

ROUTING AND TRANSMITTAL SLIP

Date

12/01/92

TO: (Name, office symbol, room number, building, Agency/Post)

Initials

Date

1. Cliff Clark

2. Steve Lawler

3. Toby Michelena

4.

5.

Action	File	Note and Return
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As Requested	For Correction	Prepare Reply
Circulate	<input checked="" type="checkbox"/> For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

- Attached is DRAFT RD:D Permit for your information.
- There are additional revisions that will have to be made based on the revised certified RD:D application.
- Call me if you have any questions or need any additional information.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org symbol, Agency/Post)

Room No.—Bldg.

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Phone No.
(206) 553-6693

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DRAFT RD&D PERMIT 11/30/92

**JOINT PERMIT FOR DANGEROUS WASTE RESEARCH, DEVELOPMENT,
AND DEMONSTRATION TREATMENT AND STORAGE ACTIVITY**

**DEPARTMENT OF ECOLOGY
NUCLEAR AND MIXED WASTE PROGRAM
P.O. BOX 47600
OLYMPIA, WASHINGTON 98504
(206) 438-7021**

**U.S. ENVIRONMENTAL PROTECTION
AGENCY REGION 10
1200 SIXTH AVENUE, HW-112
SEATTLE, WASHINGTON 98101
(206) 553-1261**

Issued in accordance with the applicable provisions of 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: U.S. Department of Energy
P.O. Box 550
825 Jadwin Avenue
Richland, WA 99352**

**Westinghouse Hanford
Company
P.O. Box 1970
Richland, WA 99352**

This Permit is effective as of _____, and shall remain in effect until _____, and shall not exceed 365 operating days of the Dangerous Waste Research, Development and Demonstration Treatment Activity authorized by this Permit, unless revoked and reissued, or terminated under WAC 173-303-830(3) and (5), WAC 173-303-809, 40 CFR §§ 270.41, 270.43 or 270.65.

**ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY AND
WASHINGTON DEPARTMENT OF ECOLOGY**

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

**Roger F. Stanley, Program Manager
Nuclear and Mixed Waste Program
Department of Ecology**

Date _____

Date _____

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INTRODUCTION

Permittees: U.S. Department of Energy Westinghouse Hanford Company

Environmental Protection Agency Identification
Number: WAD798008967

Pursuant to the Solid Waste Disposal Act (42 U.S.C. §§3251 et seq., as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. §6901 et seq. (RCRA), and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and regulations promulgated thereunder by the United States Environmental Protection Agency (Agency) in Title 40 of the Code of Federal Regulations, and pursuant to Chapter 70.105 RCW, the Hazardous Waste Management Act of 1976, as amended in 1980 and 1983, and regulations promulgated thereunder by the Department of Ecology (Department), codified in Chapter 173-303 WAC, Dangerous Waste Regulations, a Permit is issued to Department of Energy-Richland Field Office (owner and operator) and to the Westinghouse Hanford Company (co-operator), (hereafter called the Permittees), to operate a dangerous waste research, development, and demonstration treatment and storage activity located in Richland, Washington, at the Engineering and Environmental Demonstration Laboratory, Building ~~1706~~-KE, at latitude 46°38'57.2" and longitude 119°35'34.5" and at the Liquid Effluent Retention Facility at latitude 48°33'42.33" and longitude 119°30'21.70".

The Permittees must comply with all terms and conditions of this Permit and in Attachments 1 through 11. When this Permit and the above attachments conflict, the wording of the Permit will prevail.

The Permittees must comply with all applicable federal regulations in 40 CFR Parts 124, 260 through 266, Part 268 and 270 and all applicable state regulations in WAC 173-303. Applicable state and federal regulations are those which are in effect on the date of final administrative action on this Permit and self implementing statutory provisions and regulations which, according to the requirements of RCRA (as amended), or state law, are automatically applicable to the Permittees' dangerous waste 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 Permittees' failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittees' 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 Permittees must inform the Director and Administrator of any deviation from Permit

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conditions or changes in the information provided in the ~~Part B~~ Permit application. In particular, the Permittees shall inform the Director and Administrator of any proposed changes that might affect the Permittees' ability to comply with applicable regulations and Permit conditions, or which may alter any of the conditions of the Permit in any way.

At this time, the state of Washington authorized RCRA program pursuant to Section 3006 of RCRA, as amended, does not include Research, Development, and Demonstration Permits. Therefore, this Permit is issued by the Agency directly pursuant to Section 3005(g) of HSWA. The state of Washington issues this Permit pursuant to the Hazardous Waste Management Act of 1976 as amended.

The Agency and the Department shall enforce all Permit conditions in this Permit. All Permit conditions are based on concurrent federal/state authority. Any challenges to the Agency of this Permit shall be appealed to the Agency in accordance with 40 CFR §124.19. Any challenges to the Department of this Permit shall be appealed to the Department in accordance with WAC 173-303-845.

During the lifetime of this Permit, the state of Washington may become authorized pursuant to Section 3006 of RCRA, as amended, to issue Dangerous Waste Research, Development, and Demonstration Permits. This authorization will not change the conditions of this Permit in any substantive manner. Any citations to federal statutes or regulations shall become citations to the 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 to the Director. The Agency shall maintain an oversight role of the state authorized program and, in such capacity, shall enforce any Permit condition based on state requirements if, in the Agency's judgement, the Department should fail to enforce that Permit condition.

