10.5 ANALYTICAL OBJECTIVES

The data for chemical analyses will meet the EPA quality level III criteria. Data from radiological analyses will meet EPA quality level V criteria.

10.6 FIELD QUALITY ASSURANCE AND QUALITY CONTROL

Internal QA/QC checks will be established by submitting QA and QC samples to the analytical laboratory. The number of field QA samples will be approximately 5% of the total number of field samples taken. The 5% criterion commonly is accepted for a minimum number of QA/QC samples. The types and frequency of collection for field QA samples are as follows:

- Field Blanks--defined as samples of ASTM Type II (or other high purity) water from the same source as water used for decontamination. One field blank will be prepared for each sampling event and analyzed for the same analytes as the samples collected that day. A field blank will be taken each day of sampling, at a minimum. Field blanks are prepared and preserved using sample containers from the same lot as the other samples collected that day. Results of the field blank analyses will help determine the level of contamination introduced into the sample due to sampling technique and as a check of the water used for decontamination.

- Field Replicates--defined as independent samples collected in such a manner that the samples are equally representative of the variables of interest at a given point in space and time. The laboratory will use the field replicate as laboratory replicates and/or matrix spikes. Thus, for the replicate sample, there will be the normal sample analysis, the field replicate, and the laboratory replicate (inorganic analysis). Replicate samples will provide an estimate of sampling precision.

10.7 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

All analytical work, whether performed in-house by PNL's Analytical Chemistry Laboratory or by outside, independent laboratories, is defined and controlled by a Statement of Work, prepared in accordance with administrative procedures in PNL-MA-70. The daily quality of analytical data generated in the analytical laboratories will be controlled by the implementation of an analytical laboratory QA plan. At a minimum, the plan will document the following:

- sample custody and management practices
- sample preparation and analytical procedures
- instrument maintenance and calibration procedures
- internal QA/QC measures including the use of method blanks
- sample preservatives used
- analyses requested.

The types of internal quality control checks are as follows:

- Method Blanks-Method blanks usually consist of laboratory reagent-grade water treated in the same manner as the sample (i.e., digested, extracted, distilled) that is analyzed and reported as a standard sample would be reported.
- Method Blank Spike-A method blank spike is a sample of laboratory reagent-grade water fortified (spiked) with the analytes of interest, which is prepared and analyzed with the associated sample batch.
- Laboratory Control Sample for Inorganics-This is a standard solution with a certified concentration that is analyzed as a sample and used to monitor analytical accuracy (equivalent to a method blank spike).
- Matrix Spikes-A matrix spike is an aliquot of an investigative sample that is fortified (spiked) with a known quantity of the analytes of interest and analyzed with an associated sample batch to monitor the effects of the investigative sample matrix (matrix effects) on the analytical method. Matrix spikes are performed only in association with selected protocols. Matrix spikes will be performed on 5% of the samples (1 in 20) or one per batch of samples, whichever is greater.
- Laboratory Duplicate Samples-Duplicate samples are obtained by splitting a field sample into two separate aliquots and performing two separate analyses on the aliquots. The analyses of laboratory duplicates monitor the precision of the analytical method for the sample matrix; however, they might be affected by nonhomogeneity of the sample, particularly in the case of nonaqueous samples. Duplicates are performed only in association with selected protocols. Laboratory duplicates are performed on 5% of the samples (1 in 20) or one per batch of samples, whichever is greater. If the precision value exceeds the control limit, the sample set must be reanalyzed for the parameter in question.

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- Known QC Check Sample-This is a reference QC sample as denoted by SW-846 of known concentration, obtained from the EPA, the National Institute of Standards and Technology, or an EPA-approved commercial source. This QC sample is to check the accuracy of an analytical procedure. It is particularly applicable when a minor revision or adjustment has been made to an analytical procedure or instrument. The results of a QC check standard analysis are compared with the true values, and the percent recovery of the check standard is calculated.

10.7.1 PNL Analytical Chemistry Laboratory QA/QC

PNL's analytical chemistry laboratory may need to be used to analyze samples of high activity mixed waste. It has a rigorous QA plan that complies with **PNL-MA-70**, which ensures that data produced are defensible, scientifically valid, and of known precision and accuracy, and meets the requirements of its clients, i.e., the 305-B Storage Unit.

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10.7.2 Off-Site Laboratory QA/QC

When it is necessary to send samples to an independent laboratory, contracts are not awarded until a pre-award evaluation of the prospective laboratory has been performed. The preaward evaluation process is specified in **PNL-MA-70** and involves the submittal of its QA plan to the waste analysis project manger and the QA officer for approval. It also may involve a site visit by QA personnel and a technical expert, or may consist of a review of the prospective laboratories' QA/QC documents and records of surveillances/inspections, audits, non-conformances, and corrective actions maintained by PNL or other Hanford contractors.

11.0 RECORDKEEPING

Records associated with the waste analysis plan and waste verification program are maintained by the Waste Mangement organization. A copy of the CDRR for each waste stream accepted at 305-B is maintained as part of the operating record. Generators maintain their sampling and analysis records.

The waste analysis plan will be revised under the following circumstances:

- whenever test methods are changed
- when waste streams or process operations are modified, thus requiring a change in the parameters to be tested
- referenced personnel, organizations, or procedures change
- whenever regulation changes affect the waste analysis plan.

12.0 REFERENCES

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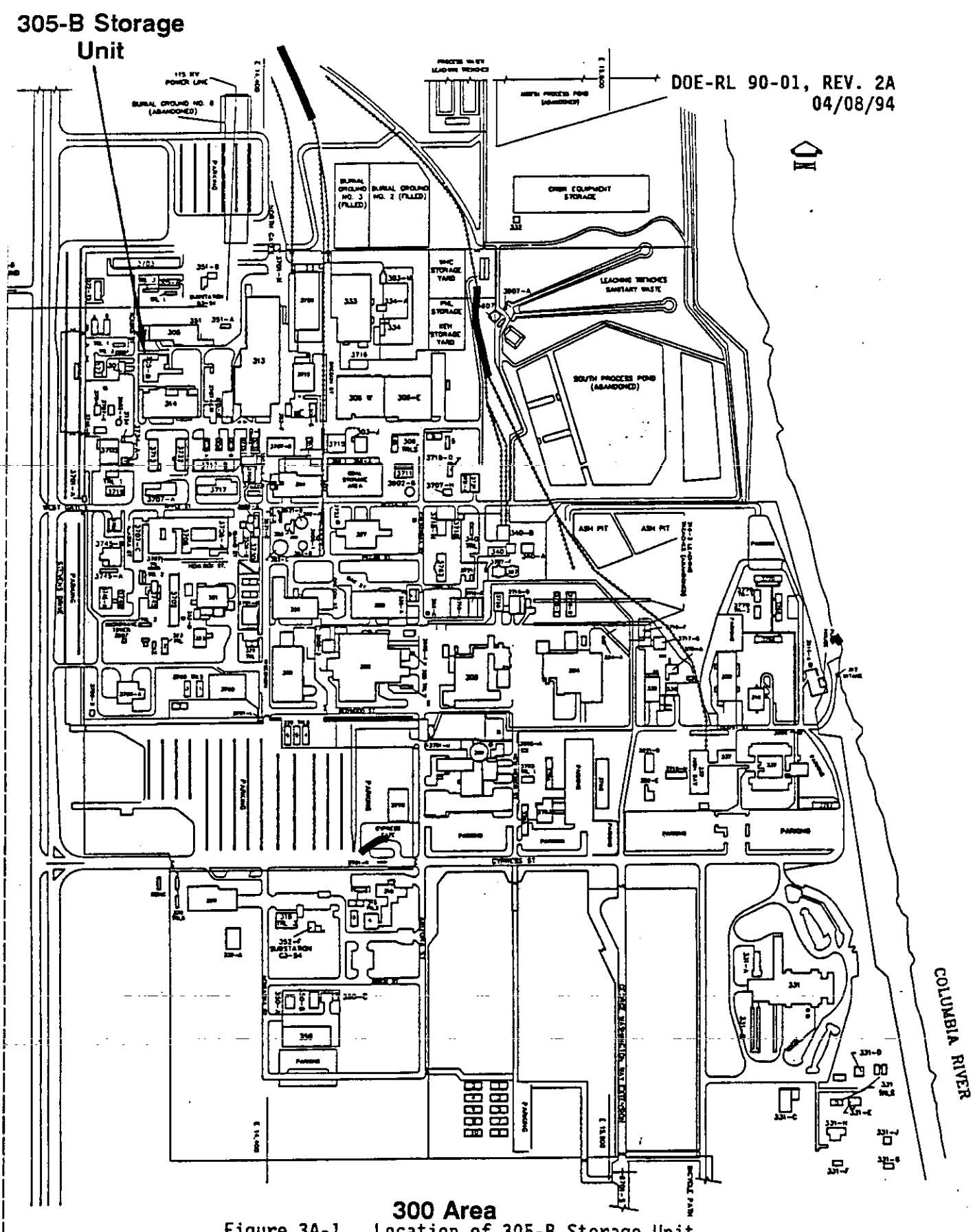

Figure 3A-1. Location of 305-B Storage Unit

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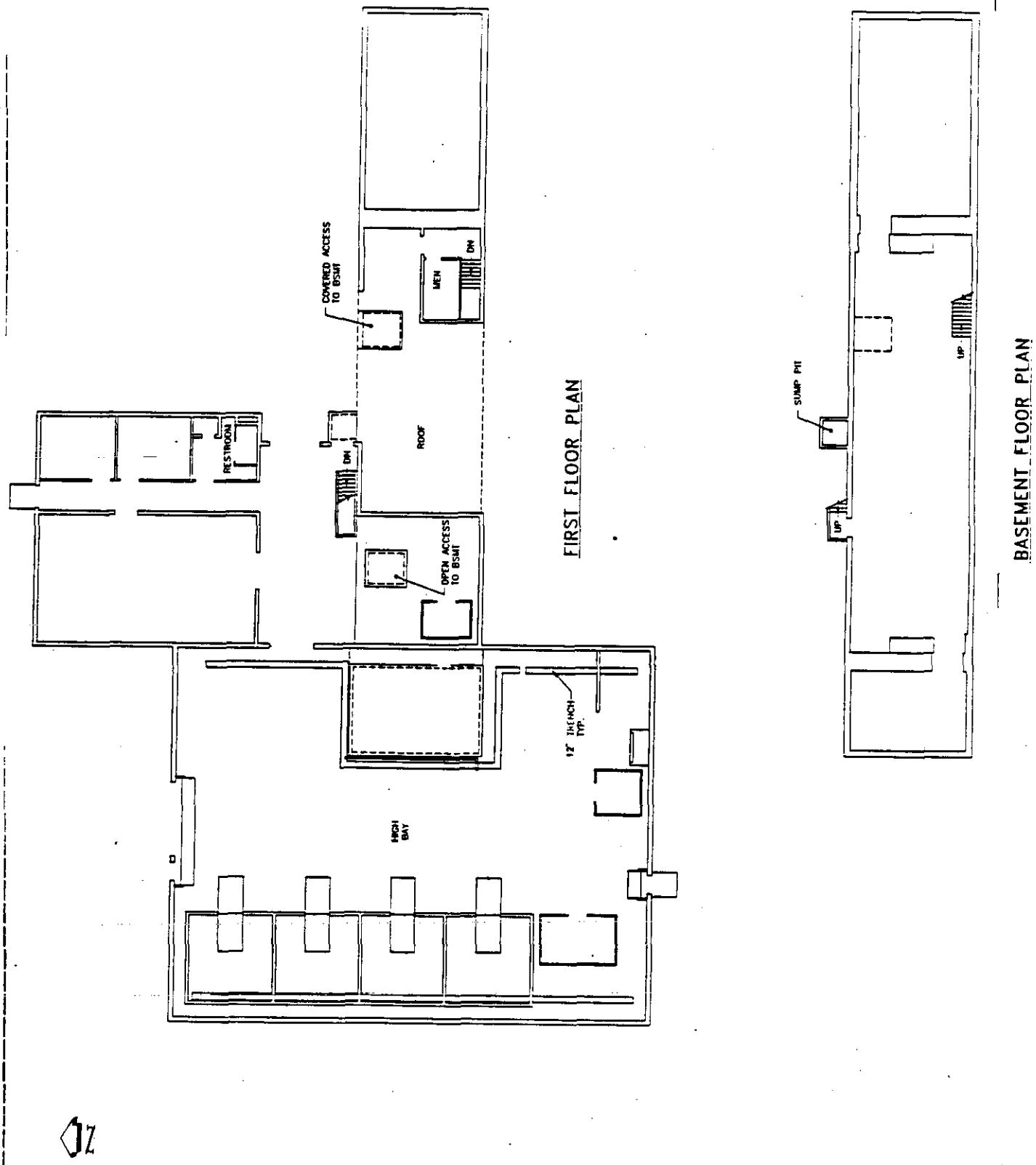
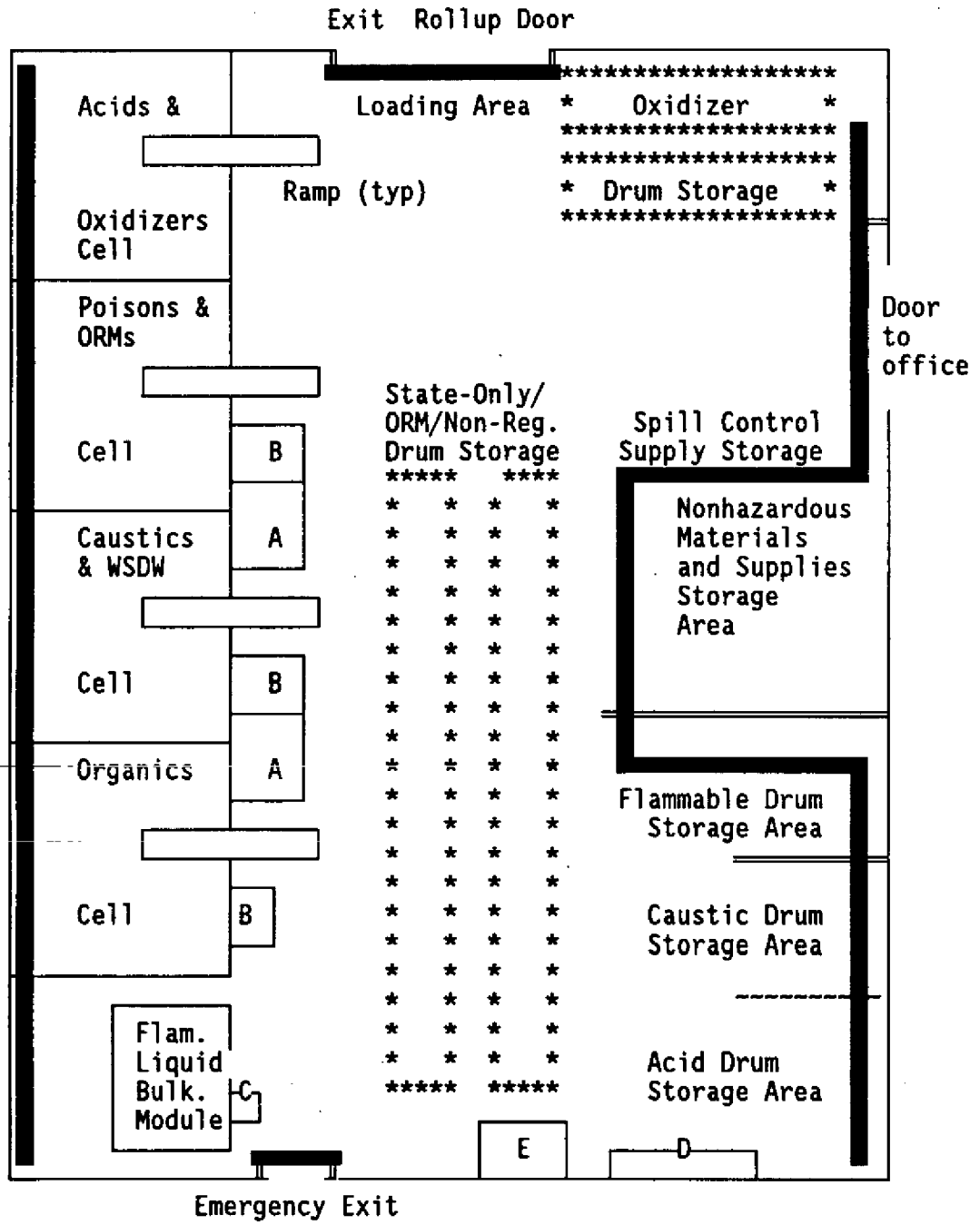


Figure 3A-2. 305-B Storage Unit Floor Plan



Scale: 1"=10' prox.

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Figure 3A-3. High Bay Storage Area. (Page 1 of 2)

LEGEND -- HIGH BAY STORAGE AREA DIAGRAM

***Boundary of palletized drum storage areas

═══ 3½" x 6" angle iron sealed to floor as inflow control to trench (see construction detail, App. 4A, Plate 2)

---- 4'H x 10'L Stainless Steel Splash Wall

■ Secondary containment trenches

A Large Drum Storage Cabinet (flammable labpack or bulked drum storage)

B Small Drum Storage Cabinet (flammable labpack or bulked drum storage)

C Small Storage Cabinet (asbestos)

D Material Handling Hood

E Flammable Liquid Storage Module

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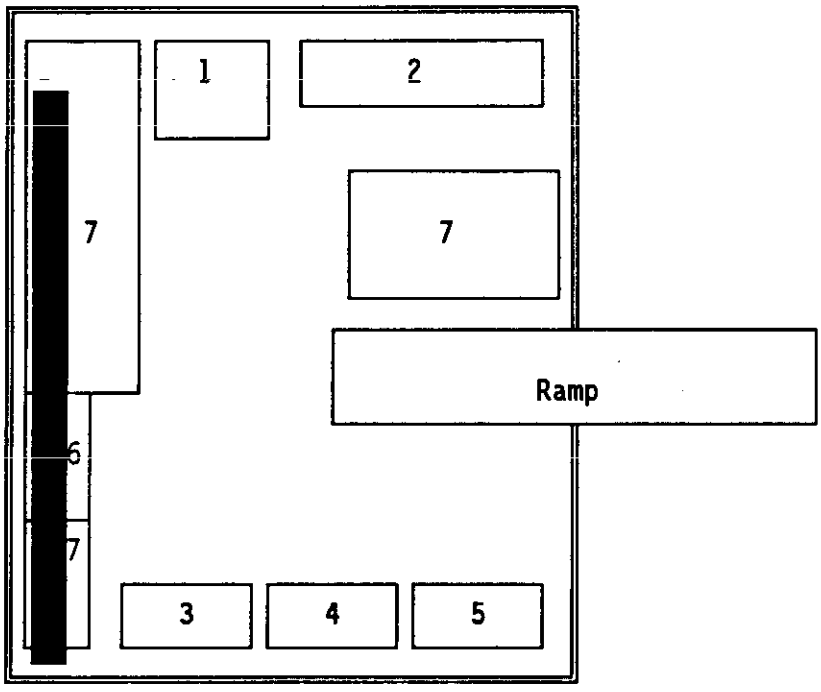


Scale: 1/4" =1' prox.