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LIST OF ATTACHMENTS

The following listed documents are excerpts from the Permittees' Waste Water Pilot Plant Research, Development and Demonstration Permit Application. The listed documents are hereby incorporated, in their entirety, by reference into this Permit, with the exception that other portions of the Permittees' Waste ~~Water~~ Pilot Plant Research, Development and Demonstration Permit Application, not hereby listed, which are referenced in these listed documents are not incorporated this Permit. Also information included in the listed documents which is referred to as illustrative or for information purposes is not incorporated into this Permit. 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 original Attachment. These incorporated Attachments are enforceable conditions of this Permit, as modified by the specific Permit condition.

Attachment 1 Facility Description and Maps of Facility Location, consisting of:

Subsection 1.4, pages 1-4 through 1-5 of permit application, as last revised April 22, 1992.

Subsection 1.5, pages 1-5 through 1-6 of permit application, as last revised April 22, 1992.

Section 1.0, Figure 1-1, page F1-1 of permit application, as last revised April 22, 1992.

Section 1.0, Figure 1-3, page F1-3 of permit application, as last revised April 22, 1992.

Section 1.0, Figure 1-4, page F1-4 of permit application, as last revised April 22, 1992.

Appendix 1A, Drawing No. H-6-958, Rev. No. 3 of permit application, as last revised on November 21, 1991.

Appendix 1A, Drawing No. H-13-000015, Rev. 0 of permit application, as prepared on September 18, 1991.

Appendix 1A, Drawing No. H-2-81570, Rev. 0 of permit application, as prepared on May 8, 1991.

Attachment 2 Demonstration Plan, consisting of:

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Subsection 2.1, pages 2-1 through 2-4 of permit application, as last revised on April 22, 1992.

Subsection 2.2, pages 2-4 through 2-5 of permit application, as last revised on April 22, 1992.

Section 2, Table 2-1, page T2-1 of permit application, as last revised on April 22, 1992.

Attachment 3 Waste Analysis Plan, consisting of:

Section 3.0, pages 3-1 through 3-10 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-2, pages T3-2.1 through T3-2.2 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-2, page T3-2.2 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-3, page T3-3 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-4, pages T3-4.1 through T3-4.2 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-5, pages T3-5.1 through T3-5.2 of permit application, as last revised on April 22, 1992.

Attachment 4 Process Information, consisting of:

Subsection 4.1, pages 4-1 through 4-18 of permit application, as last revised on April 22, 1992.

Subsection 4.2, page 4-18 of permit application, as last revised on April 22, 1992.

Subsection 4.3, page 4-18 through 4-26 of permit application, as last revised on April 22, 1992.

Subsection 4.5, page 4-26 of permit application, as last revised on April 22, 1992.

Section 4.0, Figures 4-1 through 4-24, pages F4-1 through F4-24 of permit application, as last revised on April 22, 1992.

Section 4.0, Table 4-1, page T4-1 of permit application, as last revised on April 22, 1992.

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Section 4.0, Table 4-2, page T4-2 of permit application, as last revised on April 22, 1992.

Section 4.0, Table 4-3, pages T4-3.1 through T4-3.2 of permit application, as last revised on April 22, 1992.

Section 4.0, Table 4-4, pages T4-4.1 through T4-4.6 of permit application, as last revised on April 22, 1992.

Appendix 4A, Waste Water Plant Process Flow Diagram

Appendix 4C of permit application, as last revised on April 22, 1992.

Appendix 4D of permit application, as last revised on April 22, 1992.

Appendix 4E of permit application, as last revised on , 1992.

Attachment 5 Security Procedures, consisting of:
Subsection 5.1, page 5-1 of permit application, as last revised on April 22, 1992.

Attachment 6 Inspection Plan, consisting of:

Subsection 5.2, pages 5-1 through 5-2 of permit application, as last revised on April 22, 1992.

Appendix 5A, pages APP-5A-1 through APP-5A-11 of permit application, as last revised on April 22, 1992.

Appendix 5A, Figures 5A-1, page F5A-1 of permit application, as last revised on April 22, 1992.

Attachment 7 Preparedness and Prevention

Subsection 5.3, page 5-2 of permit application, as last revised on April 22, 1992.

Subsection 5.4, page 5-2 of permit application, as last revised on April 22, 1992.

Subsection 5.6, pages 5-3 through 5-5 of permit application, as last revised on April 22, 1992.

Appendix 5B, page APP 5B-1 of permit application, as last revised on April 22, 1992.

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Appendix 5B, Table 5B-1, pages APP T5B-1.1 through APP T5B 1.3 of permit application, as last revised on April 22, 1992.

Appendix 5B, Table 5B-2, pages APP T5B-2.1 through APP T5B-2.3 of permit application, as last revised on April 22, 1992.

Appendix 5B, Table 5B-3, pages APP T5B-3.1 through APPT5B-3.2 of permit application, as last revised on April 22, 1992.

Attachment 8 Contingency Plan, consisting of:
Section 6.0, page 6-1 of permit application, as last revised on April 22, 1992.

Appendix 6A, pages 1-26 of permit application, as last revised on February 1992.

Appendix 6A, Table 1, pages T-1.1 through T-1.2 of permit application, as last revised on February 1992.

Appendix 6A, Table 2, page T-2 of permit application, as last revised on February 1992.

Appendix 6A, Table 3, page T-3 of permit application, as last revised on February 1992.

Appendix 6A, Table 4, pages T-4.1 through T-4.2 of permit application, as last revised on February 1992.

Appendix 6B, pages 1 through 47 of permit application, as last revised on October 28, 1991.

Appendix 6C, pages 1 through 29 of permit application, as last revised on September 28, 1990.

Appendix I, pages 1 through 31 of permit application, as last revised on September 28, 1990.

Attachment A, pages 1 through 6 of permit application, as last revised on September 28, 1990.

Attachment 9 Personnel Training Plan, consisting of:

Section 7.0, pages 7-1 through 7-6 of permit application, as last revised on April 22, 1992.

Section 7.0, Table 7-1, page T7-1 of permit application, as last revised on April 22, 1992.

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Section 7.0, Table 7-2, page T7-2 of permit application, as last revised on April 22, 1992.

Section 7.0, Table 7-3, pages T7-3.1 through T7-3.7 of permit application, as last revised on April 22, 1992.

Attachment 10 Closure Plan, consisting of:

Subsection 8.1, pages 8-1 through 8-9 of permit application, as last revised on April 22, 1992.

Subsection 8.6, page 8-10 of permit application, as last revised on April 22, 1992.

Appendix 4F, Enclosure 1, pages 1 through 3 of permit application, as prepared on June 5, 1991.

Attachment 11 Quality Assurance Plan, consisting of:

Appendix 2A, Sections 1 through 16 of permit application, as last revised, April 1992.

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DEFINITIONS

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

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- a. 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.
 - b. The term **"Director"** shall mean the Director of the Washington State Department of Ecology or a 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 term **"Agency"** shall mean the U.S. Environmental Protection Agency, Region 10, (with the address specified on page one of this Permit).
 - e. The term **"Permit"** shall mean the joint Research, Development, and Demonstration Permit issued by the Washington State Department of Ecology, and by the Environmental Protection Agency, Region 10, pursuant to 42 U.S.C. 3251 et seq. and 40 CFR Parts 124 and 270.
 - f. The term **"facility"** or **"site"** shall mean the approximately 560 square miles in Southeastern Washington State including leased lands, State owned lands, and lands owned by the Bonneville Power Administration, 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 as specified in Attachment 1 of this Permit.
 - g. The term **"FFACO"** means the Hanford Federal Facility Agreement and Consent Order, as amended.
 - h. The term **"Permittees"** shall mean the United States Department of Energy (owner/operator) and the Westinghouse Hanford Company (co-operator).
 - j. The term **"Operating Day"** shall mean any fraction of a calendar day when conducting the dangerous waste Research Development, and Demonstration Treatment Activity authorized by this Permit.

- k. The term "RD&D Activity" shall mean Dangerous Waste Research, Development, and Demonstration Treatment and Storage Activity authorized by this Permit.
- l. Unless otherwise noted, all schedules refer to calendar time; i.e., thirty (30) days means thirty (30) calendar days.
- m. All definitions contained in 40 CFR Parts 124.2, 260.10, 270.2, 264.141, and WAC 173-303-040 are hereby incorporated, in their entirety, 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

The Permittees are authorized by this Permit to conduct RD&D Activity in accordance with the conditions of this Permit and in accordance with the applicable provision of Chapter 173-303 WAC and 40 CFR §262.34. This Permit does not authorize any other management of dangerous waste at this facility. Issuance of this Permit does not convey 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 laws or regulations.

I.B. GENERAL PERMIT CONDITIONS

I.B.1. The general Permit conditions under WAC 173-303-810 and 40 CFR §270.30, final facility standards under WAC 173-303-600 and 40 CFR Part 264, as applicable, are incorporated by reference into this Permit and must be adhered to by the Permittees.

I.B.2. The list of attachments on Pages 5, 6, 7, 8, and 9, of this Permit are incorporated by reference into this Permit. Facility operations must be in accordance to the contents of the attachments and this Permit.

I.B.3. 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 173-303-830(15) and 40 CFR §§260.2 and 270.12.

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 and WAC 173-303-809 and 40 CFR §§270.41, 270.42, 270.43, and 270.65. 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. Permit modifications at the request of the Permittee will be done according to the three tiered modification system, 40 CFR §270.42 and WAC 173-303-830(4) and Department guidance documents. This includes any modification from

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design drawings to as-builts, except where the modification from design drawings to as-builts would be covered under Permit condition II.M and/or II.A.2.

I.C.3. Protection of Human Health and the Environment. The Administrator or the Department may order an immediate termination of all operations under this Permit at any time he or she determines that termination is necessary to protect human health and the environment in accordance with 40 CFR §270.65(c) and WAC 173-303-809(3).

I.D. SEVERABILITY

I.D. 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 circumstances 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 basis for said condition.

I.E. DUTIES AND REQUIREMENTS

I.E.1. The Permittees shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under WAC 173-303-804 and 40 CFR §270.61. Any Permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of Chapter 70.105 RCW and RCRA, as amended, and is grounds for revocation and reissuance, or modification; or for denial of a Permit renewal application.

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

I.E.3. It shall not be a defense for the Permittees, 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 Permittees 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.