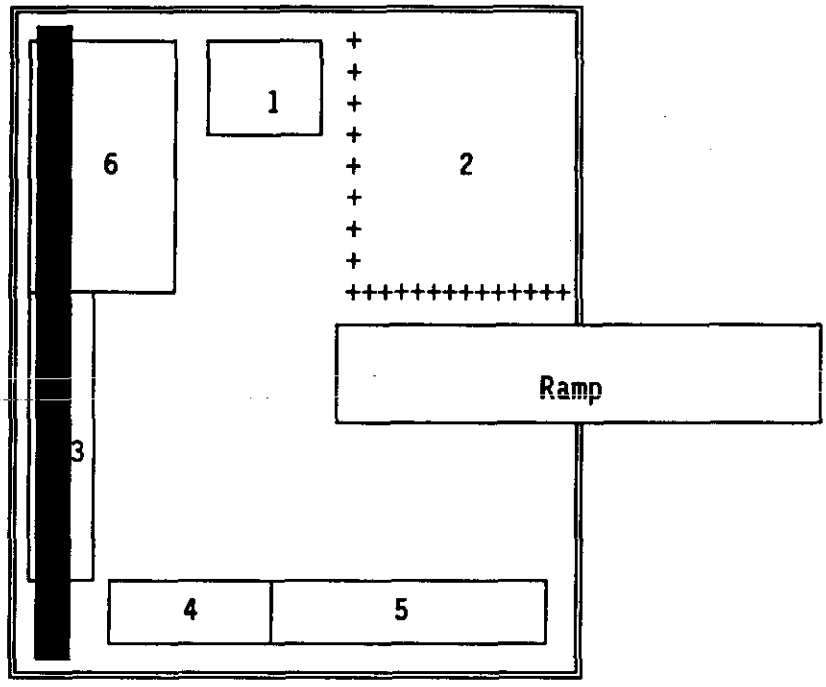
LEGEND

1 Liquid oxidizers & organic peroxides (Large Cabinet)
2 Solid oxidizers & acids (Large Shelf)
3 Inorganic acids (Small Cabinet)
4 Organic acids (Small Cabinet)
5 New acids stored for redistribution (Small Cabinet)
6 Inorganic acids (Small Cabinet)
7 Drum & carboy storage area

‖ 6" concrete block wall (4'2" high, epoxy coated)

▮ Secondary Containment Trench

Figure 3A-4. Acids and Oxidizers Cell.



Scale: 1/4"=1' prox.

LEGEND

1 Poisons (Large cabinet)
2 PCB Storage for Disposal
3 Poisons & ORMs for redistribution (Large shelf)
4 ORMs (Small shelf)
5 ORM-Es (Large shelf)
6 Drum & Carboy Storage Area

‖ 6" concrete block wall (4'2" high, epoxy coated)

\+ 6" high steel curbing (epoxy coated)

▉ Secondary Containment Trench (epoxy coated)

Figure 3A-5. Poisons and ORM Cell.

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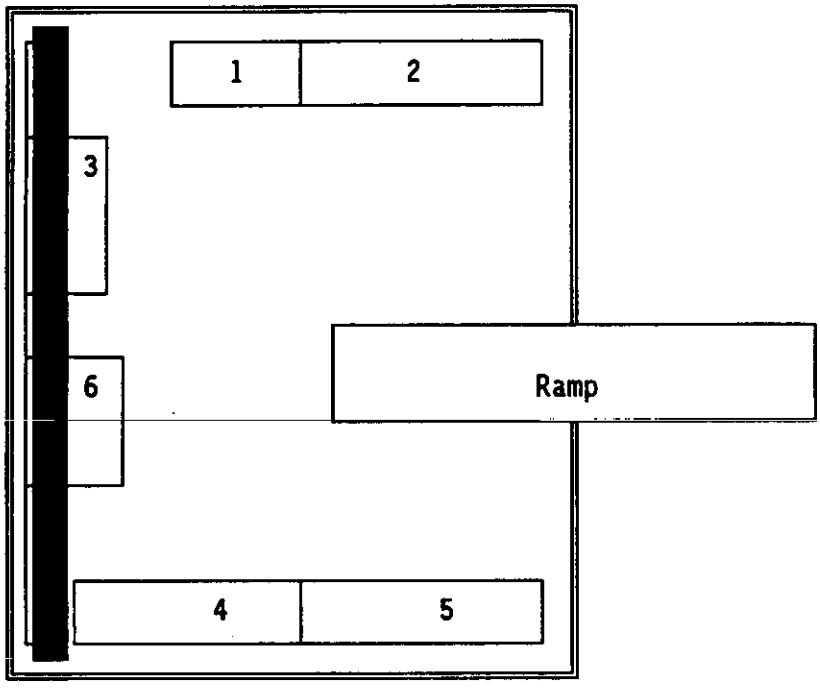


Scale: 1/4"=1' prox.

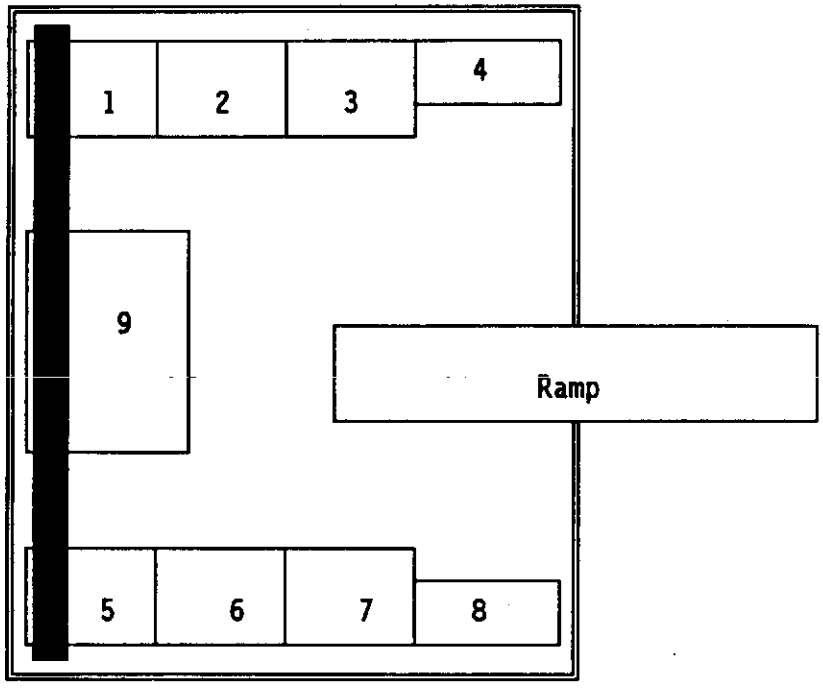
LEGEND

1 Caustics (Small cabinet)
2 Washington dangerous waste (Large shelf)
3 Washington dangerous waste & nonregulated for redistribution (Small cabinet)
4 Washington dangerous waste (Large shelf)
5 Nonregulated (Large shelf)
6 Shock-sensitive waste (20 cu. foot explosion proof refrigerator, 34"w x 28"d x 77"h)

‖ 6" concrete block wall (4'2" high, epoxy coated)

▮ Secondary Containment Trench

Figure 3A-6. Caustics, Washington-Only Wastes, and Non-Regulated Waste Cell.



Scale: 1/4"=1' prox.

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LEGEND

1 Halogenated hydrocarbons (Large cabinet)
2 Flammable/combustible liquids (Large cabinet)
3 Flammable/combustible liquids (Large cabinet)
4 Flammable liquids (Small cabinet) (stored for bulking)
5 Flammable compressed aerosol containers (Large cabinet)
6 Flammable solids (Large cabinet)
7 Organic Liquids for redistribution (combustible, flammable & halogenated) (Small cabinet)
8 Compressed gas cylinders, lecture bottles, (Small cabinet)
9 Drum & Carboy storage areas

‖ 6" concrete block wall (4'2" high, epoxy coated)

▉ Secondary Containment Trench

Figure 3A-7. Organics Cell.

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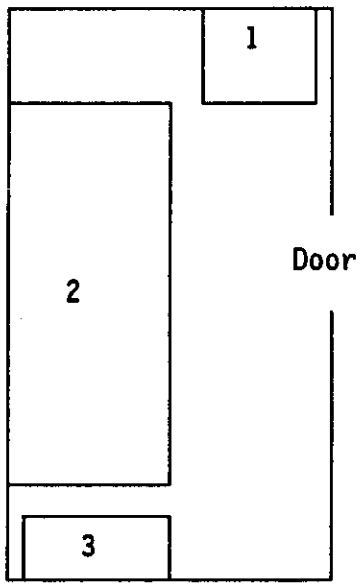

Scale: 1/4"=1' prox.

LEGEND

1 Nontransient drum storage (Small drum cabinet)

2 Walk in hood (flammable liquid bulking, 1 drum max.)

3 Nonflammable compressed gas storage

Figure 3A-8. Flammable Liquids Bulking Module.

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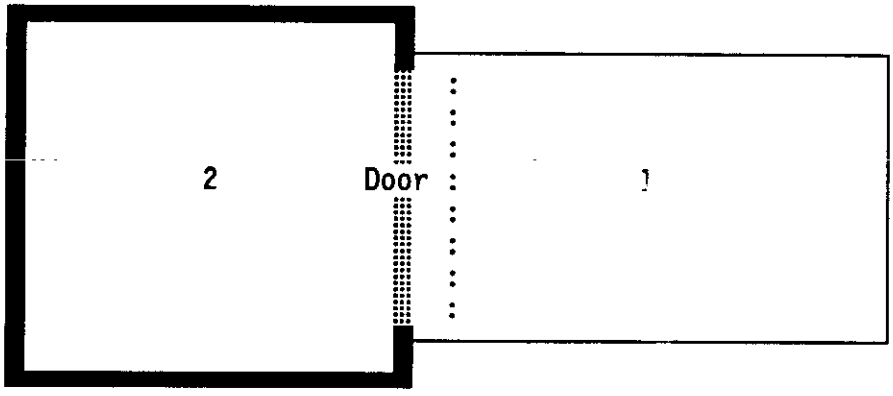
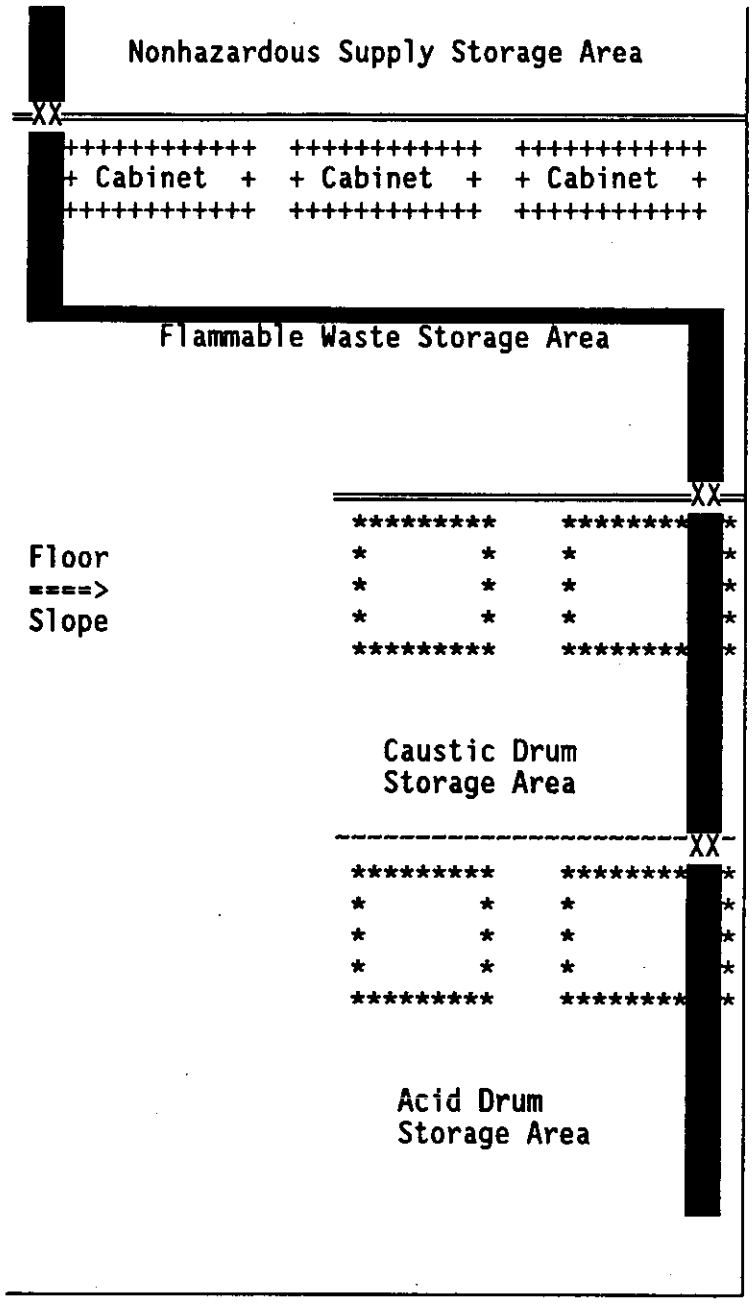


LEGEND

1 Loading Ramp

2 Drum/Container Storage Area (Flammable liquid storage, 240 gallon max.)

Figure 3A-9. Flammable Liquids Storage Module.

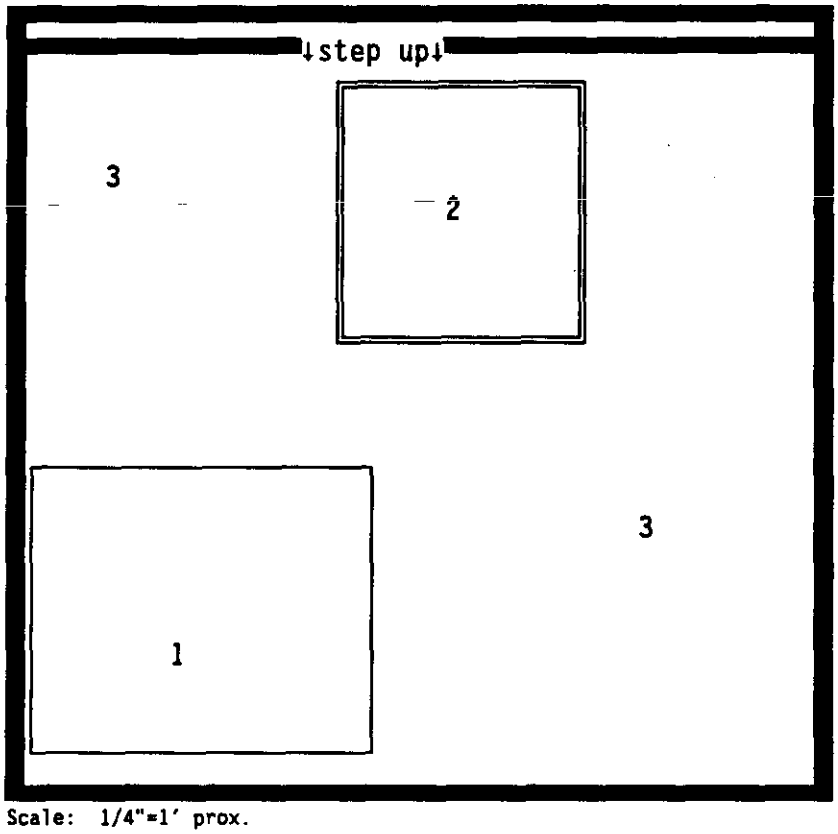


Scale: 1/4"=1' prox.

LEGEND

| Building Wall (4" curb)
+ Large Drum Storage Cabinets
XX Sump Blockages (Epoxy/Concrete)
| Secondary Containment Trench
* Palletized Drum Storage
‖ 3½" x 6" epoxy coated steel spill borders
~~ 4' x 10' L Stainless Steel Splash Wall

Figure 3A-10. Segregated High Bay Drum Storage Areas.



Scale: 1/4"=1' prox.

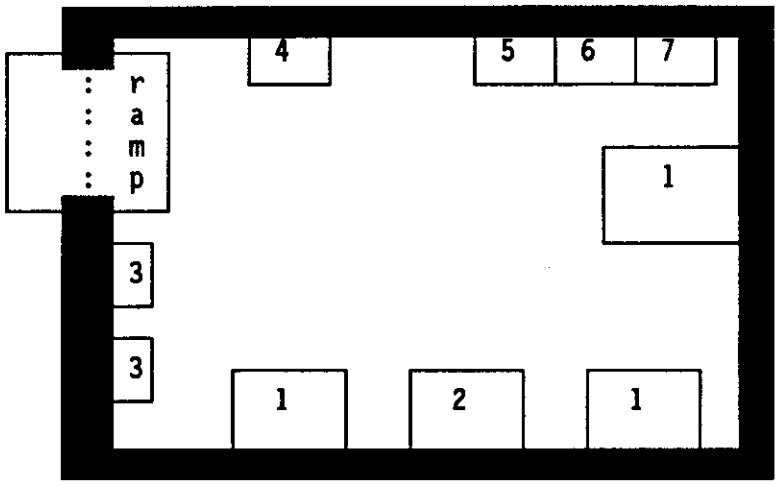
LEGEND

1 Flammable Mixed Waste Storage Module

2 Removable hatch cover for basement access (surrounded by railing)

3 Nonhazardous supplies storage

Figure 3A-11. Flammable Mixed Waste Storage Area.



Scale: 1/8=1' prox.

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LEGEND

- Concrete wall, epoxy sealed continuous with floor, to a height of 12"
- Metal sliding door (radiation & spill protective)
- 1 5'x 5'x 8" deep stainless steel containment pan
- 2 Stainless steel pan for PCB MW storage (6' x 6' x 8" deep)
- 3 Corrosive Storage Cabinet
- 4 Flammable Solids Storage Cabinet
- 5 Washington State Dangerous Waste Storage Cabinet
- 6 Poisons Storage Cabinet
- 7 Oxidizer Storage Cabinet

Figure 3A-12. Mixed Waste Storage Area.