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- I.E.5. The Permittees shall at all times properly operate and maintain all activities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittees 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 procedures. This provision required the operation of back-up or auxiliary systems or similar systems only when necessary to comply with the conditions of this Permit.
- I.E.6. The Permittees shall furnish to the Administrator and the Director, within a reasonable time, any relevant information which the Administrator or Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittees shall also furnish to the Administrator and Director, upon request, copies of records required to be kept by this Permit.
- I.E.7. The Permittees shall allow the Administrator or the Director, or their authorized representatives, upon the presentation of credentials and other documents as may be required by law, to:
- I.E.7.a. Enter at reasonable times upon the Permittees' premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this Permit;
- I.E.7.b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
- I.E.7.c. Inspect at reasonable times any activities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- I.E.7.d. Sample or monitor, at reasonable times for the purposes of assuring Permit compliance or as otherwise authorized by RCRA, as amended, and Chapter 70.105 RCW, any substances or parameters at any location.
- I.E.8. The Permittees may not commence the dangerous waste research, development and demonstration storage or treatment activity until the Permittees has submitted to the Director and the Administrator, by certified mail or hand delivery, a letter signed by the Permittees and a registered professional engineer stating that the facility

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has been constructed or modified in compliance with the Permit; and:

- I.E.8.(a)** The Director and the Administrator, or their authorized representatives have inspected the modified or newly constructed activity and finds it in compliance with the conditions of the Permit; or
- I.E.8.(b)** The Administrator and the Director have either waived the inspection or has not within 15 days notified the Permittees of his or her intent to inspect.
- I.E.9.** Whenever the Permittees become aware that the Permittees 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 and the Administrator, the Permittee shall promptly submit such facts or information.
- I.F. Monitoring, Records and Reporting.**
- I.F.1.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity in accordance with Attachments 2, 3, 4, and 11 of this Permit.
- I.F.1.a.** The Permittees shall substitute analytical methods which are equivalent to those specifically approved for use in this permit in accordance with the following:
- I.F.1.a.i.** The Permittees submit to the Director and the Administrator a request for substitution of an analytical method(s) which is equivalent to the methods(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 analytical method(s) requested to be substituted in terms of sensitivity, accuracy, and precision (i.e., reproducibility).
- I.F.1.a.ii.** The Director and the Administrator notifies the Permittees 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 under WAC 173-303-830, WAC 173-303-809 or 40 CFR §§270.41, 270.42 or 270.65.
- I.F.2.** The Permittees shall retain records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for

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continuous monitoring instrumentation), records and results of inspections, copies of all reports required by this permit, the Final Project Report and records of all data used to complete the application for this Permit for a period of at least three (3) years from the date of the sample, measurement, report, certification, or recording. This three (3) year period may be extended by the Director or the Administrator at any time by notification, in writing to the Permittees, and is automatically extended to during the course of any unresolved enforcement action regarding this facility. The Permittees shall maintain these records in the information repositories in accordance with the FFAO.

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- I.F.3 Records of monitoring information shall specify:
 - I.F.3.a. The date(s), exact place ,and times of sampling or measurements;
 - I.F.3.b. The name, title, and affiliation of the individual(s) who performed the sampling or measurements;
 - I.F.3.c. The date(s) analyses were performed;
 - I.F.3.d. The name, title, and affiliation of the individual(s) who performed the analyses;
 - I.F.3.e. The analytical techniques or methods used; and
 - I.F.3.f. The results of such analyses, including the QA/QC summary.
 - I.F.4. The Permittees shall give at least thirty (30) calendar days advance notice, in writing, to the Director and the Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements. If advance notice of any planned changes in Permitted activity that might result in noncompliance with Permit requirements is not possible, then the Permittees shall give notice within twenty-four hours of the time it becomes aware of anticipated noncompliance. Such notice does not authorize any noncompliance with or modification of this Permit.
 - I.F.5. The Permittees shall give notice to the Administrator and the Director as soon as possible of any planned physical alterations or additions to the Permitted activity. Such notice does not authorize any noncompliance with or modification of this Permit.
 - I.F.6. **Twenty-Four Hour Reporting.**

The Permittees shall verbally report to the Administrator and Director any noncompliance which may endanger human health or the environment. Any such information shall be reported within 24 hours from the time the Permittees becomes aware of the noncompliance to the Administrator, and shall be reported immediately to the Director and the Administrator as soon as the Permittees become aware of the noncompliance. The immediate and 24 hour report shall include the following:

- I.F.6.a** Information concerning release of any dangerous waste that may cause an endangerment to public drinking water supplies.
- I.F.6.b.** Any information of a release or discharge or dangerous waste, or of a fire or explosion from the dangerous waste research, development and demonstration treatment and storage activity, which could threaten the environment or human health outside the activity. The description of the occurrence and its cause shall include:
- I.F.6.b.i.** Name, address, and telephone number of the owner or operator;
 - I.F.6.b.ii.** Name, address, and telephone number of the activity site;
 - I.F.6.b.iii.** Date, time, and type of incident;
 - I.F.6.b.iv.** Name and quantity of material(s) involved;
 - I.F.6.b.v.** The extent of injuries, if any;
 - I.F.6.b.vi.** An assessment of actual or potential hazard to the environment and human health outside the activity, where this is applicable; and
 - I.F.6.b.vii.** Estimated quantity and disposition of recovered material that resulted from the incident.
- I.F.7.** A written submission shall also be provided to the Administrator and Director within five (5) calendar days of the time the Permittees become aware of the noncompliance that might endanger human health and the environment. The written submission shall contain a description of noncompliance and its cause; the periods of

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noncompliance (including exact dates and times); if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

I.F.8. The Permittees shall report to the Director and the Administrator all other instances of noncompliance not otherwise required to be reported above, at the time monitoring reports are submitted. The reports shall contain the information listed in Permit condition I.F.7. For the purposes of the Permit condition, the term "noncompliance" shall be defined as noncompliance with this Permit.

I.F.9 Whenever the Permittees becomes aware that he or she failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Administrator or the Director, the Permittees shall promptly submit such facts or information to the Administrator and the Director.

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 other state or federal laws 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.H. TRANSFER OF PERMIT

This Permit may not be transferred to a new owner and operator unless it is modified or revoked and reissued pursuant to WAC 173-303-830(2) and 40 CFR §§ 270.40(b) or 270.41(b) (2).

I.I. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE ADMINISTRATOR AND THE DIRECTOR

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

Chief, Waste Management Branch
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, HW-102

9 3 1 2 9 3 6 0 6 5 8

Seattle, Washington 98101
Telephone: (206) 553-2782

Supervisor, Nuclear and Mixed Waste Management Program
Washington Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600
(206) 438-7021

These phone numbers and addresses may change.

I.J. SIGNATORY REQUIREMENTS

All reports or other information submitted to the Administrator or Director shall be signed and certified in accordance with WAC 173-303-810(12) and 40 CFR §270.11.

I.K. DOCUMENTS TO BE MAINTAINED AT THE ACTIVITY SITE

The Permittee shall maintain at the RD&D Activity site, until closure is completed and certified by an independent registered professional engineer, the following documents and amendments, revisions, and modifications to these documents:

- I.K.1 The Permit and all Attachments
- I.K.2. The ~~Part B~~^{RD&D} Permit Application.
- I.K.3. The RD&D Activity operating record.

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PART II - GENERAL OPERATING CONDITIONS

II.A. DESIGN AND OPERATION OF RD&D ACTIVITY

- II.A.1. The Permittees shall maintain and operate the RD&D Activity to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
- II.A.2. The Permittees shall construct all the RD&D Activity units in accordance with Attachment 4 of this permit and as otherwise required by this permit, except for minor changes deemed necessary by the Permittees to facilitate proper construction and operation of the RD&D units. Minor changes necessary to accommodate proper construction and operation and the substitution of the use of equivalent or superior materials or equipment must be noted on the as-built figures and/or drawings and the rationale for those deviations must be provided in narrative form. After completion of construction of the RD&D Activity units, the Permittees shall submit final as-built figures and/or drawings and the narrative report to the Director and the Administrator as part of the construction certification document specified in permit condition I.E.8.

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II.B. AUTHORIZATION.

The Permittees are not authorized and therefore shall not use dangerous waste generated off the facility site for the conducting the RD&D Activity.

II.C. DEMONSTRATION PLAN

II.C.1. The Permittees shall follow the procedures as specified in the attached Demonstration Plan, Attachment 2 of this Permit, and the Quality Assurance Plan, Attachment 11 of this Permit, and Waste Analysis Plan, Attachment 3 of this Permit in conducting the RD&D Activity.

II.C.2. The Permittees shall submit to the Administrator and the Director specific details of each test to be performed under this Permit at least 30 calendar days prior to the commencement of the test. The specific details will include the information specified under Subsection 2.1.1 in Attachment 2 of the Permit and under Subsection 1.3.1 in Attachment 11 of the Permit.

II.C.3. The Permittees shall submit quarterly progress reports to the Administrator and the Director. These reports shall include the information specified in Subsection 2.1.2 of Attachment 2 of this Permit and the following. The first quarterly progress report shall be submitted 30 calendar days prior to the commencement of the first test performed under the RD&D Activity:

II.C.3.a. Lists of tests underway or performed during the quarter covered by the progress report;

II.C.3.b. Lists of tests projected to be performed during the next quarter and projected date for submittal of specific details for these tests as specified in permit condition II.C.2.; and,

II.C.3.c Test reports completed during quarter covered by the progress report.

II.C.4 The Permittees shall submit a report to the Director and the Administrator upon completion of the tests, but not later than 90 calendar days following the term of this Permit. This report will summarize the test results and discuss the feasibility or infeasibility of the experimental activities based on the operating conditions specified in this Permit.

II.D. GENERAL WASTE ANALYSIS

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- II.D.1. The Permittees shall follow the procedures described in the Waste Analysis Plan, Attachment 3 of this Permit and the Quality Assurance Plan, Attachment 11 of this Permit except that the following changes to Attachment 3 of this Permit are hereby made:
- II.D.1.a. Section 3.4.2, Page 3-9, first paragraph, at end of first sentence add the following: "and total organics".
- II.D.1.b. Table 3-3, Page T3-3, add under "subheading" parameter "total organics, correspondingly under subheading "limit" add "10% by weight, correspondingly under subheading "Derivation of limit" add "NA", and correspondingly under subheading "Analytical method" add "SW-846-9060".
- II.D.2. The Permittees shall submit to the Administrator and the Director the "Stream Specific Report for 242-A Evaporator" at least 30 calendar days prior to commencement of the Dangerous Waste Research, Development and Demonstration Treatment Activity authorized by this Permit.
- II.E. SECURITY**
- The Permittees shall comply with the security procedures as contained in Attachment 5 of this Permit.
- II.F. GENERAL INSPECTION REQUIREMENTS**
- II.F.1 The Permittees shall follow the procedures of the approved Inspection Plan included as Attachment 6 of this permit.
- II.F.2. The Permittees shall remedy any deterioration or malfunction discovered by an inspection as required by 40 CFR §264.15(c) and WAC 173-303-320(3). Inspection reports shall be recorded and maintained as required by 40 CFR §264.15(d) and WAC 173-303-320(2).
- II.F.3. The Permittees may make only the following changes to the Inspection Plan without first obtaining a permit modification:
- II.F.3.a. The Permittees may add inspection parameters to an existing inspection form, table, or figure in cases where such additional parameters will result in a more comprehensive or detailed Inspection Plan.
- II.F.3.b. The Permittees may create additional inspection forms, tables, or figures to address inspection parameters for equivalent or superior replacement equipment which must be routinely inspected.
- II.G. TRAINING PLAN**