Battelle
Pacific Northwest Laboratories

CHEMICAL DISPOSAL/RECYCLE REQUEST

Page 1 of _____

Received/Approved _____
Request No. _____
Picked Up/Labeled _____
Entered _____

Send Completed Form to:

- 300 Area Nonradioactive Materials: TJ Murphy, 372-2745, P8-45
- 3000 Area Nonradioactive Materials: EL Grohs, 375-6309, K3-69
- Radioactive Mixed Waste: MJ Riese, 372-3517, P7-68

☐ 1830 ☐ 1831 Org. Code: | Work Package No.:

Level 3 Manager Signature/Date:

Technical Contact/Phone No. (if other than Requester)

☐ <90 Day Accumulation ☐ Satellite Accumulation | Accumulation Date for <90 Day Waste (<30 Days for PCB's)

Requested by (printed or typed name): | Telephone No.: | Requester Signature/Date (indicating accuracy of information to the best of my knowledge)

Location of Waste: (Area/Bldg/Rm) | Requester MSIN:

☐ Nonradioactive Material (complete and submit a CWC form for nonrad material);
☐ Radioactive Material (include Curies Quantities Below)

SHADED AREA FOR WM USE ONLY | Complete ALL Applicable Information: Detailed Instructions on Reverse, Continuation Sheets Available | SHADED AREA FOR WM USE ONLY

Container ID	Container			Kilograms of Material per Container	Material Description or Trade Name (b)	Chemical Component (use proper chemical name include isotopes and curies for RMW) (c)	Wt. % (d)	Physical State S/L/M/G (e)	Status (f)	Hazards	WM Waste Codes	
WM No.	Quant.	Size	Type (a)									
										PG I II III D E	O I Loc	
										PG I II III D E	O I Loc	
										PG I II III D E	O I Loc	
										PG I II III D E	O I Loc	
										PG I II III D E	O I Loc	
										PG I II III D E	O I Loc	

A-1060-094 (06/93)

Figure 3A-13. Example Chemical Disposal/Recycle Request Form.

CHEMICAL DISPOSAL/RECYCLE REQUEST (CDRR) INSTRUCTIONS

General Instructions:

- Fill out ALL blanks correctly and completely.
- Type or print neatly. Forms must be typed or completed in blue or black ink.
- A work package number needs to be included for all 1831 (private) waste and as requested for other special cases (e.g., compressed gas cylinders, lecture bottles, etc.).
- Do not write in shaded areas, these are for Waste Management use only.
- Do not fill in an accumulation date if the waste is in a satellite accumulation area.
- Do not include both satellite accumulation wastes and <90 day wastes on the same CDRR form. Use separate forms.
- Do not include both 1830 and 1831 wastes on the same CDRR form.
- Do not include both nonradioactive chemical wastes and radioactive mixed waste on the same CDRR form.
- Do not include both 300 and 3000 area wastes on the same CDRR form.
- For any materials analyzed, please attach a copy of the analytical report.
- Please feel free to use several lines per item, as necessary, to include any and all important information on the material.
- More than one waste container may be entered on the same line ONLY if they contain identicial waste compositions.

Specific CDRR Instructions:

(a) Metal = tin, steel, aluminum, etc.; Poly = plastic, teflon, carboy, etc.; Fiber = paper, cloth, cardboard; Drum = any DOT approved metal drum; Glass = glass.

(b) Provide a complete description of the material for disposal. For corrosive material include the pH, for flammable materials include the flashpoint (FP). For trade name items, attach a material safety data sheet (MSDS). For items analyzed, attach a copy of the analysis. Also include any additional information on material or process if any (e.g., CAS number, RTEC number).

(c) Provide all known chemical components; use proper accepted names (e.g., ethyl alcohol is acceptable; abbreviations or formulas are not).

(d) Enter weight percent for all known chemical components; this must add up to 100% for each item, unless the information is proprietary (as indicated on an attached MSDS). Trace amounts of metals, cyanides, sulfides, PCBs, phenolics, and other highly toxic materials must be specified.

(e) Please indicate physical state of material: S = solid, L = liquid, M = gas, G = sludge.

(f) Please enter container/material status from codes shown below (state all that apply):

F = full	TR = triple rinsed	O = old	S = spill material
PF = partially full		N = new (unused material)	
MT = empty		R = recyclable condition (unopened, or opened but in excellent condition)	

Requirements for Material Pickup by Waste Management:

In order to facilitate material pickup by Waste Management, please do the following:

- Complete ALL required information on the CDRR form.
- Send in originals only. No copies of requests will be accepted.
- Ensure that all materials are in screw-cap glass, metal, or plastic containers that are compatible with the waste (sealed containers which the material originally came in are acceptable, also, e.g., glass ampules or metal paint cans). Ground glass, rubber stoppers, or taped seals will not be accepted.
- Have a Chemical Waste Certification form filled out and signed by a PNL Radiation Protection Technologist showing that the material has been surveyed and released (1 or 2 days prior to scheduled pickup).
- Each individual container must have marking or labeling on them that clearly identify 100% of their contents and their chemical hazards (if container is too small to label with all constituents please attach tag or other listing).

*If you have questions, please refer to PNL-MA-8, "Waste Management and Environmental Compliance," for hazardous waste issues and PNL-MA-43, "Health and Safety Management," for chemical hazard labeling requirements.

A-1060-094R (06/93)

Figure 3A-13. Example Chemical Disposal/Recycle Request Form (Reverse).

WASTE MATERIAL DATA SHEET

A GENERAL INFORMATION

ENSCO CLIENT — Invoice Address ☐ Cert Address ☐ N/A ☐

Contact _____ _____
Customer Name _____ _____
Address _____
City _____
State _____ Zip _____
Phone # _____
USEPA ID# _____

SHIPPING FACILITY — Invoice Address ☐ Cert Address ☐ N/A ☐

Contact _____
Facility Name _____
Address _____
City _____
State _____ Zip _____
Phone # _____
USEPA ID # _____

B WASTE DESCRIPTION

NAME OF WASTE _____ Is a representative sample provided? Yes ☐ No ☐
PROCESS GENERATING WASTE _____ Sample Purchase order No. _____
Sample will not be processed without P.O. Number.

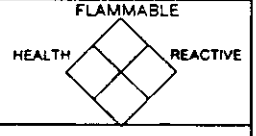
C GENERAL CHARACTERISTICS (at 70° F unless otherwise specified)

COLOR _____ ☐ LIQUID _____ %
ODOR _____ ☐ SOLID _____ %
☐ NONE ☐ STRONG ☐ SLUDGE _____ %
☐ MILD ☐ POWDER _____ %

PHASES
☐ SINGLE LAYER
☐ DOUBLE LAYER
☐ MULTI-LAYER

D NFPA HAZARD CODE

Enclose copies of safety data sheets applicable to waste. Include data constituents of waste and materials used in process.



E SPECIAL HANDLING INSTRUCTIONS If special handling techniques are required, specify: _____

F RCRA INFORMATION

Is this a USEPA hazardous waste?
Please give USEPA hazardous waste codes:
(include state waste codes in this section)

_____ _____ _____ _____
_____ _____ _____ _____

Describe nature of reactivity if D003 waste:
_____

G SHIPPING INFORMATION DOT hazardous material

PROPER SHIPPING NAME _____
_____
HAZARD CLASS _____ ID # _____ R/Q _____
ANTICIPATED SHIPPING VOLUME _____ GAL. _____ YDS. _____ LBS.
_____ DRUM(S), BULK TANK TRUCK RAIL
☐ ONE TIME ☐ WK ☐ MO ☐ YR OTHER _____
Type and size of container: _____
WT PER CONTAINER: _____ WT PER GALLON: _____

H PHYSICAL CHEMICAL PROPERTIES

1 SPECIFIC GRAVITY
☐ <0.8 ☐ 1.4-1.7
☐ 0.8-1.0 ☐ >1.7
☐ 1.0-1.2 ☐ _____ actual
☐ 1.2-1.4

2 VISCOSITY (centipoise)
☐ 1-100 ☐ _____ actual
☐ 100-1000
☐ 1000-10,000
☐ > 10,000

3 ASH (%WT)
☐ <0.1
☐ 0.1-1.0
☐ 1.0-5.0
☐ 5.0-20 ☐ _____ actual
☐ >20

4 TOTAL SUSPENDED SOLIDS (%WT)
☐ <0.5 ☐ > 20
_____ actual
☐ 0.5-2.0
☐ 2.0-5.0
☐ 5.0-20

5 pH
☐ <2 ☐ > 12.5
_____ actual
☐ 2-6
☐ 6-8
☐ 8-10
☐ 10-12.5
_____ constituent

6 BTU's 1000/lbs.
☐ <1 ☐ 12-16
☐ 1-4 ☐ >16
☐ 4-6 _____ actual
☐ 6-8
☐ 8-12

7 FLASHPOINT (closed cup)
☐ <100° F ☐ >200° F
☐ 100-140° F _____ actual
☐ 140-200° F

8 SULFUR (%WT)
☐ <0.5 ☐ >5
☐ 0.5-2.0 _____ actual
☐ 2-5

9 HALOGENS (%)
Chlorine ____ Fluorine ____
Bromine ____ Iodine ____

10 ARE METAL OBJECTS PRESENT IN THE WASTE?
Y ☐ N ☐
IF YES, DESCRIBE IN SECTION I.

11 HAZARDOUS CHARACTERISTICS AND OTHER COMPONENTS—None of the following characteristics are present unless checked: ☐ Explosive ☐ Pyrophoric ☐ Shock Sensitive ☐ Fuming/Smoking Waste
☐ Water Reactive ☐ Air Reactive ☐ Radioactive ☐ Biological ☐ Asbestos
Cyanides _____ (ppm) PCB's _____ (ppm) ☐ Acutely Hazardous Waste
Sulfides _____ (ppm) Phenolics _____ (ppm) ☐ Dioxins & Furans

12 METAL ☐ TOTAL (PPM) ☐ TCLP (mg/L)
Antimony (Sb) _____
Arsenic (As) _____
Barium (Ba) _____
Beryllium (Be) _____
Cadmium (Cd) _____
Chromium (Cr) _____
Copper (Cu) _____
Lead (Pb) _____
Mercury (Hg) _____
Nickel (Ni) _____
Selenium (Se) _____
Silver (Ag) _____
Thallium (Th) _____
Zinc (Zn) _____
Other (Specify) _____
All Blanks Must Be Completed
If metal(s) is/are not present, indicate "None"

I CHEMICAL COMPOSITION (If actual percentages are not known use ranges)
Total should be at least 100%. All constituents, including debris, must be specifically identified.

	Actual	Range	CAS Number
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____
_____	____%	____–____%	_____

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE, AND THAT ALL KNOWN OR SUSPECTED HAZARDS INCLUDING THE PRESENCE OF METAL OBJECTS AS A CONSTITUENT OF THE WASTE HAVE BEEN DISCLOSED

AUTHORIZED SIGNATURE _____ PRINT NAME _____ TITLE _____ DATE _____

ENSCO USE ONLY
RECERTIFICATION DATE _____

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6/92

Figure 3A-14. Waste Profile Sheet

Table 3A-1. Storage Devices Used at the 305-B Unit.

Storage Device	Typical Use	Dimensions (in.)	Capacity (gal.)
Small Cabinet	Storage of containers (5 gallons or less capacity)	39w x 16d x 61h	50 max
Large Cabinet	Storage of containers (5 gallons or less capacity)	31w x 33d x 61h	80 max
Small Drum Cabinet	Storage of drums (5 to 55 gallons capacity)	32w x 32d x 61h	65 max
Large Drum Cabinet	Storage of drums (5 to 55 gallons capacity)	56w x 32d x 61h	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

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Table 3A-2. References to Determine Compatibility and Hazard Designation.

1. Condensed Chemical Dictionary, 11th Ed., Hawley, 1987.

2. The Merck Index, 11th Edition, 1989.

3. Registry of Toxic Effects of Chemical Substances, U.S. Department of Health, Education, and Welfare. National Institute for Occupational Safety and Health.

4. The Sigma-Aldrich Library of Chemical Safety Data, 2nd Edition, R. E. Lenga, Ed., 1988.

5. NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, 1985.

6. Handbook of Toxic and Hazardous Chemicals and Carcinogens, Second Edition, Marshall Sittig, Noyes Publications, Park Ridge, New Jersey, 1985.

7. A Method for Determining the Compatibility of Hazardous Wastes, EPA-600/2-80-076, U.S. Environmental Protection Agency, Cincinnati, Ohio, 1980.

8. CRC Handbook of Chemistry and Physics.

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Table 3A-3. Summary of Test Parameters, Rationales, and Methods.

Waste Type	Parameter	Rationale	Test Method
Spent halogenated solvent mixtures	Halogenated hydrocarbon content	Persistent dangerous waste per WAC 173-303-084(6)	WDOE persistence testing
	Flash point	Ignitable waste per WAC 173-303-090(5); Flammable waste storage limits	Pensky-Martens closed cup
			Setaflash closed cup
	Halogenated organic compounds	Land disposal restrictions for solvent and California Listed wastes	TCLP leachate
			Volatile organic compounds by GC/MS
			Semivolatile organic compounds by GC/MS
	PCB content	Land disposal restrictions for California List wastes	TCLP leachate
			PCBs by GC
Spent nonhalogenated solvent mixtures	Flash point	Ignitable waste per WAC 173-303-090(5); Flammable waste storage limits per UFC	Pensky-Martens closed cup
			Setaflash closed cup
	PCB content	Land disposal restrictions for California List wastes	TCLP Leachate
			PCBs by GC
Waste oils	Flash point	Ignitable waste per WAC 173-303-090(5); flammable waste storage limits; flammable waste oil subject to requirements under WAC 173-303-515 when burned for energy recovery	Pensky-Martens closed cup
			Setaflash closed cup

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Table 3A-3. (Contd)

Waste Type	Parameter	Rationale	Test Method
Waste oils (continued)	PCB content	PCB contaminated wastes with less than 50 ppm PCB may be listed under WAC 173-303-9904; Waste oil with greater than 2 ppm PCB subject to requirements under WAC 173-303-515 when burned for energy recovery	PCBs by GC
	EP toxicity	EP toxic characteristic waste per WAC 173-303-090(8); Waste oil with elevated levels of As, Cd, Cr, Pb subject to requirements under WAC 173-303-515 when burned for energy recovery	EP metals by AA
	Halogenated hydrocarbon content	Persistent dangerous waste per WAC 173-303-084(6); Waste oil with elevated halogens subject to WAC 173-303-510 or -515 when burned for energy recovery	WDOE persistence testing
Aqueous waste	Corrosivity	Corrosive characteristic waste per WAC 173-303-090(6), Land disposal restrictions for California List wastes	pH measurement; steel corrosion rate
	Reactivity	Reactive characteristic waste per WAC 173-303-090(7)	Sulfide - iodometric Cyanide - colorometric
	Toxicity Characteristic	Characteristic waste per WAC 173-303-090(8), Land disposal restrictions for California List wastes	TCLP Leachate EP metals by AA Pesticides by GC

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Table 3A-3. (Contd)

Waste Type	Parameter	Rationale	Test Method
Aqueous Waste (continued)	Toxicity	Toxic waste mixtures per WAC 173-303-084(5)	Metals by ICP Volatile organic compounds by GC/MS Semivolatile organic compounds by GC/MS Toxicity tests
Organic waste	Flash point	Ignitable waste per WAC 173-303-090(5); Flammable waste storage limits	pensky-Martens closed cup Setaflash closed cup
	Toxicity	Toxic waste mixtures per WAC 173-303-084(5)	Volatile organic compounds by GC/MS Semivolatile organic compounds by GC/MS Toxicity tests
	Halogenated hydrocarbon content	Persistent dangerous waste per WAC 173-303-084(6)	WDOE persistence testing
	Polycyclic aromatic hydrocarbon content	Persistent dangerous waste per WAC 173-303-084(6)	WDOE persistence testing

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Tabl 3A-3. (Cont'd).

Waste Type	Parameter	Rationale	Test Method
Organic waste (continued)	PCB content	PCB contaminated wastes with less than 50 ppm PCB may be listed under WAC 173-303-9904	PCBs by GC
	Halogenated organic compounds	Land disposal restrictions for solvent and California List wastes	TCLP leachate Volatile organic compounds by GC/MS Semivolatile organic compounds by GC/MS
	Free liquids	Land disposal restrictions for liquid wastes	Paint filter test
Unknown solid waste	Corrosivity	Corrosive characteristic waste per WAC 173-303-090(6)	pH measurement
	Reactivity	Reactive characteristic waste per WAC 173-303-090(7)	Impact apparatus
	TCLP toxicity	TCLP toxic characteristic waste per WAC 173-303-090(8)	TCLP leachate EP metals by AA Pesticides by GC
	Toxicity	Toxic waste mixtures per WAC 173-303-084(5)	Metals by ICP Volatile organic compounds by GC/MS Semivolatile organic compounds by GC/MS Toxicity tests

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Table 3A-3. (Cont'd).

Waste Type	Parameter	Rationale	Test Method
Unknown Solid Waste (continued)	PCB content	PCB contaminated wastes with less than 50 ppm PCB may be listed under WAC 173-303-9904	PCBs by GC
	Halogenated organic compounds	Land disposal restrictions for solvent and California List wastes	TCLP leachate Volatile organic compounds by GC/MS Semivolatile organic compounds by GC/MS
	Free liquids	Land disposal restrictions for liquid wastes	Paint filter test

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Table 3A-4. Sample/Container Compatibility.

Sample	Container		
	Plastic	Glass	Metal
Acids (except HF)	*	*	
HF	*		
Alkalies	*	*	
Solvents/Solvent Contaminated Oils	*[1]	*	*
Oils	*	*	*
Solids	*	*	*
Aqueous Wastes	*	*	

*Sample compatible for storage in this type of container.
[1]Polypropylene may be used with some solvent/solvent oil wastes.

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Table 3A-5. Sampling Methods and Equipment.

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

*COLIWASA = composite liquid waste sampler device.