The Permittees shall ensure that all personnel who handle dangerous waste are trained in dangerous waste management safety and emergency procedures, as applicable to their job description in accordance with the Permittees Training Plan. These personnel shall be trained in accordance with Training Plan included as Attachment 9 of this Permit and documentation of training shall be maintained as specified in Attachment 9 of this Permit.

II.H. PREPAREDNESS AND PREVENTION

II.H.1. The Permittees shall follow the procedures in Controls to Prevent Hazards included as Attachment 7 of this permit, except the following changes to Attachment 7 are hereby made:

II.H.1.a. Appendix 5B, page APP 5B-1, first paragraph, add after first sentence the following: "The written procedures for equipment maintenance and instrument calibration, whether based on manufacturer's instruction or Hanford Facility procedures will maintained at the Waste Water Pilot Plant."

II.H.1.b. Appendix 5B, page APP 5B-1, fourth paragraph, add the following to the end of the first sentence: "which shall be adhered to at a minimum".

II.H.1.c. Appendix 5B, Table 5B-1, page APP T5B-1.3, under subheading "Equipment Number" add "VOC Analyzer- 1706 KE Building", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the primary charcoal unit exceeds 10 part per million" and correspondingly under subheading "Maintenance requirement" add "visual inspection with calibration and functional test".

II.H.1.d. Appendix 5B, Table 5B-1, page APP T5B-1.3, under subheading "Equipment Number" add "pH analyzer for LERF and 1706-KE", correspondingly under subheading "Type" add "Safety", correspondingly under subheading "Function" add "activates alarm and process shut down", and correspondingly under subheading "Maintenance requirements" add "Visual inspection with functional test every 3 months".

II.H.1.e. Appendix 5B, Table 5B-1, page APP T5B-1.2, under "Equipment number" "UV-TK-1,2" add "UV-TI-1,2".

II.H.1.f. Appendix 5B, Table 5B-1, page APP T5B-1.2, under "Equipment number" "LF-ps" revise as follows: "LF-ps-1, LF-ps-2, LF-ps-3, LF-ps-6, and LF-ps-7".

← NO SUCH TRAINING

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- II.H.1.g. Appendix 5B, Table 5B-2, page APP T5B-2.3, under subheading "Equipment Number" add "VOC Analyzer - 1706 KE Building", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the primary charcoal unit exceeds 75 part per million" and correspondingly under subheading "Calibration requirement" add "Functional test and calibration every week during operation of the RD&D Activity".
- II.H.1.h. Appendix 5B, Table 5B-2, page APP T5B-2.3, under subheading "Equipment Number" add "pH analyzer for LERF and 1706-KE", correspondingly under subheading "Type" add "Safety", correspondingly under subheading "Function" add "activates alarm and process shut down", and correspondingly under subheading "Calibration requirement" add "Functional test and calibration every week".
- II.H.1.i. Appendix 5B, Table 5B-2, page APP T5B-2.1, under "Equipment number" "UV-TK-1,2" add "UV-TI-1,2".
- II.H.1.j. Appendix 5B, Table 5B-2, page APP T5B-2.1, under "Equipment number" "LF-ps" revise as follows: "LF-ps-1, LF-ps-2, LF-ps-3, LF-ps-6, and LF-ps-7".
- II.H.1.k. Appendix 5B, Table 5B-3, page APP T5B-3.1, under "Equipment number" "UV-TK-1,2" add "UV-TI-1,2".
- II.H.1.l. Appendix 5B, Table 5B-3, page APP T5B-3.1, under "Equipment number" "LF-ps" revise as follows: "LF-ps-1, LF-ps-2, LF-ps-3, LF-ps-6, and LF-ps-7".
- II.H.1.m. Appendix 5B, Table 5B-3, page APP T5B-3.2, under subheading "Equipment Number" add "pH analyzer for LERF and 1706-KE, correspondingly under subheading "Unit operation" add "ph adjustment" and correspondingly under "Item description" add "pH controller for addition of sulfuric acid".
- II.H.1.n Appendix 5B, Table 5B-1, page APP T5B-1.3, under subheading "Equipment Number" add "Carbon Unit- Liquid Effluent Retention Facility", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the primary charcoal unit exceeds 10 part per million" and correspondingly under subheading "Maintenance requirement" add "visual inspection with calibration and functional test".

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II.H.1.o Appendix 5B, Table 5B-2, page APP T5B-2.3, under subheading "Equipment Number" add "Carbon Unit- Liquid Effluent Retention Facility", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the primary charcoal unit exceeds 75 part per million" and correspondingly under subheading "Calibration requirement" add "Functional test and calibration prior to loading or unloading of any loads at the LERF facility".