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Table 3A-6. Analytical Methodology Specified for Generator Waste.
(sheet 1 of 3)

Parameter and method		Reference (EPA 1986 unless otherwise specified)
CHARACTERISTICS:		
Flash point	Pensky-Martens closed-cup method	1010
Flash point	Setaflash[a] closed-cup method	1020
Corrosivity	pH meter or pH paper	9040 and 9041
Heavy metals	Toxicity characteristic leaching procedure	1311
INORGANIC TECHNIQUES:		
Acid digestion procedure for flame atomic absorption spectroscopy		3010
Acid digestion procedure for furnace atomic absorption spectroscopy		3020
Acid digestion of oils, greases, or waxes		3040
Acid digestion of sludge		3050
Alkaline digestion		3060
ORGANIC TECHNIQUES:		
Separation funnel liquid, liquid extraction		3510
Continuous liquid, liquid extraction		3520
Acid-base cleanup extraction		3530
Soxhlet extraction		3540
Sonication extraction		3550
INORGANIC ANALYTICAL METHODS:		
Antimony		
	Atomic absorption, direct aspiration method	7040
	Atomic absorption, graphite hydride method	7041
Arsenic		
	Atomic absorption, furnace method	7060
	Atomic absorption, gaseous hydride method	7061
Barium		
	Atomic absorption, direct aspiration method	7080
	Atomic absorption, furnace method	7081
Beryllium (reserved)		
	Atomic absorption, direct aspiration method	7090
	Atomic absorption, furnace method	7091
Cadmium (8.54)		
	Atomic absorption, direct aspiration method	7130
	Atomic absorption, furnace method	7131

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Table 3A-6. Analytical Methodology Specified for Generator Waste.
(sheet 2 of 3)

Parameter and method	Reference (EPA 1986 unless otherwise specified)
Chromium	
Atomic absorption, direct aspiration method	7190
Atomic absorption, furnace method	7191
Hexavalent chromium, co-precipitation	7195
Hexavalent chromium, calorimetric	7196
Hexavalent chromium, chelation-extraction	7197
Hexavalent chromium, differential pulse polargraphy	7198
Copper	
Atomic absorption, direct aspiration method	7210
Atomic absorption, furnace method	7211
Lead	
Atomic absorption, direct aspiration method	7420
Atomic absorption, furnace method	7421
Mercury	
In liquid waste (manual cold vapor technique)	7470
In solid or semisolid waste (manual cold vapor technique)	7471
Nickel	
Atomic absorption, direct aspiration method	7520
Atomic absorption, furnace method	7521
Osmium	
Atomic absorption, direct aspiration method	7550
Atomic absorption, furnace method	7551
Selenium	
Atomic absorption, direct aspiration method	7740
Atomic absorption, furnace method	4441
Silver	
Atomic absorption, direct aspiration method	7760
Atomic absorption, furnace method	7761
Thallium	
Atomic absorption, direct aspiration method	7840
Atomic absorption, furnace method	7841
Vanadium	
Atomic absorption, direct aspiration method	7910
Atomic absorption, furnace method	7911
Zinc	
Atomic absorption, direct aspiration method	7950
Atomic absorption, furnace method	7951

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Table 3A-6 Analytical Methodology Specified for Generator Waste.
(sheet 3 of 3)

Parameter and Method	Reference (EPA 1986 unless otherwise specified)
ORGANIC ANALYTICAL METHODS:	
Gas chromatographic methods	
Halogenated volatile organics	8010
Nonhalogenated volatile organics	8150
Aromatic volatile organics	8020
Acrolein, acrylonitrile, and acetonitrile	8030
Phenols	8040
Phthalate esters	8060
Organochloride pesticides and polychlorinated biphenyls	8080
Nitroaromatics and cyclic ketones	8090
Polynucleararomatic hydrocarbons	8100
Chlorinated hydrocarbons	8120
Organophosphate pesticides	8140
Chlorinated herbicides	8150
Gas chromatographic/mass spectroscopy (GC/MS) methods	
GC/MS method for volatile organics	8240
GC/MS method for semivolatile organics packed column technique	8270
GC/MS method for semivolatile organics: capillary column technique	8250
MISCELLANEOUS ANALYTICAL METHODS:	
Total and amenable cyanide	9010
Total organic halides	9020
Sulfides	9030
Fish toxicity, static acute fish toxicity text	Ecology 80-12 Part A[b]
Rat toxicity, acute oral rat toxicity test	Ecology 80-12 Part B[b]
Halogenated hydrocarbons	Ecology 83-13[c]
Polycyclic aromatic hydrocarbons	Ecology 83-13[c]

[a]Setaflash is a trademark of ERDCO Engineering Corporation.
[b]Ecology (1980).
[c]Ecology (1982).

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APPENDIX 8A

305-B PERSONNEL LISTING

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305-B UNIT OPERATIONS PERSONNEL

TITLE	NAME	WORK PHONE
Unit Operating Supervisor	K. S. (Kyle) Webster	376-7688
MW Management Engineer	M. J. (Mark) Riess	372-3517
Waste Management Engineer	G. M. (Gregg) Bartel-Bailey	376-4189
Waste Management Engineer	S. P. (Sam) Juracich	372-0524
Waste Management Specialist	E. L. (Gene) Grohs	376-4293
Waste Management Specialist	J. E. (Jim) Gose	372-0533
Waste Management Technician	J. R. (Joel) Tanasse	376-0272
Waste Management Technician	M. J. (Matt) Sollender	375-6335
Waste Management Technician	H. K. (Heidi) Schnebly	372-2745
Waste Management Clerk	C. A. (Crescence) Morris	375-6327
Waste Management Clerk	V. (Veronica) Skinner	376-1845

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CONTENTS

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14.0 CERTIFICATION [K]

The following certification, required by WAC 173-303-810(13), for all applications and reports submitted to Ecology is hereby included:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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_____ _____

Co-Operator
William R. Wiley, Director
Pacific Northwest Laboratory

Date

_____ _____

Owner/Operator
John D. Wagoner, Manager
U.S. Department of Energy,
Richland Operations Office

Date

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04/11/94

HANFORD SITE COMMENTS ON THE SECOND DRAFT OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF DANGEROUS WASTE FOR THE HANFORD FACILITY

ATTACHMENT 21

DRAFT HSWA PORTION OF RCRA PERMIT WITH LINE NUMBERS (FOR COMMENT REFERENCE)

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HAZARDOUS AND SOLID WASTE AMENDMENTS PORTION OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF HAZARDOUS WASTE

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE, HW-112
SEATTLE, WASHINGTON
(206) 553-1261

Issued in accordance with the applicable provisions of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and the regulations promulgated thereunder in Title 40 of the Code of Federal Regulations.

ISSUED TO: *U.S. DEPARTMENT OF ENERGY*
RICHLAND OPERATIONS OFFICE
825 JADWIN AVENUE
RICHLAND, WASHINGTON 99352
EPA I.D. Number: WA7 89000 8967

This permit is effective as of _____, and shall remain in effect until_____, unless revoked and reissued (40 CFR § 270.41), terminated (40 CFR § 270.43), or continued in accordance with 40 CFR § 270.51.

ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY

_____ _____
Randall F. Smith, Director **Date**
Hazardous Waste Division,
Environmental Protection Agency
Region 10

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TABLE OF CONTENTS

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INTRODUCTION

Permittee: US Department of Energy
EPA I.D. No.: WA7 89000 8967

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 et seq., commonly known as "RCRA"), and the Hazardous and Solid Waste Amendments of 1984 ("HSWA"), and regulations promulgated thereunder by the U.S. Environmental Protection Agency ("EPA"), which are codified and, to be codified in Title 40 of the Code of Federal Regulations ("CFR"), a HSWA permit is issued to the U.S. Department of Energy (hereinafter called the "Permittee"), who owns and operates a dangerous waste treatment, storage and disposal facility located at Richland, Washington.

This HSWA Permit issued in accordance with 40 CFR § 271.19(f) and in conjunction with the Dangerous Waste Portion of the RCRA Permit for the Treatment, Storage, and Disposal of Dangerous Waste (Dangerous Waste Permit), issued by the Washington State Department of Ecology, constitutes the RCRA permit for this facility. Use of the term "Permit" within the HSWA Permit shall refer to the HSWA Permit while use of the term "Permit" in the Dangerous Waste Permit shall refer to the Dangerous Waste Permit.

The Permittee, pursuant to this Permit, shall be required to investigate any releases or potential for release of hazardous waste or hazardous constituents from any Solid Waste Management Unit ("SWMU") at the facility, regardless of the time at which waste was placed in such unit. The Permittee shall be required to take corrective action for any such releases on-site and/or off-site where necessary to protect human health and the environment. The Permittee shall also be required to comply with all land disposal restrictions applicable to this facility as set forth in the Hanford Federal Facility Agreement and Consent Order ("FFACO"), and to certify annually that on-site generation of hazardous waste is minimized to the extent practicable.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein and applicable regulations contained in 40 CFR Parts 124, 260 through 264, 266, 268, and 270. Nothing in this permit shall preclude the Administrator from reviewing and modifying the permit at any time during its term in accordance with 40 CFR § 270.41.

Applicable federal regulations are those which are in effect on the date of final administrative action on this permit and any self-implementing statutory provisions and related regulations

which, according to HSWA, are automatically applicable to the Permittee's dangerous waste management activities, notwithstanding the conditions of this permit.

This permit is based on the administrative record and the assumption that information and reports submitted by the Permittee prior to and subsequent to issuance of this permit are accurate. Any inaccuracies found in this information may be grounds for termination or modification of this permit, in accordance with 40 CFR §§ 270.41, 270.42, and 270.43, and potential enforcement action. The Permittee must inform EPA of any deviation from or changes in the information contained in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions or which may affect substantive provisions of the permit.

During the lifetime of this permit, the state of Washington may become authorized pursuant to Section 3006 of RCRA, as amended, 42 U.S.C. § 6926, to issue the HSWA portion of RCRA Permits. This authorization shall not change the conditions of this permit in any substantive manner. However, any citations to federal statutes or regulations shall become citations to equivalent state statutes or regulations. Any citations to the Agency and the Department, or to the Administrator and the Director, shall become citations to the Department and the Director. Upon delegation of the Corrective Action requirements of HSWA by the Agency to the Department, the RCRA permit shall be modified to incorporate the specific requirements of the HSWA permit into the Department's Dangerous Waste Permit. This modification shall be considered a Class 3 modification in accordance with Dangerous Waste Permit Condition I.C.3. The Agency shall maintain an oversight role of the state authorized program and, in such capacity, may enforce any Federally-required permit condition based on equivalent state requirements if, in the Agency's judgment, the Department should fail to enforce that permit condition.

WA7 8900 8967

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DEFINITIONS

For purposes of this permit, the following definitions shall apply:

a. **"Action Levels"** shall mean those specified concentration levels for constituents in groundwater in an aquifer, surface water, soil or air, which, when exceeded by releases of constituents from a solid waste management unit or RCRA Past Practice unit at a facility, may require corrective action.

b. **"Administrator"** shall mean the Administrator of the U.S. Environmental Protection Agency (EPA) or a designated representative. The Director, Hazardous Waste Division, EPA Region 10 (with the address as specified on page one of this permit) is a duly authorized and designated representative of the Administrator for purposes of this permit.

c. **"Agency"** shall mean the U.S. Environmental Protection Agency, Region 10 (with the address specified on page one of this permit).

d. **"Corrective Action Management Unit (CAMU)"** shall mean an area within a facility that is designated by the Administrator under 40 CFR Part 264, Subpart S, for the purpose of implementing corrective action requirements under 40 CFR § 264.552 and Section 3008(h) of RCRA, 42 U.S.C. § 6928(h). A CAMU shall only be used for the management of remediation wastes, which may include wastes generated as part of CERCLA response actions as well as wastes generated as part of RCRA corrective actions, pursuant to implementing such corrective action requirements at the facility.

e. **"Director"** shall mean the Director of the Washington State Department of Ecology or a designated representative of the Director for purposes of this permit.

f. **"Department"** shall mean the Washington State Department of Ecology (with the address specified on page sixteen of this permit).

g. **"facility"** or **"site"** shall mean, for purposes of implementing corrective action under 40 CFR § 264.101, all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA or facilities implementing corrective action under RCRA Section 3008(h). The facility shall mean that portion of the approximately 560 square miles in Southeastern Washington State including leased lands, which is owned by the United States Department of Energy and which is commonly known as the Hanford Reservation. The facility includes that identified in the physical description of the contiguous property (including structures, appurtenances and improvements) used to manage dangerous waste. For purposes

of corrective action, the Hanford Federal Facility property description is as set forth in Attachment 2 of the Department portion of the RCRA permit (Dangerous Waste Permit) and shall include Parcel C.

h. **"FFACO"** means the Hanford Federal Facility Agreement and Consent Order, as amended.

i. **"Hazardous Constituent"** means any constituent identified in Appendix VIII of 40 CFR Part 261, or any constituent identified in Appendix IX to 40 CFR Part 264.

j. **"Information Repository"** shall mean a repository which is accessible to interested parties which contains or provides access to data, documents, reports, and other public information relevant to the public understanding of the activities, findings, and plans for and developed pursuant to corrective action investigations and activities for specific units as identified in the FFACO or in Part III of the HSWA permit.

k. **"Lessee"** shall mean the entity or entities that hold real property under the terms of a written lease executed by the Permittee. This term shall also include any sublessee that holds real property under the terms of a written lease executed by the Permittee's lessee.

l. **"Permittee"** shall mean the United States Department of Energy holding the legal title to the land subject to corrective action requirements.

m. **"Raw Data"** shall mean laboratory reports, drilling logs, and other supporting information generated from investigations and available to the Permittee or its Lessees.

n. **"RCRA Past Practice Units"** shall mean any waste management unit, with exception of regulated, i.e., treatment, storage and disposal ("TSD") units, as defined by the FFACO, the investigation of which will be addressed in the FFACO for corrective action under RCRA. The term "waste management unit" includes all SWMUs and other non-SWMUs (e.g. one-time releases), regardless of the date waste was received or discharged at the unit.

o. **"RCRA Permit"** shall mean the Dangerous Waste Portion of the RCRA Permit for Treatment, Storage, and Disposal of Dangerous Waste (Dangerous Waste Permit) issued by the Washington State Department of Ecology, pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC, and the HSWA Portion of the RCRA Permit for the Treatment, Storage, and Disposal of Hazardous Waste (HSWA Permit) issued by the U.S. Environmental Protection Agency, Region 10, pursuant to 42 U.S.C. § 6901 et seq. and 40 CFR Parts 124 and 270.

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p. **"Release"** shall mean any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents, including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents.

q. **"Remediation Waste"** shall mean all solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments), and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under 40 CFR § 264.101 and Section 3008(h) of RCRA, 42 U.S.C. § 6928(h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing Sections 3004(v) or 3008(h) of RCRA, 42 U.S.C. §§ 6928(v) or 6928(h) for releases beyond the facility boundary. Remediation wastes may include wastes generated as part of CERCLA response actions as well as part of RCRA corrective actions.

r. **"Solid Waste Management Unit (SWMU)"** shall mean any discernible unit at which solid waste has been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which hazardous waste or hazardous constituents have been routinely and systematically released.

s. **"Temporary Unit(s)"** shall mean a unit within a facility consisting of tanks or container storage areas located at the facility which are used only for the storage or treatment of hazardous wastes (including hazardous constituents) for a period not exceeding one year, unless extended by the Regional Administrator in accordance with 40 CFR § 264.553(e). Temporary units shall be designated by the Administrator for the purpose of implementing corrective actions under 40 CFR § 264.101 or Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), in accordance with the procedures and requirements set forth in 40 CFR § 264.553.

t. Unless otherwise noted, all schedules refer to calendar time; i.e., thirty (30) days means thirty (30) calendar days.

u. All definitions contained in 40 CFR Parts 124, 260 through 264, 266, 268 and 270 are hereby incorporated by reference into this permit, except that any of the definitions used above shall supersede any definition of the same term given in the respective regulations. Where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be the standard dictionary definition

or their generally accepted scientific or industrial meaning.

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PART I. STANDARD CONDITIONS

I.A EFFECT OF PERMIT

I.A.1 This permit requires the Permittee to investigate any releases of hazardous wastes or hazardous constituents from SWMUs listed in HSWA permit condition III.B. These SWMUs are further described in the July 20, 1992, US Ecology RCRA Facility Assessment. This permit also provides procedures for reporting new units, requires the Permittee to comply with all land disposal restrictions applicable to this facility, and requires annual certification that on-site generation of hazardous waste is minimized to the extent practicable.

I.A.2 This HSWA Permit is applicable to those treatment, storage and disposal ("TSD") units identified in Part III of the Dangerous Waste Permit. When Part III of the Dangerous Waste Permit is modified to add new TSD units, this HSWA Permit must be modified to incorporate the applicable HSWA requirements for those new TSD units.

I.B PERSONAL AND PROPERTY RIGHTS

I.B.1. This permit does not convey property rights of any sort, nor any exclusive privilege, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of Federal, State, or local laws or regulations.

I.C PERMIT ACTIONS

I.C.1 This permit may be modified, revoked and reissued, or terminated for cause, as specified in 40 CFR §§ 270.41, 270.42 and 270.43.

I.C.2 The filing of a request for a permit modification, or revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance on the part of the Permittee shall not stay the applicability or enforceability of any permit condition.

I.C.3 For RCRA past practice actions taken pursuant to the provisions of the FFACO, as amended, public participation will be provided in accordance with the provisions of the FFACO and the permit modification procedures of 40 CFR §§ 270.41 and 270.42. The remedies and schedules for implementation for RCRA past practice actions established pursuant to the FFACO shall be incorporated through permit modifications.

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I.D SEVERABILITY

I.D.1 The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision which forms the basis for any condition of this permit does not affect the validity of any other state or federal statutory or regulatory basis for said condition.

I.D.2 If any condition of this permit is contested, that permit condition, as well as any nonseverable conditions, shall be automatically stayed in accordance with 40 CFR § 124.16.

I.D.3 In the event that a condition of this permit is stayed for any reason, the Permittee shall continue to comply with the corresponding interim status standards in 40 CFR Part 265 until final resolution of the stayed condition.

I.E DUTY TO COMPLY

I.E.1 The Permittee shall comply with all conditions of this permit, except that the Permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit issued under 40 CFR § 270.61. Any permit noncompliance, except under the terms of an emergency permit, constitutes violation of RCRA, as amended by HSWA, and is grounds for enforcement action, permit termination, modification, revocation and reissuance of the permit, and/or denial of a permit renewal application.

I.E.2 Compliance with the terms of this permit does not automatically constitute a defense to any action brought under Sections 3004, 3007, 3008(a), 3008(c), 3008(v), 3013, and 7003 of RCRA (42 U.S.C. §§ 6924, 6927, 6928(a), 6928(c), 6928(v), 6934, and 6973), or under Sections 104, 106(a), 106(e), and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §§ 9604, 9606(a), 9606(e), and 9607, or any other federal law governing protection of public health or the environment. However, compliance with the terms of this permit does constitute a defense to any action alleging failure to comply with the

applicable standards upon which this permit is based.

I.F DUTY TO REAPPLY

I.F.1 The Permittee must submit a complete application for a new RCRA permit at least one hundred and eighty (180) calendar days before the RCRA permit expires, unless a later date is granted by both the Director and the Administrator.

I.G CONTINUATION OF EXPIRING PERMIT

I.G.1 As set forth in 40 CFR § 270.51, this permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 40 CFR § 270.13 through § 270.21) and, through no fault of the Permittee, both the Director and the Administrator have not made a final permit renewal determination.

I.H NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

I.H.1 It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.I DUTY TO MITIGATE

I.I.1 In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. Such mitigation shall not be a defense to enforcement action.

I.J DUTY TO PROVIDE INFORMATION

I.J.1 The Permittee shall furnish to the Administrator within a reasonable time any relevant information which the Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Administrator, upon request, copies of records required to be kept by this permit.

I.K INSPECTION AND ENTRY

I.K.1 The Permittee shall allow the Administrator, or their authorized representatives, upon the

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presentation of identification, credentials, or other documents as may be required by law, to:

I.K.1.a Enter at reasonable times upon the Permittee's premises where hazardous or solid waste management units are located or corrective action activities are conducted, or where records are kept under the conditions of the RCRA permit;

I.K.1.b Have access to and copy, at reasonable times, any records that must be kept under the conditions of the RCRA permit;

I.K.1.c Inspect, at reasonable times, any portion of the facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the RCRA permit; and,

I.K.1.d Sample or monitor, at reasonable times, for the purposes of assuring permit compliance, or as otherwise authorized by RCRA, any substances or parameters at any location.

I.K.1.e In case of lands owned by the Permittee but leased to other parties, the Permittee shall forward any requests for access by the Agency to the Lessee. If access to land owned by the Permittee but leased to other parties is denied, the Permittee shall use its best efforts to obtain signed access agreements and to obtain access for itself, EPA, Ecology and their contractors, representatives or agents.

I.L MONITORING AND RECORDS

I.L.1 Samples and measurements taken by the Permittee pursuant to the terms of this permit shall be representative of the monitored activity. The method used to obtain a representative sample to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261 or an equivalent method approved by the Regional Administrator. When required by regulation, laboratory methods shall be those identified in the most recent edition of Test Methods for Evaluating Solid Waste, EPA SW-846, Third Edition, November 1986, or as updated, or an equivalent method approved by the Regional Administrator.

I.L.2 The Permittee shall retain, or ensure the retention of, at the facility, or other approved location, all records of all sampling and analysis information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), records and results of inspections, copies of all reports

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required by this permit, other documentation produced pursuant to 40 CFR Part 268, unless authorized in the FFACO or in 40 CFR §§ 264.552 and 264.553, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the date of the sample, measurement, report, certification or recording, unless a longer retention period for certain information is required by other conditions of this permit. This five (5) year period may be extended by the Administrator at any time by notification, in writing, to the Permittee, and is automatically extended to five (5) years after the successful conclusion of any enforcement action.

I.L.3 Records of monitoring information shall include:

I.L.3.a The date(s), exact place, and time of sampling or measurements;

I.L.3.b The name, title, and affiliation of the individual(s) who performed the sampling or measurements;

I.L.3.c The date(s) analyses were performed;

I.L.3.d The name, title, and affiliation of the individual(s) who performed the analyses;

I.L.3.e The analytical techniques or methods used; and,

I.L.3.f The results of such analyses, including the QA/QC summary.

I.L.4 The Permittee may substitute analytical methods which are equivalent to those specifically approved for use in this permit in accordance with the following:

I.L.4.a The Permittee first submits to the Administrator a request for substitution of an analytical method(s) which is equivalent to the method(s) specifically approved for use in this permit. The request shall provide information demonstrating that the proposed method(s) is equal or superior to the approved analytical method(s) in terms of sensitivity, accuracy, and precision (i.e. reproducibility); and,

I.L.4.b The Administrator notifies the Permittee in writing, by certified mail or hand delivery, that the substitution of the analytical method(s) is approved. Such approval shall not require a permit modification.

I.L.5 The Permittee shall establish and maintain an information repository for the purpose of making accessible to interested parties documents, reports, and other public information developed pursuant to investigations and activities under this permit. The information repository shall be accessible to the public during reasonable hours and shall be located within a reasonable distance from the facility. The Permittee shall inform the public about this information repository through written notice to all individuals on the mailing list. The repository shall be maintained at a location approved by the Administrator. The Permittee shall also ensure that all raw data available to the Permittee is included with all corrective action reports and investigations required pursuant to this permit.

I.M. REPORTING PLANNED CHANGES

I.M.1 The Permittee shall give prior notice to the Administrator, as soon as possible, of any planned physical alterations or additions to the permitted facility for the management of hazardous waste (including hazardous constituents).

I.N ANTICIPATED NONCOMPLIANCE

I.N.1 The Permittee shall give at least thirty (30) calendar days advance notice, in writing, to the Administrator of any activity that might result in noncompliance with permit requirements. If advance notice is not possible, then the Permittee shall give notice within twenty-four (24) hours of the time it becomes aware of the anticipated noncompliance. Such notice does not authorize any noncompliance with or modification of this permit.

I.O TRANSFER OF PERMIT

I.O.1 This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 40 CFR § 270.40(b) or § 270.41(b)(2). Before transferring ownership or operation of the facility, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270, HSWA and the RCRA permit.

I.P TWENTY FOUR HOUR REPORTING

I.P.1 The Permittee shall verbally report to the Administrator any noncompliance with this permit that might endanger human health or the environment

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within twenty-four (24) hours from the time the Permittee becomes aware of the noncompliance.

I.P.2 Within fifteen (15) calendar days of the time the Permittee becomes aware of any noncompliance that might endanger human health or the environment, the Permittee shall provide to the Director and the Administrator a written submission. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance including exact dates and times, the anticipated time noncompliance is expected to continue if the noncompliance has not been corrected, corrective measures taken to mitigate the situation, and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

I.Q OTHER NONCOMPLIANCE

I.Q.1 The Permittee shall report to the Administrator all other instances of noncompliance with this HSWA permit not reported under permit condition I.N at the time of submittal of the TSD Facility Report (Form 5) required by WAC 173-303-390(2). The reports shall contain the applicable information listed in HSWA permit condition I.N.

I.R OTHER INFORMATION

I.R.1 Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in the permit application or in any report to the Administrator, the Permittee shall promptly submit such facts or corrected information.

I.S BIENNIAL REPORT

I.S.1 The Permittee shall comply with the Biennial Report requirements of 40 CFR § 264.75.

I.T SIGNATURE AND CERTIFICATION

I.T.1 All applications, reports, or other information submitted to Administrator by the Permittee pursuant to the permit shall be signed and certified in accordance with 40 CFR § 270.11.

I.T.2 All reports and other information required to be maintained by HSWA Permit condition I.L.2 shall be signed and certified in accordance with 40 CFR § 264.73(b)(9).

I.U CONFIDENTIAL INFORMATION

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I.U.1 Any information submitted by the Permittee to the Administrator may be claimed as confidential by the Permittee in accordance with applicable provisions of 40 CFR §§ 260.2 and 270.12.

I.V REPORTS, NOTIFICATIONS, AND SUBMISSIONS

I.V.1 All reports, notifications, and submissions which are required by this HSWA permit to be sent or given to the Administrator should be sent or given to:

Chief, Waste Management Branch,
EPA Region 10, HW-102,
1200 Sixth Avenue, Seattle, Washington 98101
(206) 553-2782, and

Hanford Project Manager,
Nuclear and Mixed Waste Management Program,
Department of Ecology,
Post Office Box 47600,
Olympia, Washington, 98504-7600
(206) 438-7021.

All reports, notifications, and submissions which are required by this HSWA permit for activities under the FFACO should also be sent to:

Hanford Project Manager
EPA Region 10, B5-10,
712 Swift Boulevard, Suite 5
Richland, Washington, 99352
(509) 376-6623

These are the current phone numbers and addresses and may be subject to change.

I.V.2 Two (2) copies of all reports, notifications and submissions which are required by this permit shall be given or sent to the Administrator and three (3) copies shall be given or sent to the Director. One (1) copy shall be placed by the Permittee in the information repository in accordance with HSWA permit condition I.L.5.

I.W EQUIVALENT MATERIALS/INFORMATION

If certain equipment, materials, procedures, and administrative information (such as names/job titles, phone numbers, addresses) are specified in this permit, the Permittee is allowed to use an equivalent or superior. Use of such equivalent or superior items shall not be considered a modification to this permit, but the Permittee must place in the operating record (prior to institution of the revision) the revision, accompanied by a

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narrative explanation, and the date the revision became effective. The Agency may judge the soundness of the revision during inspections and reviews, and take appropriate action. The format of tables or forms are not subject to the provisions of this permit and may be revised at the Permittee's discretion. Updates to EPA reference document SW-846 (changes made after the Third Edition, November 1986) may also be considered equivalent or superior.

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PART II. GENERAL FACILITY STANDARDS

II.A OPERATION OF FACILITY

II.A The Permittee shall at all times properly operate and maintain, in accordance with sound engineering and scientific practice, all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee so as to achieve compliance with the conditions of this permit. Proper operation and maintenance includes, but is not limited to, effective performance, seeking adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

II.B ACCESS AND INFORMATION

II.B.1 To the extent that work required by Part III of this HSWA permit must be done on property not owned or controlled by the Permittee, the Permittee shall use its best efforts to obtain site access agreements from the present owner(s) or lessee(s) of such property no later than two weeks prior to the scheduled commencement of work in accordance with the requirements set forth in Paragraph 106 of the FFACO which are specifically incorporated into the HSWA Permit. "Best efforts" shall mean, at a minimum, a certified letter from the Permittee to the current property owner(s) or lessee(s) requesting access to such property and if a reply is received from the property owner or lessee, follow-up letters from the Permittee, as appropriate, to clarify the work contemplated and address the owner's or lessee's reasonable concerns. In the event that the Permittee cannot obtain the necessary access agreements, the Permittee shall notify the Administrator in writing. The Administrator may, consistent with his/her legal authority, assist the Permittee in obtaining such agreements.

II.C OTHER PERMITS AND APPROVALS

II.C.1 To the extent that work required by Part III of this HSWA permit must be done under permit(s) or approval(s) pursuant to other federal, state, or local regulatory authorities, the Permittee shall use its best efforts to obtain such permits. For the purposes of this permit condition the term "best

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efforts" shall, at a minimum, mean submittal of a complete application for the permit(s) and/or approval(s) no later than sixty (60) calendar days after the information necessary to prepare the application is available to the Permittee.

II.D SCHEDULE EXTENSIONS

II.D.1 To the extent that activities required by Part III of this HSWA permit are not covered in the FFACO and are not completed in accordance with the schedules contained therein, and the Permittee can demonstrate to the Administrator's satisfaction that the Permittee used best efforts to accomplish the activity within the required schedule, the Administrator shall grant the Permittee an extension to the schedule.

II.D.1.a For the purposes of this permit condition the term "best efforts" shall, at a minimum include performance of all activities necessary to award contract(s) to outside contractors no later than sixty (60) calendar days after the information necessary to award the contract(s) is available to the Permittee. "Best efforts" shall also mean adequate planning, seeking funding, staffing, laboratory and process controls, and operation of backup or auxiliary facility or similar systems by the Permittee when necessary to meet the required schedules.

II.D.2 The Permittee shall notify the Administrator, in writing, no later than fifteen (15) calendar days after the Permittee determines that such schedules will not be met. The Permittee shall include with the notification all information supporting its claim that it has used best efforts to meet the required schedules. If the Administrator determines that the Permittee has made best efforts to meet such schedules, the Administrator shall notify the Permittee in writing by certified mail that the Permittee has been granted an extension and provide the Permittee a revised schedule reflecting this extension. Such a revision shall not require a permit modification.

II.E DISPUTE RESOLUTION

II.E.1 In the event the Administrator rejects, in whole or in part, any plan, report, or schedule required by Part III of this HSWA permit, the Agency or the Permittee may initiate the dispute resolution process and the following procedure will apply,

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except as specifically provided for under Article XV of the FFACO for solid waste management units covered by the FFACO.

II.E.1.a. The Administrator will notify the Permittee in writing of the acceptance, rejection, or proposed modification to, the plan, schedule, or submittal. Such notice shall:

II.E.1.a.(i) Identify the problem(s) and, where appropriate, suggest the change(s) which need to be made to the plan, schedule or submittal;

II.E.1.a.(ii) Provide an explanation and supporting documentation or data of why modification is needed; and,

II.E.1.a.(iii) In the event the Administrator proposes a modification, the notice will provide a date by which comments on the proposed modification must be received from the Permittee. Such date will not be less than thirty (30) calendar days from the date of the Permittee's receipt of the notice under HSWA Permit Condition II.E.1.a.

II.E.1.b. If the Administrator receives no written comments on the proposed modification from the Permittee, the modification will become effective five (5) calendar days after the close of the comment period specified under HSWA Permit Condition II.E.1.a.(iii). The Administrator will promptly notify the Permittee that the modification has become effective.

II.E.1.c. If the Permittee submits written comments on the proposed modification, the Administrator shall make a final determination concerning the modification within thirty (30) calendar days after the end of the comment period, if practicable. The Administrator shall then notify the Permittee in writing of the final decision. Such notification shall:

II.E.1.c.(i) Indicate the effective date of the modification, which shall be not later than fifteen (15) calendar days after the date of notification of the final modification decision;

II.E.1.c.(ii) Include an explanation of how comments were considered in developing the final modification; and,

II.E.1.c.(iii) Provide a copy of the final modification.

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II.E.1.d The following dispute resolution procedures apply only to Agency revisions of the Permittee's interim submissions, which generally consist of proposals and reports that carry out general obligations for an RFI, CMS or interim measures specified in the HSWA Permit. These procedures shall be followed before the Permittee shall comply with an Agency revision to an interim submission.

II.E.1.d.(i) The Administrator will provide the Permittee a notice which details the Agency's reasons for proposing to revise or require revision of an interim submission.

II.E.1.d.(ii) The Permittee may submit written comments to, and meet with, the EPA staff responsible for making the revisions.

II.E.1.d.(iii) The Permittee may submit written arguments and supporting evidence to the EPA Region 10 Hazardous Waste Division Director ("Division Director").

II.E.1.d.(iv) The Division Director shall make the final decision on interim submissions required under the HSWA permit.

II.E.1.d.(v) The Division Director shall provide the Permittee a statement of the reasons explaining the final decision and a response to the Permittee's arguments. This response shall be based on the administrative record for the HSWA Permit.

II.E.2 Modifications initiated and finalized by the Administrator using the procedure specified in HSWA Permit Condition II.E.1 are not subject to administrative appeal. Judicial review is available in accordance with applicable federal law.

II.F. WASTE MINIMIZATION

II.F.1 In accordance with 40 CFR § 264.73(b)(9), and Section 3005(h) of RCRA, 42 U.S.C. § 6925(h), the Permittee must place a certification in the operating record on an annual basis that:

II.F.1.a. A program is in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and,

II.F.1.b. The proposed method of treatment, storage or disposal is that practicable method currently available to the Permittee which minimizes the

present and future threat to human health and the environment.

II.F.2 The Permittee shall maintain each such certification of waste minimization in the operating record as required by 40 CFR § 264.73(b) until closure of such facility.

II.G. LAND DISPOSAL RESTRICTIONS

II.G.1 Unless authorized in the FFACO, or in 40 CFR §§ 264.552 and 264.553, the Permittee shall comply with all applicable requirements of the land disposal restrictions (LDR) of 40 CFR Part 268. The Permittee shall develop and implement treatment technologies necessary to achieve full compliance with LDR requirements for mixed wastes at the facility in accordance with the LDR provisions and schedule specified in Appendix D of the FFACO. The Permittee shall comply with the LDR requirements specified in the unit-specific waste analysis plans developed for the units identified in Part III of the Dangerous Waste Permit.

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PART III. CORRECTIVE ACTION

III.A. INTEGRATION WITH THE FFACO

III.A.1. Section 3004(u) of RCRA, 42 U.S.C. § 6924(u) (Section 206 of HSWA), and regulations promulgated at 40 CFR § 264.101 require corrective action, as necessary, be included in all permits issued after November 8, 1984, to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU) at a facility seeking a RCRA permit.

The corrective action for the Hanford Federal Facility will be satisfied as specified in the FFACO, as amended, except as otherwise provided herein. For those solid waste management units not covered by the FFACO, RCRA corrective action requirements will be addressed by HSWA permit conditions III.B through III.I.

III.A.2 RCRA Past Practice Units

III.A.2.a Except as otherwise provided herein, all RCRA Past Practice (RPP) Unit work plans, shall be conducted in accordance with schedules for completion of investigations and corrective actions, developed pursuant to the FFACO, as amended, for RCRA Past Practice units identified in Appendix C of the FFACO. The remedies and schedules for implementation for RCRA past practice actions established pursuant to the FFACO shall be incorporated through permit modifications.

III.A.2.b. The Permittee shall conduct corrective action under RCRA for RCRA Past Practice Units which have the potential for release or have released hazardous waste or hazardous constituents as specified in the FFACO for corrective action, regardless of the date waste was received at or released from the unit, as necessary to protect human health and the environment.

III.A.2.c. The Permittee shall follow the dispute resolution process for RPP Units in accordance with Article XV of the FFACO.

III.A.2.d. The Permittee shall maintain an information repository for RPP Units covered under the FFACO in accordance with HSWA Permit condition I.L.5. and Sections 9.0 and 10.0 of the FFACO Action Plan.

III.A.2.e. Following approval of the proposed remedy, the Administrator shall initiate a major permit modification to this permit, pursuant to HSWA permit condition I.C.3.

III.A.2.f. The modification shall specify the selected remedy and include, at a minimum the following:

III.A.2.f.(i) Description of all technical features of the remedy that are necessary for achieving the standards for remedies established under HSWA permit condition III.D. and Attachment D, including the length of time for which compliance must be demonstrated at specified points of compliance;

III.A.2.f.(ii) All concentration levels of hazardous waste and/or hazardous constituents in each medium, that the remedy must achieve to be protective of human health and the environment;

III.A.2.f.(iii) All requirements for achieving compliance with these concentrations;

III.A.2.f.(iv) All requirements for complying with the standards for management of wastes;

III.A.2.f.(v) Requirements for removal, decontamination, closure, or postclosure of units, equipment, devices or structures that will be used to implement the remedy;

III.A.2.f.(vi) A schedule for initiating and completing all major technical features of the remedy; and

III.A.2.f.(vii) Requirements for submission of reports and other information.

III.A.2.g. For RCRA past practice corrective action under the FFACO, the RFI/CMS shall be the basis for the revision of the HSWA portion of the permit in accordance with HSWA Permit condition I.C.3. For RCRA past practice actions taken pursuant to the provisions of the FFACO, as amended, public participation will be provided in accordance with the provisions of the FFACO and the permit modification procedures of 40 CFR §§ 270.41 and 270.42, to incorporate the CMS workplan into the HSWA portion of the permit. The CMI shall be conducted in accordance with the schedule of compliance specified in the work schedule in Appendix D of the FFACO, and incorporated into the HSWA Permit in accordance with HSWA Permit Condition I.C.3.

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III.A.2.h. Interim Measures for RCRA past practice units covered under the FFACO shall be developed and implemented by the Permittee in accordance with the FFACO.

III.A.2.i Notification of newly identified solid waste management units within these areas of the facility covered by the FFACO shall be in accordance with Section 3.0 of the FFACO Action Plan.

III.B. CORRECTIVE ACTION REQUIREMENTS

III.B.1 The following solid waste management units require further investigation to determine whether releases of hazardous wastes or hazardous constituents are occurring or have occurred which threaten human health and the environment:

III.B.1.a US Ecology, Inc.

III.B.1.a.(i) SWMU 1: Chemical Trench

III.B.1.a.(ii) SWMUs 2-13: Low-Level Radioactive Waste Trenches 1 through 11A.

III.B.2. RCRA corrective action requirements for SWMUs identified in HSWA Permit condition III.B.1.a. will be deferred for one calendar year from the effective date of the HSWA Permit pending evaluation of progress made on SWMU investigation and/or remediation under the Washington State Department of Health and the Washington State Department of Ecology pursuant to authorities contained in Chapters 43.21A, 43.70, 70.98, 70.105 and 70.105D of the Revised Code of Washington, and MTCA Regulations, Chapter 173-340 Washington Administrative Code. If, within one calendar year, the SWMUs identified in the HSWA Permit condition III.B.1.a have not either been:

(a) remediated to cleanup standards suitable for RCRA corrective action purposes;

(b) determined appropriate for no further action by means of comparison of residual concentrations of contaminants with MTCA cleanup standards and RCRA corrective action cleanup standards; or

(c) administratively addressed by either: (1) an amendment to the Radioactive Materials License (pursuant to WAC 246-232-070 and WAC 246-250-100(7)); (2) a filed Department of Health order (pursuant to WAC 246-232-070(1)

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and WAC 246-250-100(4)); (3) a filed MTCA consent decree (pursuant to WAC 173-304-520); (4) a final MTCA Agreed Order (pursuant to WAC 173-340-530); or (5) a MTCA Enforcement Order (pursuant to WAC 173-540);

the Administrator will, in consultation with the Director of the Department, either extend the schedule for completion of activities listed in (a) through (c) above, or provide written notification to the Permittee that RCRA corrective action for SWMUs identified in HSWA Permit condition III.B.1.a. will no longer be deferred and activate HSWA Permit conditions III.C. through III.J. If the schedule is extended, the written notification from the Administrator will specify the duration of the extension and the specific milestones or dates at which the decision to defer RCRA corrective action will be revisited.