II.H.2. Prior to operation of the RD&D Activity the Permittees shall submit to the Administrator and the Director revisions to Attachment 7, Appendix 5B, Table 5B-2 of this Permit, and Attachment 4 of this Permit, and Permit condition V.D., as applicable, incorporating compliance with one of the following. These revisions to Attachment 7, Appendix 5B, Table 5B-2 and Attachment 4 of this Permit, and Permit condition V.D. shall not require a Permit modification:

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II.H.2.a. For equipment numbers UV-ps, UV-pi, UV-TK-1,1, RO-pi-1-12, specify calibration at a frequency based on either the manufacturer's instructions or at six month intervals which ever results in a greater frequency. Include description of calibration procedures. *GOOD*

 II.H.2.b. For equipment numbers UV-ps, UV-pi, UV-TK-1,1, RO-pi-1-12 add redundant equipment and tolerance range for considering the redundant equipment as serving as an adequate check on equipment numbers UV-ps, UV-pi, UV-TK-1,1, RO-pi-1-12 readings accuracy. Revise Figures and Tables in Attachment 4 to reflect this redundant equipment.

II.H.2.c. For equipment numbers UV-ps, UV-pi, UV-TK-1,1, RO-pi-1-12 specify will be replaced every six months with Vendor calibrated equipment. *←*

II.H.3. The Permittees shall ensure all water related safety equipment such as eyewash units and emergency showers shall remain operational at all times, including during subfreezing temperatures.

II.I. CONTINGENCY PLAN

II.I.1. The Permittees shall follow the procedures outlined in the Contingency Plan included as Attachment 8 of this Permit.

II.I.2. The Permittees shall submit to the Administrator and the Director the names, addresses, and phone numbers of the

Building Emergency Director and alternates for the 1706-KE Building and 200 Area Tank Farms Building prior to commencing the RD&D Activity.

II.J. RECORDKEEPING AND REPORTING

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit the Permittees shall comply with all applicable notifications, certifications and recordkeeping requirements described in 40 CFR §§264.73 and WAC 173-303-380.

II.K. CLOSURE

II.K.1. The Permittees shall meet the general performance standard as specified in 40 CFR §264.111 and WAC 173-303-610(2) during closure of the RD&D Activity. Compliance with 40 CFR §264.111 and WAC 173-303-610(2) shall require closure of the RD&D Activity in accordance the Closure Plan, included as Attachment 10 of this Permit and condition II.K. of this Permit.

II.K.2. Minor deviations from the permitted closure procedures necessary to accommodate proper closure must be described in a narrative form with the closure certification statements. The Permittees shall describe the rationale for implementing minor changes as part of the narrative report. Within forty-five (45) calendar days after completion of closure of the RD&D Activity the Permittees shall submit the certification statements and narrative report to the Administrator and Director.

II.K.3. The Permittees shall amend the Closure Plan, Attachment 10 of this Permit, in accordance with 40 CFR §264.112(b) and WAC 173-303-610(3) and -830(3) and (4) whenever necessary.

II.K.4. The Permittees shall notify the Administrator and the Director by certified mail at least forty-five (45) days prior to the date the Permittees expects to begin closure of the RD&D Activity.

II.K.5. The Permittees shall close the RD&D Activity within the time limits specified in the Closure Plan, Attachment 10 of this permit.

II.K.6. The Permittees shall decontaminate and/or dispose of all equipment used in the RD&D Activity as specified in the Closure Plan, Attachment 10 of this permit.

II.K.7. The Permittees shall certify that the RD&D activity has been closed in accordance with the specifications in the

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Closure Plan, Attachment 10 of this permit, as required by 40 CFR § 264.115 and WAC 173-303-610(6).

II.L. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittees shall not manage ignitable, reactive, or incompatible wastes at the RD&D Activity.

II.M. EQUIVALENT MATERIALS/INFORMATION

If certain equipment, materials, procedures, and administrative information (such as names, phone, numbers, addressed) are specified in this Permit, the Permittees are allowed to use an equivalent or superior. Use of such equivalent or superior items shall not be considered a modification of the permit, but the Permittees must place in the operating record (prior to institution of the revision), the revision, accompanied by a narrative explanation, and the date the revision became effective. The Agency and Department may judge the soundness of the revision during inspections of the facility and take appropriate action. The format of tables or forms, are not subject to the requirements of this permit, and may be revised at the Permittees' discretion.

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PART III- CONDITIONS FOR CONTAINER STORAGE

III.A. UNIT IDENTIFICATION

The Permittees may store dangerous waste in containers in the units identified on Figures F4-1, F4-18, F4-19, F4-20 through F4-24, of Attachment 4 of this Permit and listed below subject to the terms of this Permit:

AND F4 25
Two Tank Trailer Containers to be located at either the 1706-KE Building as depicted on Figures ~~F4-1~~, F4-23, and ~~2~~ F4-24, of Attachment 4 of this Permit, or the Liquid Effluent Retention Facility as depicted on Figures F4-20 through F4-22, of Attachment 4 of this Permit.

III.B. WASTE IDENTIFICATION

The Permittees may store the following dangerous wastes in the two Tank Trailer Containers identified in permit condition III.A subject to the terms of this Permit and as specified below:

III.B.1. Waste Description State/EPA Hazardous Waste No.