III.C RCRA FACILITY INVESTIGATION

III.C.1 Within one hundred and eighty (180) calendar days of the Permittee's receipt of a written request by the Administrator, the Permittee shall submit a RCRA Facility Investigation (RFI) workplan to determine the nature and extent of potential releases from SWMUs identified in HSWA permit condition III.B.1.

The RFI workplan shall include the information specified in Attachments A and B and shall also include the following tasks:

III.C.1.a Identify the disposition of any wastes generated as a result of the investigation (e.g., decontamination rinse water), including an Individual Investigative Derived Waste Management Plan as required;

III.C.1.b Identify the disposition of purgewater generated as a result of the investigation in a Purgewater Management Plan; and

III.C.1.c Include the general description of the contractor performing or directing the investigations and the overall management of the RFI.

III.C.2 The Permittee shall implement this RFI workplan in accordance with its terms and schedules upon acceptance or modification of the workplan by the Agency. Upon conclusion of the RFI and in accordance with approved schedules, the Permittee shall submit an RFI report which shall include an analysis and summary of all facility investigations and the results of such investigations including

quality assured results of all analytical tests, and laboratory detection limits achieved for each constituent.

III.C.3 The Agency in will review, and then approve, modify, or disapprove in whole or in part the RFI workplan and RFI report. The Agency will distribute review comments and determinations to the Permittee and appropriate Lessee(s). If disapproved, the Permittee will be directed to modify the RFI workplan and/or RFI report to meet the Agency's concerns.

III.C.4 Final acceptance of the RFI workplan and the RFI report shall not require a permit modification.

III.C.5 The Permittee shall maintain the final RFI report in the information repository as required by HSWA permit condition I.L.5 during the life of the permit, including the term of any reissued permits.

III.D CORRECTIVE MEASURES STUDY AND IMPLEMENTATION

III.D.1 If the Administrator determines, on the basis of the RFI report and appropriate action levels described in HSWA permit condition III.G, that corrective measures to remediate releases of hazardous waste or hazardous constituents from units identified in HSWA permit condition III.B.1 are necessary to protect human health and the environment, the Administrator will advise the Permittee and appropriate Lessee(s) of this determination, and the reasons therefore, in writing.

III.D.1.a Within one hundred and eighty (180) calendar days of receipt of the Administrator's notification of a determination, the Permittee may submit a corrective measures study (CMS) workplan to evaluate the effectiveness of various technologies. Such a CMS plan must include thorough procedures for testing and verification of test results, as well as a schedule for CMS completion and submittal of a CMS report. The Corrective Measure Study (CMS) workplan and report shall include the information specified in Attachment C.

Alternatively the Permittee may submit a corrective measures implementation (CMI) workplan to remediate releases documented by the RFI report. The CMI workplan shall include a description of the proposed corrective measures, proposed cleanup standards, contaminant containment measures, a sampling program to confirm the extent of each corrective measure, and a schedule for implementation of these

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corrective measures and the monitoring program. The Corrective Measures Implementation (CMI) workplan shall address the full scope of work described in Attachment D.

III.D.1.b The Agency will review, and then approve, modify, or disapprove, the CMI or CMS workplan (or CMS report). If disapproved, the Permittee will be directed to modify the CMI or CMS workplan (or CMS report) to meet the Agency's concerns. The Agency will distribute review comments and determinations to the Permittee and appropriate Lessee(s).

III.D.1.c Should the Permittee choose to submit a CMS workplan for all or part of the remediation needs, the Permittee shall, upon Agency acceptance of the CMS report, commence the CMI workplan approval process described under HSWA Permit Condition III.D.1.a. for that portion, or all of the remediation.

III.D.1.d Upon notification by the Agency of tentative approval of the CMI workplan, the Permittee shall request a permit modification pursuant to 40 CFR § 270.42 to implement the workplan.

III.D.2 Upon the effective date of the permit modification required by HSWA permit condition III.D.1.d, the CMI workplan shall be implemented by the Permittee according to its terms and schedule set forth in the revised permit.

III.E. INTERIM MEASURES

III.E.1 If the Administrator or the Permittee determine, on the basis of information submitted by the Permittee pursuant to HSWA permit condition III.C., or any other information, that interim measures are necessary to protect human health and the environment from a release of hazardous waste or hazardous constituents from a solid waste management unit which is not subject to the FFACO, the Permittee may be required to implement interim measures. Such interim measures may be included in this permit pursuant to 40 CFR §§ 270.41 or 270.42.

III.E.2 The Permittee shall, when directed by the Administrator, implement interim measures without prior approval of an Interim Measures Plan or revisions to an approved Interim Measures Plan where such actions have been deemed necessary by the Administrator to protect human health and the environment.

III.E.3 When directed to implement interim measures by the Administrator, the Permittee shall implement the specified actions in accordance with the schedule specified by the Administrator.

III.E.4 Upon written request by the Administrator and in accordance with the schedules specified in such requests, the Permittee shall submit an interim measures plan which shall identify specific action(s) to be taken to implement the interim measures and a schedule for implementing the required measures. At a minimum, the interim measures plan shall include the information specified in Attachment E, and shall contain information which will allow the Administrator to make an informed decision regarding the interim measures plan, taking into account the following factors:

III.E.4.a Time required to develop and implement a final remedy;

III.E.4.b Actual and potential exposure of human and environmental receptors;

III.E.4.c Actual and potential contamination of drinking water supplies and sensitive ecosystems;

III.E.4.d The potential for further degradation of the medium absent the interim measures;

III.E.4.e Presence of hazardous waste in containers that may pose a threat of release;

III.E.4.f Presence and concentration of hazardous waste including hazardous waste constituent(s) in soils that have the potential to migrate to ground or surface water;

III.E.4.g Weather conditions that may affect the current levels of contamination;

III.E.4.h Risks of fire, explosion, or accident; and

III.E.4.i Other situations that may pose threats to human health and the environment.

III.E.5 Interim measures and schedules for implementation of the Interim Measures Plan may be incorporated into this HSWA permit through permit modification initiated by the Administrator in accordance with 40 CFR § 270.41, or by the Permittee in accordance with 40 CFR § 270.42, as appropriate.

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III.F. DISCOVERY OF NEW SOLID WASTE MANAGEMENT UNITS

III.F.1 The Permittee shall notify the Administrator in writing of any newly-identified SWMU within all areas of the facility not covered by the FFACO no later than thirty (30) calendar days after the date of discovery. The notification shall include, but not be limited to, the following information as required by 40 CFR § 270.14(d):

III.F.1.a A description of the SWMU's type, function, dates of operation, location (including a map), design criteria, dimensions, materials of construction, capacity, ancillary systems (e.g., piping), release controls, alterations made to the unit, engineering drawings, and all closure and post-closure information available, particularly whether wastes were left in place;

III.F.1.b A description of the composition and quantities of solid wastes processed by the units with emphasis on hazardous wastes and hazardous constituents;

III.F.1.c A description of any release (or potential release) of hazardous waste or hazardous constituents originating from the unit. Include information on the date(s) of release, type of hazardous waste or hazardous constituents, quantity released, nature of the release, extent of release migration, and cause of release (e.g., overflow, broken pipe, tank leak, etc.). Also, provide any available data which would quantify the nature and extent of environmental contamination, including the results of soil and/or groundwater sampling and analysis efforts. Likewise, submit any existing monitoring information that indicates releases of hazardous waste or hazardous constituents have not occurred or are not occurring; and

III.F.2 The additional solid waste management units may be added to those listed in HSWA permit condition III.B.1. based upon additional information received by the Permittee, the Administrator, or any other knowledgeable source. Additional solid waste management units subject to corrective action under the FFACO may also be added in accordance with HSWA Permit condition III.A.1 for corrective action.

III.F.3 Upon receipt of the notification of any newly-identified SWMU, the Administrator may request the Permittee to submit a RFI or interim measures workplan and/or perform interim or corrective measures in accordance with the specifications

contained in HSWA Permit conditions III.C through III.E.

III.F.4 In lieu of a new RCRA Facility Investigation, the Permittee may propose either to incorporate any newly-identified SWMU into an ongoing RCRA Facility Investigation or to submit a proposal for the performance of corrective measures at such newly-identified SWMU in accordance with the provisions of HSWA Permit condition III.D., or interim measures in accordance with the provisions of HSWA Permit condition III.E. Any such proposal shall be submitted to the Administrator along with, or subsequent to, the notification of the discovery of the SWMU(s).

III.G. ACTION LEVELS

III.G.1 The Permittee shall consider the Washington State Model Toxics Control Act Standards, and Federal regulatory requirements including EPA health-based values [1], in all recommendations for investigatory/corrective actions conducted pursuant to the terms of this permit.

III.H. TECHNICAL IMPRACTICABILITY

III.H.1 The Agency may determine, based on information developed by the Permittee, that compliance with a requirement(s) for a remedy is not technically practicable. The Permittee shall submit the following information to the Agency:

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[1] The EPA-health based concentration levels for hazardous wastes and constituents are derived in a manner consistent with guidelines set forth in 51 FR 33992, 34006, 34014, and 34028. The health-based level for carcinogens represents a concentration associated with an excess upper bound lifetime risk of 0.000001 due to a continuous as well as constant lifetime exposure. The level for systemic toxicants represents a concentration to which the human population, if exposed on a daily basis, will be unlikely to suffer an appreciable risk of deleterious effects during the course of a lifetime. Any constituent values, accepted and formally published by EPA, and using these criteria, may be considered EPA health-based levels. Tables of these values are available in the Proposed Rule for "Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities," 55 FR 30798-30884, (July 27, 1990). Sources may be revised at any time. The Permittee should contact EPA before consulting such sources to verify that the most recent editions are being used.

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III.H.1.a The Permittee's efforts to achieve compliance with the requirement(s); and

III.H.1.b Whether other currently available or new and innovative methods or technologies could practicably achieve compliance with the requirements.

III.H.2 If the Agency determines that compliance with a remedy requirement is not technically practicable, the HSWA Permit shall be modified to include schedules of compliance to specify as necessary and appropriate the following information:

III.H.2.a Further measures that may be required of the Permittee to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and

III.H.2.b Alternate levels or measures for cleaning up contamination media, controlling the source(s) of contamination, or for the removal or decontamination of equipment, units, devices, or structures required to implement the remedy.

III.I CORRECTIVE ACTION MANAGEMENT UNIT(S) AND TEMPORARY UNITS.

III.I.1 The Permittee may propose the use of a either a corrective action management unit (CAMU) and/or a temporary unit (TU) to the Agency during the corrective action process. If such a proposal is determined by the Administrator to be consistent with 40 CFR Part 264, Subpart S, the Administrator may approve the proposal in accordance with permit modification procedures in 40 CFR §§ 270.41 or 270.42. Upon Agency approval and designation such units must be operated in accordance with all operating requirements, federal regulations, and applicable state laws and regulations.

III.I.2 Before Agency approval and designation of a CAMU or TU, the Permittee shall initiate a Class III permit modification to request such approval and designation in accordance with 40 CFR § 270.42.

III.J CONFIRMATORY SAMPLING

III.J.1 Within ninety (90) calendar days of receipt of the Administrator's notification of determination, the Permittee shall prepare and submit to the Agency, a Confirmatory Sampling (CS) Workplan to determine whether a release of hazardous waste or constituents has occurred from SWMUs identified in HSWA Permit

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Condition III.B. The CS workplan shall include schedules of implementation and completion of specific actions necessary to confirm a release. It should also address applicable requirements and affected media.

III.J.2 The CS Workplan must be approved by the Agency, in writing, prior to implementation. The Agency shall specify the start date of the CS Workplan schedule in a letter approving the CS Workplan. If the Agency disapproves the CS Workplan, the Agency shall either (1) notify the Permittee in writing of the CS Workplan's deficiencies and specify a due date for submission of a revised CS Workplan, or (2) revise the CS Workplan and notify the Permittee of the revisions.

III.J.3. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Workplan.

III.J.4. The Permittee shall prepare and submit to the Agency, in accordance with the approved CS Workplan schedule but in any case no later than one hundred and eighty (180) days from the date of EPA approval of the CS Workplan, a Confirmatory Sampling (CS) Report. The CS Report shall identify those SWMUs listed in HSWA permit condition III.B. that have released hazardous constituents into the environment. The CS Report shall include all data, including raw data, and a summary and analysis of the data, that supports the determination in the CS Report that a release has or has not occurred.

III.J.5. Based on the results of the CS Report, the Agency shall determine the need for further investigations at the SWMUs covered in the CS Report. If the Agency determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in HSWA permit condition III.C. The Agency will notify the Permittee in writing of any further corrective action decisions regarding the SWMUs covered in the CS Report.

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ATTACHMENT A

RCRA FACILITY INVESTIGATION WORK PLAN REQUIREMENTS

The RFI Work Plan shall meet the following requirements, in addition to the specific requirements and deadlines set forth in the HSWA permit. Deviations from these requirements may be made only with prior Agency approval:

1. The RFI Guidance in Volume I, Section 2 of Agency Document Number Agency 530/SW-89-031, "RCRA Facility Investigation (RFI) Guidance," (May 1989) shall be followed when developing the RFI Work Plan.

2. The RFI Work Plan shall include a Project Management Plan which will include schedules and a description of the technical approach.

3. The RFI Work Plan shall include a Data Collection Quality Assurance Plan and a Data Management Plan, developed as per the requirements set forth in Attachment "B" of the HSWA permit.

4. The RFI Work Plan shall include a Sampling and Analysis Plan. This plan shall address the sampling techniques, analytical parameters, and analytical methods to be used for characterization of all media. Rationale shall be provided to support the selection of each technique, parameter and method.

5. The RFI Work Plan shall include a Public Involvement Plan, to be developed in consultation with the Agency, for the dissemination of information to the public regarding RFI activities and results. The Community Relations Plan shall specify the information repositories and other approved locations for all submittals and reports required by the HSWA permit. The Public Involvement Plan shall also specify the methodology for identifying interested members of the Public who will be notified of the placement of any information in the repository. Interested members of the Public shall include, but not be limited to, the owners and operators of adjacent properties.

6. The RFI Work Plan shall include provisions for carrying out investigations necessary to characterize geology, stratigraphy and hydrogeology beneath the Facility, define the sources, nature and extent of contamination, and identify actual or potential receptors. The investigations must result in data of adequate technical quality to support the development and evaluation of corrective measures in a Corrective Measures Study (CMS), and must assure that the full extent of each hazardous waste and/or hazardous constituent released at or from the Facility has been

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identified in each media to the Agency's satisfaction. Detailed workplans and technical specifications for specific investigative activities within the RFI may be submitted and implemented in a phased manner, and may utilize information obtained during prior phases of investigation. The RFI Work Plan shall include provisions for characterizing the following:

A. Environmental Setting

The RFI Work Plan shall include provisions to collect information to supplement and verify existing information on the environmental setting at the Facility. Such characterization shall extend, at a minimum, as necessary to confirm that the full extent of each hazardous waste and/or hazardous constituent released at or from the Facility has been identified. The RFI Work Plan shall provide for characterization of the following:

(1) Hydrogeology

The following shall be provided:

a. A description of regional and Facility-specific geologic and hydrogeologic characteristics affecting ground water flow and contaminant migration beneath and from the Facility. This description shall include, but not be limited to, the following information:

i) Regional and Facility-specific stratigraphy. At a minimum, this shall include a detailed lithologic description of the Facility from the surface to the base of the upper most aquifer, which may include the upper basalt confining aquifer system ("Rattlesnake Ridge interbed aquifer"). All soil borings shall be logged continuously or at intervals approved by the Agency. Lithologic descriptions shall include, but not be limited to, items such as grain size and sorting, depositional environment, and classification according to the Unified Soil Classification System.

ii) An identification of areas of groundwater recharge and discharge, their location and characteristics.

iii) An evaluation of the continuity of stratigraphic units within the Facility,

and a correlation of these units and those of adjacent Facilities.

b. A description of each hydrogeologic unit which may serve as a contaminant migration pathway at or from the Facility. This description shall be based upon, at a minimum, field studies, soil and aquifer tests, and soil borings and cores. The description shall identify all distinct water bearing zones and/or systems and any intervening saturated or unsaturated units at the Facility. The description shall include, but not be limited to, the following information:

i) Hydrogeologic cross sections, indicating the location and extent of each hydrogeologic unit;

ii) An identification of each geologic formation, group of formations, or part of a formation in all water bearing zones capable of yielding a significant amount of ground water to wells or springs. This shall include, at a minimum, all water-bearing zones that may serve as a pathway for contaminant migration, including perched saturated zones;

iii) Hydraulic conductivity and porosity (total and effective) of each hydrogeologic unit as necessary to characterize the impact of each such unit on groundwater flow and potential contaminant transport;

iv) An identification of zones of contrasting hydraulic conductivity that may affect the migration of contaminants as necessary to characterize groundwater flow and potential contaminant transport;

c. A description of the regional and Facility-specific hydrogeologic flow for each hydrogeologic unit pursuant to Section 6.A.1.b. of this Attachment, and any other contaminant migration pathways identified pursuant to this HSWA permit. At a minimum, the hydrogeologic flow description shall include the following information:

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i) Water level contour and/or potentiometric surface maps using measurements from existing and newly installed wells. These maps shall meet the following requirements:

A) Contour maps shall incorporate data obtained from twelve monthly rounds of water level or fluid pressure measurements from all ground water monitoring wells used to fulfill the requirements of this HSWA permit.

B) Contour maps shall be prepared for each water bearing zone identified.

C) Contour maps shall reflect the influence of barometric pressure, if any, on water level measurements. Barometric pressure shall be recorded at the beginning and end of every period during which ground water levels are measured to fulfill the requirements of this HSWA permit.

D) Contour maps shall reflect the presence and influence of any non-aqueous phase liquids. Any measurements necessary to correct water levels for the presence of these liquids shall be taken at the time of water level measurements.

ii) Hydrogeologic cross sections showing the magnitude of vertical gradients;

iii) The flow system, including the vertical and horizontal components of flow, as described through flow vectors or the construction of flow nets, as necessary to identify and characterize potential contaminant transport pathways;

iv) Any changes in the hydraulic flow regime due to seasonal influences;

v) An identification and interpretation of any hydraulic interconnections within and between saturated zones at the Facility and all downgradient areas potentially impacted by releases from the Facility, including quantification to these aquifers;

vi) Hydrographs depicting the variation of water levels in each well over the period of water level measurements.

vii) An evaluation and investigation of any possible groundwater mounding at the Facility which may affect transport pathways.

viii) An identification of the location and amount of groundwater recharge and discharge, including any discharges of groundwater that flows at or from the Facility to the surface in drainage ditches.

d. A description of human influences, including off-facility structures and conditions, that may affect the hydrogeology of and migration of any contaminants at or from the facility, identifying:

i) Active and inactive local water withdrawal wells with the potential to affect groundwater flow at the Facility, and approximate pumping schedules;

ii) Structures including, but not limited to, gas and electric utilities, pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, sewer pipes, stormwater drains, and retention areas etc.;

(2) Soils

The RFI shall include characterization of the soil and fill units in the vicinity of known and suspected contaminant releases. Such characterization shall include all factors necessary and appropriate to define the potential for contaminant migration and to evaluate contaminant fate and transport in the soil system. Examples of the descriptions and measurements which may be required include:

a. Soil descriptions in accordance with the Unified Soil Classification system;
b. Surface soil distribution;
c. Hydraulic conductivity (saturated);
d. Bulk density;
e. Porosity;
f. Cation exchange capacity (CEC);
g. Soil organic matter content;
h. Soil pH;

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i. Particle size distribution based on sieve analyses;
j. Moisture content;
k. Presence of stratification or soil structures that may affect unsaturated flow;
l. Infiltration;
m. Evapotranspiration;
n. Storage capacity;
o. Mineral content;
p. Contaminant attenuation or absorption capacity and mechanisms;
q. Color photographs of all sample intervals, with a size scale present in each photograph.

All soil borings conducted under the RFI Work Plan shall be logged continuously or at intervals approved by Agency, for a detailed lithologic description from the ground surface to the base of the Uppermost Aquifer which may include the upper basalt confining aquifer system ("Rattlesnake Ridge interbed aquifer"). Soil characterization shall occur for each distinct soil type in all soil borings. All soil borings shall be abandoned using bentonite or bentonite grout, unless such a soil boring is completed as a groundwater monitoring well under the HSWA permit.

B. Contamination Characterization

The RFI Work Plan shall include requirements to collect analytical data on ground water, soils, air, surface water, and sediment contamination at and from the Facility and other areas affected by Facility operations. This data shall be sufficient to define the origin, nature and extent, direction and rate of contaminant migration. Data shall include time and location of sampling, environmental conditions during sampling, media sampled, contaminant concentrations, and the identity of the individuals performing the sampling and analysis. Analytical methods must be those specified in Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, U.S. EPA Publication No. SW-846, 3rd Edition, September 1986, methods for Chemical Analysis of Waster and Wastes, Agency Report 600/4-79-020, March 1983; or alternate methods approved by the Agency and which have been demonstrated will perform equal or better than SW-846 methods under conditions expected in the investigation.

The following types of contamination shall be addressed at and from the Facility:

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(1) Ground Water Contamination:

a. The RFI Work Plan shall include requirements to characterize any groundwater contamination at or from the Facility. This investigation shall, at a minimum, provide the following information:

i) A description of the horizontal and vertical extent of any immiscible or dissolved contaminants originating from the Facility, including concentration profiles of all parameters identified in Section 6.B.1.d.(i) of this Attachment;

ii) The rate of contaminant migration;

iii) An evaluation of factors influencing the migration of contaminants;

iv) A prediction of future contaminant migration, and a justification of any assumptions, calculations or models used to develop the prediction;

The RFI Work Plan shall document the procedures to be used in making the above determinations (e.g., well design, well construction, geophysical investigative methods, groundwater modeling, etc.).

b. The RFI Work Plan shall include provisions for installation of all groundwater monitoring wells needed to delineate the nature and extent of any contamination at or from the Facility. These requirements shall define the criteria for placement of wells, and the design and installation procedures to be used. The RFI Workplan shall include provisions to extend the groundwater monitoring well system as necessary, both horizontally and vertically, to determine the full extent of groundwater contamination. The proposed groundwater monitoring system and monitoring well network shall meet the following requirements:

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i) The network shall contain upgradient wells or functional equivalents capable of yielding samples representative of background water quality in each hydrogeologic unit identified pursuant to Section 6.A.1.b. of this Attachment. These upgradient wells or functional equivalents cannot be affected by releases of hazardous waste and/or hazardous constituents from any solid waste management unit at the Facility. The number and location of the wells must be sufficient to characterize the spatial variability of background water quality.

ii) The network shall contain downgradient wells capable of detecting any release of hazardous waste and/or hazardous constituents from the solid waste management units at the Facility to groundwater in each hydrogeologic unit identified pursuant to Section 6.A.1.b of this Attachment. The number and location of these wells must be sufficient to characterize the nature and extent of any such releases, including any such releases which may have migrated off-facility.

iii) The network shall be capable of operating for a period of time sufficient to provide representative groundwater samples during the RFI and the evaluation and implementation of any corrective measures required at the Facility.

iv) Any existing wells at the Facility included in the monitoring network that cannot meet these requirements shall be replaced and/or abandoned, or supplemented by new monitoring wells.

v) The groundwater monitoring system shall include provisions to evaluate results of sampling and analysis throughout the investigation, and to modify the groundwater monitoring network and the

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sampling and analysis plan as necessary, based on this evaluation, to meet the objectives of the investigation.

The guidelines and specifications in the RCRA Groundwater Monitoring: Draft Technical Guidance (Agency/530-R-93-001, November, 1992), and the Technical Enforcement Guidance Document (Agency OSWER #9950.1, September 1986)(TEGD) shall be followed.

c. The RFI Work Plan shall include provisions to provide the following information for all groundwater monitoring wells used to meet the RFI requirements:

i) A description and map showing well locations, including each well's surveyed surface reference point and vertical reference point elevation. Wells shall be surveyed using, or existing well elevations converted to, the National Geodetic Vertical Datum (NGVD), 1929, to an accuracy of within 0.01 foot in accordance with the TEGD. Horizontal surveying accuracy shall be within 1.0 foot;

ii) The boring and casing diameter and depth of each well;

iii) Specification of well intake design, including screen slot type, size and length, filter pack materials, and method of filter pack emplacement;

iv) Specification of the well casing and screen materials. Well construction materials shall be chosen based on parameters to be monitored, and the nature of contaminants that could potentially migrate from the Facility. Well materials shall: (1) minimize the potential of adsorption of constituents from the samples, and (2) not be a source of sample contamination. Wells shall be constructed for the purpose of long term monitoring in accordance with

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all applicable federal, state, and local laws;

v) Documentation of methods used to seal the well from the surface to prevent infiltration of water into the well and downward migration of contaminants through the well annulus;

vi) Description of well development methods and procedures;

vii) Documentation of all well design and installation parameters specified in Section 3.5 of the TEGD; and

viii) Documentation that all boring, well installation, and well abandonment procedures comply with all applicable federal, state, and local laws, and were conducted by a licensed driller.

d. The RFI Work Plan Sampling and Analysis Plan shall include the following elements specific to the groundwater monitoring network:

i) Parameters for chemical analysis of groundwater samples. Selected samples from the initial round of sampling shall be analyzed for all constituents specified in Appendix IX of 40 C.F.R. Part 264. Parameters for subsequent sampling events shall be selected, subject to Agency review and approval, based on the results of initial ground water sampling and analysis, and upon the composition of wastes that are or have been managed at the Facility. The rationale for selection of all parameters shall be provided.

ii) A sampling schedule for groundwater monitoring. At a minimum, this schedule shall include collection of groundwater samples for chemical analysis from each well on a quarterly basis to characterize temporal trends and

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variations in groundwater contaminant concentration.

iii) Provisions for sampling and reporting of the occurrence, amount, thickness, and composition of any non-aqueous phase liquids encountered in any monitoring wells.

(2) Soil Contamination

a. The RFI Work Plan shall include requirements to characterize the contamination of the soil and fill materials at and from the Facility and any contaminant releases. The Work Plan shall include provisions to extend this characterization as necessary, both vertically and horizontally, to determine the full extent of soil contamination. Soil sampling shall occur at the following locations, and where necessary to meet the RFI objectives:

i) From all soil borings, from the surface as necessary to determine the full extent of contamination, and specify the intervals and depths of the soil borings.

ii) At all stratigraphic unit contacts;

iii) At the location of any preferred routes of contaminant migration;

iv) Where field observation or testing indicate greater concentration of contaminants relative to the nearest strata that would otherwise be sampled.

b. The RFI Work Plan Sampling and Analysis Plan shall document the following for soil sampling:

i) The sampling techniques and equipment to be used;

ii) The parameters for chemical analysis. Selected samples from the initial round of sampling shall be analyzed for all

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constituents specified in Appendix IX of 40 CFR Part 264. Parameters for subsequent sampling events shall be selected, subject to Agency review and approval, based on the results of initial soil sampling and analysis, and upon composition of the wastes that are or have been managed at the Facility. The rationale for selection of all parameters shall be provided.

c. The RFI Work Plan shall provide for documentation of the following information, including any associated calculations, derivations or assumptions:

i) A description of the vertical and horizontal extent of contamination for all 40 C.F.R. Part 264, Appendix IX contaminants detected in soil at the Facility.

ii) A description of contaminant properties and contaminant/soil interactions within the contaminant source area and plume. Examples of properties and interactions which may be required include contaminant solubility, speciation, adsorption, leachability, retardation coefficients, biodegradability, hydrolysis, photolysis, oxidation, soil cation exchange capacity, and other factors that might affect contaminant migration and transformation. This information shall be presented in sufficient detail to fulfill the objectives of the RFI.

iii) Concentrations of each contaminant in all soil samples.

iv) The rate and direction of contaminant migration and a prediction of future contaminant migration rate, including consideration of releases of contamination from soils and fill to groundwater.

d. The RFI Work Plan may allow submittal of existing information on soil contamination at the Facility as part of the Investigation, if the Permittee can determine and certify that the existing data meets the technical, representativeness, and quality assurance/quality control requirements of the RFI Work Plan.

C. Reporting

The RFI Work Plan shall specify the outline and format for the RFI Report to present the findings of the investigation. The RFI Work Plan shall specify groundwater data reporting procedures which are consistent with Agency Region 10 Ground-Water Data Management System. These specifications shall include, but are not limited to, the following:

1. Construction of contour maps of groundwater concentrations for all parameters selected based on the results of the initial round of sampling, or subsequent sampling, and subject to Agency review and approval. Contoured parameters will include the most abundant and representative constituents from each group including volatile organic, semi-volatile organic, metals, and pesticides, if detected. Additional constituents may be selected for contouring due to their high mobility or high toxicity. All contour maps shall be presented at a scale of one inch equals 50 feet or other such scale approved by Agency, and shall show facility cultural features sufficient for clear representation of any plume, and all affected down-gradient areas. All wells in the sampling program shall be accurately located on the map, and the concentrations of each constituent shall be clearly visible. Data manipulation, such as kriging, is not to be employed. Contour intervals shall be selected to clearly indicate changes in concentration within any plume, and are subject to Agency review and approval.

2. Construction of flow nets, maps and cross sections showing surface discharges of

groundwater that flows beneath the Facility, and delineating the extent of discharge of contaminated groundwater, and showing areas of groundwater discharge that may become contaminated due to continued migration of contaminants in the subsurface;

3. Maps and cross sections depicting the estimated migration rates for contaminants in groundwater, considering advection, dispersion, adsorption, and degradation processes.

The RFI report shall describe all input data algorithms, estimates, assumptions, boundary conditions, sensitivity analyses, and model calibration procedures used to derive these predictions of groundwater contaminant migration.

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ATTACHMENT B

SAMPLING AND ANALYSIS AND DATA MANAGEMENT PROGRAM REQUIREMENTS

Each RCRA Facility Investigation Work Plan shall include a plan to document all monitoring procedures (including all sampling, field measurements, and sample analysis performed during the investigation to characterize the environmental setting, source of contamination, and concentration of contaminants) so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. The plan shall include the following:

A. Data Quality Assurance Plan

1. Data Collection Strategy

The strategy section of the Data Collection Quality Assurance Plan shall include, but not be limited to, the following:

a. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses; and

b. Description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;

2. Sampling

The Sampling section of the Data Collection Quality Assurance Plan shall discuss:

a. Sampling methods including, identification of sampling equipment, purging procedures, and decontamination procedures to be used;

b. Criteria for selecting appropriate sampling locations, depths, etc.;

c. Criteria for providing a statistically sufficient number of sampling sites;

d. Methods for measuring all necessary ancillary data;

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e. Criteria for determining conditions under which sampling should be conducted;

f. Criteria for identifying which parameters are to be measured, and criteria for determining where specific parameters will be measured;

g. Criteria for identifying the type of sampling (e.g., composites vs. grabs) and number of samples to be collected;

h. Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

i. Methods and documentation of field sampling operations and procedures, including:

(1) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters and adsorbing reagents);

(2) Procedures and forms for recording the exact location, sampling conditions, sampling equipment and visual condition of samples;

(3) Documentation of specific sample preservation method;

(4) Calibration of field devices;

(5) Collection of replicate samples;

(6) Submission of field-biased blanks, where appropriate;

(7) Potential interferences present at the facility;

(8) Field equipment listing and sample containers;

(9) Sampling order; and

(10) Decontamination procedures.

j. Selection of appropriate sample containers;

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k. Sample preservation methods; and

l. Chain-of-custody procedures, including:

(1) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment; and

(2) Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Field Measurements

The Field Measurements section of the Data Collection Quality Assurance Plan shall discuss:

a. Selecting appropriate field measurement locations, depths, etc.;

b. Providing a statistically sufficient number of field measurements;

c. Measuring all necessary ancillary data;

d. Determining conditions under which field measurements should be conducted;

e. Determining which media are to be addressed by appropriate field measurements (e.g., ground water, air, soil, sediment, etc.);

f. Determining which parameters are to be measured and where;

g. Selecting the frequency of field measurement and length of field measurements period; and

h. Documenting field measurement operations and procedures, including:

(1) Procedures and forms for recording raw data and the exact location, tidal conditions, time, and sampling conditions;

(2) Calibration of field devices;

(3) Collection of replicate measurements;

(4) Submission of field-biased blanks, where appropriate;

(5) Potential interferences present at the facility;

(6) Field equipment listing; and

(7) Decontamination procedures.

4. Sample Analysis

The Sample Analysis section of the Data Collection Quality Assurance Plan shall specify the following:

a. Chain-of-custody procedures, including:

(1) Certification that all samples obtained pursuant to this Order for analysis will be delivered to a responsible person at the recipient laboratory who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

(2) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracing report sheets; and

(3) Specification of chain-of-custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage procedures and storage times;

c. Sample preparation methods;

d. Analytical procedures, including:

(1) Scope and application of the procedure;

(2) Sample matrix;

(3) Potential interferences;

(4) Precision and accuracy of the methodology; and

(5) Method detection limits.

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e. Calibration procedures and frequency;

f. Data reduction, validation, and reporting;

g. Internal quality control checks, laboratory performance, and systems audits and frequency, including:

(1) Method blank(s);

(2) Laboratory control sample(s);

(3) Calibration check sample(s);

(4) Replicate sample(s);

(5) Matrix-spiked sample(s);

(6) "Blind" quality control;

(7) Control charts;

(8) Surrogate samples;

(9) Zero and span gases; and

(10) Reagent quality control checks.

B. Data Management Plan

A Data Management Plan shall be developed and initiated to document and track investigation data and results. This plan shall identify and establish data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

a. Unique sample or field measurement code;

b. Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;

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c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Result of analysis (e.g., concentration);

f. Elevations of reference points for all ground water level measurements, including water level elevation, top of casing elevation, and ground surface elevation; and

g. Magnetic computer records of all ground water, soil, surface water, and sediment analytical data meeting the format specifications of the US EPA Region 10 groundwater data management system.

2. Tabular Displays

The following data shall be presented in tabular displays, as appropriate:

a. Unsorted (raw) data;

b. Results for each medium and each constituent monitored;

c. Data reduction for statistical analysis;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. Graphical Displays

At a minimum, the following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

a. Displays of sampling location and sampling grid;

b. Identification of boundaries of sampling area and areas where more data are required;

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c. Displays of concentrations of contamination at each sampling location;

d. Displays of geographical extent of contamination;

e. Areal and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;

f. Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;

g. Identification of features affecting intramedia transport and identification of potential receptors;

h. For each round of groundwater level measurements, maps showing the distribution of head measurements in each aquifer at a scale of one inch equals 50 feet and a contour interval of one-half foot; and

i. For each well, provide a hydrograph that shows the distribution of water level measurements taken during the RFI for the time interval of the investigation.

C. Data Reporting

Permittee shall provide notification of availability to EPA and Ecology of all data obtained pursuant to this HSWA permit within thirty (30) days of receipt by Permittee, or after completion of quality assurance/quality control activities, if applicable. This notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to this HSWA permit.

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ATTACHMENT C

SCOPE OF WORK FOR CORRECTIVE MEASURE STUDY

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate corrective action alternatives and to recommend corrective measure(s) to be taken at the Facility.

SCOPE

The scope of the CMS will depend on the needs at the Facility as determined by the RFI; EPA may determine that an abbreviated CMS is sufficient for the Facility. Deviations from this scope of work may be made only with prior Agency approval, based on the findings of the RFI. In general, the CMS will consist of the following four tasks:

TASK 1: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVES

Based on the results of the RFI, Permittee shall identify, screen, and develop the alternatives for removal, containment, treatment, and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the Facility and the known nature and extent of the contamination as documented by the RFI. The Permittee shall also make a Facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and identify technologies which are applicable at the Facility. The Permittee shall screen corrective measure technologies and any supplement technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on

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eliminating those technologies which have severe limitations for a given set of waste and Facility-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Facility, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Facility Characteristics

   Facility data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by Facility characteristics should be eliminated from further consideration.

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by waste characteristics at the Facility may be eliminated from consideration. Waste characteristics particularly affect the feasibility of on-facility methods, direct treatment methods, and land disposal.

3. Technology Limitations

   During the screening process the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process.

C. Identification of Corrective Measure Alternatives

The Permittee shall develop the corrective measure alternative or alternatives based on the corrective action objectives and analysis of corrective measure technologies. The Permittee shall rely on engineering practice to determine which of the identified technologies appear most suitable for the facility. Technologies can be combined to form the overall corrective action alternative or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each

appear to adequately address all facility problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies.

TASK 2: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the initial screening in Task 1 and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health, and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes, but is not limited to, an evaluation of the following factors:

1. Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability, and safety.

a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

i) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or facility characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time.

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Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technologies, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activity should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate: whether the technologies have been used effectively under similar conditions; whether the combination of technologies have been used together effectively; whether failure of any on technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the Facility.

c. Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response;

i) Constructability is determined by conditions both internal and external to the Facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the Facility (e.g., remote location

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vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-facility treatment or disposal facilities; and

ii) Time has two components that shall be addressed: the time it takes to implement a corrective measure; and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the Facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short and long-term beneficial and adverse effects of the response alternative; adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health

The Permittee shall assess each alternative in terms of the extent of which it mitigates short and long-term exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-facility, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and their reduction over time. For

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management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to the Agency.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of federal, state, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alterative shall be assessed.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (including estimates for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

TASK 3: JUSTIFICATION AND RECOMMENDATION OF CORRECTIVE MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Agency will select the corrective measure(s) to be implemented based on the results of Tasks 2 and 3. At a minimum, the following criteria will be used to justify the final corrective measure(s).

A. Technical

1. Performance -- Corrective measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability -- Corrective measures which do not require frequent or complex operation and maintenance activities, and have been proven effective under waste

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and Facility conditions similar to those anticipated will be given preference;

3. Implementability -- Corrective measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety -- Corrective measures which pose the lowest threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

Corrective measures must comply with existing Agency criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure over time are preferred.

C. Environmental

Corrective measures posing the lowest adverse impact (or greatest improvement) to the environment over the shortest period of time will be favored.

TASK 4: REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results of Tasks 1 through 3 and recommending a corrective measure alternative.

A. The Report shall, at a minimum, include:

1. A description of the Facility

   a. Facility topographic map and preliminary layouts

2. A summary of the corrective measure(s):

   a. Description of the corrective measure or measures and rationale for selection;

   b. Performance expectations, including an evaluation of the overall protectiveness of human health and the environment, ability to attain the corrective action objectives, ability to control the source(s) of release(s), and an assessment of short-term and of long-term reliability and effectiveness including,

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but not limited to, the methodology used to estimate the short-term an long-term reduction of toxicity, mobility, or volume of waste and the resulting estimate;

c. Preliminary design criteria and rationale, including an estimate and analysis of quantity, volume, and/or toxicity of the waste generated including, but not limited to, contaminated soil, sludge, and groundwater, and methods to minimize the volume, toxicity, and/or mobility of the waste to be generated;

d. General operation and maintenance requirements; and

e. Long-term monitoring requirements.

3. A summary of the RFI and impact on the selected corrective measure or measures:

a. Field studies (groundwater, surface water, soil, air); and

b. Treatability studies (bench scale, pilot scale).

4. Design and Implementation Precautions:

a. Special technical problems;

b. Additional engineering data required;

c. Permits and regulatory requirements, including an assessment of how institutional and legal requirements including federal, State, or local environmental or public health standards, regulations, and/or ordinances will affect the design, operation, and timing of each corrective measure studied;

d. Access, easement, right-of-way;

e. Health and safety requirements; and

f. Community relations activities.

5. Cost Estimates and Schedules:

a. Capital cost estimate;

b. Operation and maintenance cost estimate; and

c. Project schedule (design, construction, operation).

6. A recommendation as to which corrective measure(s), in the Permittee's opinion, are the most appropriate and the rationale for such recommendation.

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ATTACHMENT D

SCOPE OF WORK FOR THE CORRECTIVE MEASURE IMPLEMENTATION

PURPOSE

The purpose of the Corrective Measure Implementation (CMI) program is to design, construct, operate, maintain, and monitor the performance of the corrective measure(s) selected to protect human health and the environment.

SCOPE

The scope of the Corrective Measure Implementation Workplan will depend on the needs of the Facility. Deviations from this Scope of Work may be made only with prior Agency approval, based on the nature of the selected Corrective Measure. In general, the Corrective Measure Implementation program will consist of the following four tasks:

TASK 1: CORRECTIVE MEASURE IMPLEMENTATION PLAN

The Permittee shall prepare a Corrective Measure Implementation Plan. This plan will include the development and implementation of several plans, which require concurrent preparation. It may be necessary to revise plans as the work is performed to focus efforts on a particular problem. The Program Plan includes the following:

A. Program Management Plan

Permittee shall prepare a Program Management Plan which will document the overall management strategy for performing the design, construction, operation, maintenance, and monitoring of corrective measure(s). The plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation. The Program Management Plan will also include a description of qualifications of key personnel directing the Corrective Measure Implementation program, including contractor personnel.

B. Community Relations Plan

The Permittee shall revise the Community Relations Plan to include any changes in the level of concern or information needs of the community for design and construction activities.

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1. Specific activities which must be conducted during the design stage include the following:

   a. Revise the Public Involvement Plan to reflect knowledge of citizen concerns and involvement at this stage of the process; and

   b. Prepare and distribute a public notice and an updated fact sheet at the completion of engineering design.

2. Depending on citizen interest, specific activities to be conducted during the construction stage could range from group meetings to fact sheets on the technical status of the project.

TASK 2: CORRECTIVE MEASURE DESIGN

A. Design Plans and Specifications

The Permittee shall develop clear and comprehensive design plans and specifications which include, but are not limited to, the following:

1. Discussion of the design strategy and the design basics, including:

   a. Compliance with all applicable or relevant environmental and public health standards; and

   b. Minimization of environmental and public impacts.

2. Discussion of the technical factors of importance including:

   a. Use of currently accepted environmental control measures and technology;

   b. The constructability of the design; and

   c. Use of currently acceptable construction practices and techniques.

3. Description of assumptions made and detailed justification for these assumptions;

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4. Discussion of the possible sources of error and references to possible operation and maintenance problems;

5. Detailed drawings of the proposed design;

6. Tables listing equipment and specifications;

7. Appendices including:

   a. Sample calculations (one example presented and explained clearly for significance of unique design calculations);

   b. Results of laboratory or field tests.

B. Operation and Maintenance Plan

The Permittee shall prepare an Operation and Maintenance Plan to cover both implementation and long-term maintenance of the corrective measure. The plan shall be composed of the following elements:

1. Description of potential operating problems:

   a. Description of analysis of potential operation problems;

   b. Sources of information regarding problems; and

   c. Common and/or anticipated remedies.

2. Description of alternate operation and maintenance:

   a. Should systems fail, alternate procedures to prevent undue hazard; and

   b. Analysis of vulnerability and additional resource requirements should a failure occur.

3. Safety Plan:

   a. Description of precautions, or necessary equipment, etc., for facility personnel; and

   b. Safety tasks required in event of systems failure.

4. Description of equipment; and

a. Equipment identification;

b. Installation of monitoring components;

c. Maintenance of facility equipment; and

d. Replacement schedule for equipment and installed components.

5. Records and reporting mechanisms required.

a. Daily operating logs;

b. Laboratory records;

c. Records for operating costs;

d. Mechanism for reporting emergencies; and

e. Personnel and maintenance records.

A Draft Operation and Maintenance Plan shall be submitted simultaneously with the Prefinal Design Document required by Task II.F.6 of this Attachment, and the Final Operation and Maintenance Plan shall be submitted simultaneously with the Final Design Documents.

C. Project Schedule

The Permittee shall develop a Project Schedule for construction and implementation of the corrective measure(s) which identify timing for initiation and completion of all critical path tasks. The Permittee shall specifically identify dates for completion of the project and major interim milestones. An Initial Project Schedule shall be submitted simultaneously with the Prefinal Design Document submission and the final Project Schedule with the Final Design Document.

D. Construction Quality Assurance Objectives

The Permittee shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to, the following: responsibility and authority, personnel qualifications, inspection activities, sampling requirements, and documentation.

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E. Health and Safety Plan

The Permittee shall develop the Health and Safety Plan to address the activities to be performed at the Facility to implement the corrective measure(s).

F. Design Phases

The design of the corrective measure(s) should include the phases outlined below.

1. Preliminary Design

The Permittee shall submit the preliminary design when the design effort is approximately 30 percent complete. At this stage, Permittee shall have field verified the existing conditions of the Facility. The preliminary design shall reflect a level of effort such that the technical requirements of the project have been addressed and outlined so that they may be reviewed to determine if the final design will provide operable and usable corrective measure(s). Supporting data and documentation shall be provided with the design documents, defining the functional aspects of the program. The preliminary construction drawings by the Permittee shall reflect organization and clarity. The scope of the technical specifications shall be outlined in a manner reflecting the final specifications. The Permittee shall include with the preliminary submission, the design calculations which reflect the same percentage of completion as the designs they support.

2. Intermediate Design

Complex project design may necessitate review of the design documents between the preliminary and the prefinal/final design. At its discretion, EPA may require design review at 60 percent completion of the project. The intermediate design submittal should include the same elements as the prefinal design.

3. Correlating Plans and Specifications

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications, the Permittee shall:

a. Coordinate and cross-check the specifications and drawings; and

b. Complete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

These activities shall be completed prior to the 95 percent prefinal submittal to EPA.

4. Equipment Start-up and Operator Training

The Permittee shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, start-up, and operation of the treatment systems, and training covering appropriate operations procedures once the start-up has been successfully accomplished.

5. Additional Studies

Corrective Measure Implementation may require additional studies to supplement the available technical data. At the direction of the Agency for any such studies required, the Permittee shall furnish all services, including field work as required, materials, supplies, plant, labor, equipment, investigations, studies and supervision. Sufficient sampling, testing, and analysis shall be performed to optimize the required treatment and/or disposal operations and systems. There shall be an initial meeting of all principal personnel involved in the development of the program. The purpose will be to discuss objectives, resources, communication channels, roles of personnel involved, orientation of the facility, etc. The interim report shall present the results of the testing with the recommended treatment or disposal systems (including options). A review conference shall be scheduled after the interim report has been reviewed by all interested parties. The final report of the testing shall include all data taken during the testing and a summary of the results of the studies.

6. Prefinal and Final Design

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If required by Agency, the Permittee shall submit the prefinal/final design documents in two parts. The first submission shall be at 95 percent completion of design (i.e., prefinal). After approval of the prefinal submission, the Permittee shall execute the required revisions and submit the final documents 100 percent complete with reproducible drawings and specifications.

The prefinal design submittal shall consist of the Design Plans and Specifications, Operation and Maintenance Plan, Capital and Operating and Maintenance Cost Estimate, Project Schedule, Quality Assurance Plan, and Specifications for the Health and Safety Plan.

The final design submittal consists of the Final Design Plans and Specifications (100 percent complete), the Permittee's Final Construction Cost Estimate, the final Operation and Maintenance Plan, Final Quality Assurance Plan, Final Project Schedule, and Final Health and Safety Plan specifications. The quality of the design documents should be such that the Permittee would be able to include them in a bid package and invite contractors to submit bids for the construction project.

TASK 3: CORRECTIVE MEASURE CONSTRUCTION

Following Agency approval of the final design, the Permittee shall develop and implement a construction quality assurance (CQA) program to ensure, with a reasonable degree of certainty, that the completed corrective measure(s) meets or exceeds all design criteria, plans, and specifications. The CQA plan is a facility specific document which must be submitted to the Agency for approval prior to the start of construction. At a minimum, the CQA plan should include the elements summarized below. Upon Agency approval of the CQA plan, the Permittee shall construct and implement the corrective measure in accordance with the approved design, schedule, and the CQA plan. The Permittee shall also implement the elements of the approved Operation and Maintenance plan.

A. Responsibility and Authority

The responsibility and authority of all organizations (e.g., technical consultants, construction firms, etc.) and key personnel involved in the construction of the corrective measure(s) shall be described fully in the CQA plan. The Permittee must identify a CQA officer and the necessary supporting inspection staff.

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B. Construction Quality Assurance Personnel Qualifications

The qualifications of the CQA officer and supporting inspection personnel shall be presented in the CQA plan to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

C. Inspection Activities

The observations and tests that will be used to monitor the construction and/or installation of the components of the corrective measure(s) shall be summarized in the CQA plan. The plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with all environmental requirements and include, but not be limited to, air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. The inspection should also ensure compliance with all health and safety procedures. In addition to oversight inspections, the Permittee shall conduct the following activities.

1. Preconstruction Inspection and Meeting

Permittee shall conduct a preconstruction inspection and meeting to:

a. Review methods for documenting and reporting inspection data;

b. Review methods for distributing and storing documents and reports;

c. Review work area security and safety protocol;

d. Discuss any appropriate modifications of the construction quality assurance plan to ensure that facility-specific considerations are addressed; and

e. Conduct a facility walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person and minutes of this meeting should be transmitted to all parties.

2. Prefinal Inspection

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Upon preliminary project completion, the Permittee shall notify the Agency for the purposes of conducting a prefinal inspection. The prefinal inspection will consist of a walk-through inspection of the entire project facility. The inspection is to determine whether the project is complete and consistent with the contract documents and the Agency-approved corrective measure(s). Any outstanding construction items discovered during the inspection will be identified and noted. Treatment equipment will be operationally tested by the Permittee. The Permittee will certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. The prefinal inspection report should outline the outstanding construction items, actions required to resolve items, completion date for these items, and date for final inspection.

3. Final Inspection

Upon completion of any outstanding construction items, the Permittee shall notify the Agency for the purpose of conducting a final inspection. The final inspection will consist of a walk-through inspection of the project facility. The prefinal inspection report will be used as a checklist with the final inspection focusing on the outstanding construction items identified in the prefinal inspection. Confirmation shall be made that outstanding items have been resolved.

D. Sampling Requirements

The sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems as addressed in the project specifications should be presented in the CQA plan.

E. Documentation

Reporting requirements for CQA activities shall be described in detail in the CQA plan. This should include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records also should be presented in the CQA plan.

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TASK 4: REPORTS

The Permittee shall prepare plans, specifications, and reports as set forth in Tasks 1 through 3 to document the design, construction, operation, maintenance, and monitoring of the corrective measure. The documentation shall include, but not be limited to, the following:

A. Progress

The Permittee shall provide EPA and Ecology with quarterly progress reports during the design and construction phases, and for operation and maintenance activities, containing:

1. A description and estimate of the percentage of the CMI completed;

2. Summaries of all findings;

3. Summaries of all changes in the CMI during the reporting period;

4. Summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period;

5. Summaries of all problems or potential problems encountered during the reporting period;

6. Actions being taken to rectify problems;

7. Changes in personnel during the reporting period;

8. Projected work for the next reporting period; and

9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

The Permittee shall provide the Agency with quarterly progress reports during implementation of the selected corrective measure(s), demonstrating the effectiveness of the corrective action program in accordance with the final Facility-specific performance standards, and describing all operation and maintenance activities performed during the reporting period. This progress report shall include items 3 through 9 specified above in Task 4.A.

B. Draft

1. The Permittee shall submit a draft Corrective Measure Implementation Plan as outlined in Task 1.

2. The Permittee shall submit draft Construction Plans and Specifications, Design Reports, Cost Estimates, Schedules, Operation and Maintenance plans, and Study Reports as outlined in Task 2.

3. The Permittee shall submit a draft Construction Quality Assurance Program Plan and Documentation as outlined in Task 2.

C. Final

The Permittee shall finalize the Corrective Measure Implementation Plan, Construction Plans and Specifications, Design Reports, Cost Estimates, Project Schedule, Operation and Maintenance Plan, Study Reports, Construction Quality Assurance Program Plan/Documentation, and the Corrective Measure Implementation Report incorporating comments received on draft submissions.

1. At the completion of the construction of the project, Permittee shall submit a Corrective Measure Implementation Report to EPA and Ecology. The Report shall document that the project is consistent with the design specifications, and that the corrective measure is performing adequately. The Report shall include, but not be limited to, the following elements:

   a. Synopsis of the corrective measure(s) and certification of the design and construction;

   b. Explanation of any modifications to the plans and why these were necessary for the project;

   c. Listing of the criteria, established before the corrective measure was initiated, for judging the functioning of the corrective measure and also explaining any modification to these criteria;

   d. Results of Facility monitoring, indicating that the corrective measure will meet or exceed the performance criteria; and

   e. Explanation of the operation and maintenance (including monitoring) to be undertaken at the facility.

This report should include all of the inspection summary reports, inspection data sheets, problem identification and corrective measure reports, photographic reporting data sheets, design engineers' acceptance reports, deviations from design and material specification (with justifying documentation), and as-built drawings.

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ATTACHMENT E

INTERIM MEASURES REQUIREMENTS

The following conditions shall apply to the performance of interim measures at the Facility:

1. The Permittee shall continuously consider and evaluate information regarding releases at the Facility, and the nature and extent of contamination from hazardous wastes and/or hazardous constituents at or from the Facility, as learned in connection with performance of the RFI or other investigations. In the event the Permittee identifies an imminent and substantial endangerment to human health or the environment based on such information, the Permittee shall immediately notify EPA and Ecology orally, and shall notify EPA and Ecology in writing within seven (7) days, summarizing the immediacy and magnitude of such identified threats.

2. If the Agency determines that any release or threat of release of hazardous wastes, hazardous constituents, or hazardous substance(s) at or from the Facility presents an imminent and substantial endangerment to human health or the environment, then the Permittee shall formulate a set of interim or stabilization measures. This determination will be based on the Permittee's evaluation, and/or an independent evaluation by the Agency, of information indicating an imminent and substantial endangerment to human health or to the environment. Interim or stabilization measures shall be those which, when implemented, will mitigate the release or threat of release, or which can effectively mitigate the impact on receptors affected by such releases. To the maximum extent practicable, interim and stabilization measures should be consistent with and capable of being integrated into long term corrective measures at the Facility. The Permittee shall prepare and submit within twenty-one (21) days, or by such earlier or later date as may be required by the Agency, an interim measures ("IM") workplan to address the release or threat of release that presents an imminent and substantial endangerment to human health or the environment. This workplan shall include:

    (a) Interim Measure Objectives;
    (b) A Health and Safety Plan;
    (c) A Public Involvement (or Community Relations) Plan;
    (d) A Data Collection Quality Assurance Plan;
    (e) A Data Management Plan;

(f) Design and Specifications;
(g) An Operation and Maintenance Plan;
(h) A Project Schedule;
(i) An Interim Measure Construction Quality Assurance Plan; and
(j) Reporting Requirements.

3. Upon acceptance or modification by the Agency of an IM Work Plan, the Permittee shall commence work and implement the tasks required by the IM Plan according to the Project Schedule included therein. The Permittee shall implement these tasks in accordance with the requirements and specifications stated in the IM Work Plan as accepted or modified by the Agency.

4. Within thirty (30) days after the effective date of this HSWA permit, or by such earlier or later date as may be required by the Agency, the Permittee shall submit to the Agency for its review and approval, and to Ecology, a plan to ensure that all trucks loaded with hazardous wastes that are parked on the Permittee's property will be parked within secondary containment. The Permittee may comply with this requirement through operational controls or construction projects, or both. This plan shall provide the design and construction specifications and operation and maintenance requirements and schedules for any design, construction and maintenance that will be implemented to fulfill this requirement.

5. If the Permittee elects to perform an interim or stabilization measure, and the Agency has not determined that a release or threat of release of hazardous wastes or hazardous constituents at or from the Facility may present an imminent and substantial endangerment to human health or the environment, then the Permittee shall submit a written request to the Agency for review and approval of the proposed action, unless emergency action is required. Any interim or stabilization measures must be in the public interest and, to the maximum extent practicable, be consistent with future corrective actions. The Permittee shall secure prior written Agency approval to perform any interim or stabilization measure or other work at the Facility, unless emergency action is required. This requirement shall not apply to normal maintenance and operations activities, to the extent that these activities do not affect interim, stabilization or corrective measures, or investigations carried out pursuant to this HSWA permit.

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