242-A Evaporator Process Condensate *F001, F002*
F003, F005, WT02

242-A Evaporator Process Condensate *F001, F002*
spiked with the constituents in listed on Table 3-2 of Attachment 3 of this Permit. F003, F005, WT02

III.B.2. Maximum constituent concentration levels in the wastes specified in permit condition III.B.1. shall be limited to the concentration levels specified on Table 3-4 of Attachment 3 of the Permit.

III.B.3. Maximum percent of total organics in waste limited to less than 10% by weight.

III.C. CONTAINER MANAGEMENT

III.C.1. The maximum amount of container storage and/or treatment shall be 10,000 gallons in tanker trailer containers, with each Tanker Trailer Container having a maximum capacity of

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5,000 gallons as specified in Section 4.3.3.1, Attachment 4 of this Permit.

- III.C.2. The Permittees shall store containerized waste in the manner designated in Subsection 4.3, Figures 4-1, 4-2, F4-15 - F4-24 Appendix 4D of Attachment 4 of this Permit, except as otherwise specified in this permit, and in accordance with permit condition II.A.1.
- III.C.3. If the Tank Trailer Container holding dangerous waste is not in "good condition" (e.g. severe rusting, apparent structural defects) or if it begins to leak, the Permittees shall transfer the dangerous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit.
- III.C.4. The Permittees shall ensure that the Tank Trailer Containers as described in Section 4.3.3.1, Attachment 4 of this permit are certified as specified in Attachment 4, Appendix 4D of this permit and that a copy of the certification is submitted to the Director and the Administrator prior to operation of the RD&D Activity.
- III.C.5. The Permittees shall ensure that the Tank Trailer 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.C.6. The Permittees shall not place incompatible wastes, or incompatible wastes and materials, in the Tank Trailer Containers, and shall not place dangerous waste in an unwashed Tank Trailer Container that previously held an incompatible waste or material.
- III.C.7. Incompatible wastes shall not be placed or stored within the same secondary containment area.
- III.C.8. The Permittees shall ensure that all dedicated and nondedicated equipment used for transfer of dangerous wastes to or from the Tank Trailer Containers (pumps, hoses, piping, valves, etc.) is compatible with the wastes, and is decontaminated before it is used for the transfer of incompatible wastes.
- III.C.9. The Permittees shall manage containers as specified in 40 CFR §264.173 and WAC 173-303-630(5) and Attachment 4 of this permit.
- III.C.10. The Permittees shall not place ignitable or reactive wastes in the Tank Trailer Containers.

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III.D. CONTAINMENT

- III.D.1. The Permittees shall construct and maintain the containment system as described in Sections 4.3.3.2.3, 4.3.3.3.3., and 4.3.3.4, Figure 4-21, 4-22, 4-23, 4-24, 4-25 and Appendix 4E of Attachment 4 of this permit. } *OK*
- III.D.2. The Permittees shall expose coupons of synthetic berm liner material to the same weather, stress and waste contact conditions as the synthetic berm liner material is exposed to provide a representative sample of the berm material deterioration. The Permittees shall perform coupon testing when a spill has occurred or at least annually using the following specified test methods on the coupon of the synthetic berm liner material to determine the following properties:

<u>Property</u>	<u>Test Method</u>
Weight	ASTM-D-751
Puncture	FTMS-101B
Tear	ASTM-D-751
Tensile	ASTM-D-751
Shear	MIL-T-52983F
<u>Seam Property</u>	
Peel	ASTM-D-413
Shear	MIL-T-52983F

- III.D.3 The Permittees shall collect a sample of the coupon of the synthetic berm liner as specified in permit condition III.D.2. within twenty-four (24) hours of detection of a spill.
- III.D.4. Based on the coupon testing required under permit condition III.D.2. the Permittees shall submit the following to the Director and the Administrator within sixty calendar days of collecting the coupon sample for testing;
- III.D.4.a. Record of the testing activities including the information specified in permit condition I.F.3.
- III.D.4.b. Determination, including supporting calculations and narrative evaluation, of whether the physical properties of the synthetic material are still adequate to withstand the stresses it is exposed to based on the supporting calculations in Appendix F of the permit application.

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III.D.5. If the tank trailer containers are determined to no longer be adequate based on testing results and evaluation under permit condition III.D.4., the Permittees shall immediately cease operation of the affected container storage unit until the following requirements are met:

III.D.5.a. Replace the synthetic berm liner with the same materials and using the same procedures as specified for the synthetic berm liner's original placement in Attachment 4 of this permit.

III.D.5.b. Submit documentation of the replacement of the synthetic berm and recommence operation of the affected container storage units as specified in permit conditions I.E.8., II.A.1, II.A.2. for construction of new units.

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PART IV- CONDITIONS FOR STORAGE IN TANKS

IV.A. UNIT IDENTIFICATION

The Permittees may store dangerous wastes in the units identified on Figures 4-1 and 4-2 of Attachment 4 of this Permit and listed below subject to the terms of this Permit:

Two Double Shell Tanks to be located outside the 1706-KE Building as depicted on Figures 4-1 and 4-2 of Attachment 4 of this Permit. References to above identified Double Shell Tanks shall also include any associated piping, appurtenances, and the secondary containment provisions for these units.

IV.B. WASTE IDENTIFICATION

The Permittees may store the following dangerous wastes in the two Double Shell Tanks identified in permit condition IV.A. subject to the terms of this Permit and as specified below:

IV.B.1. Waste Description

State/EPA Waste No.

242-A Evaporator
Process Condensate

Pass 1 F002
F003, F005, WT02

242-A Evaporator
Process Condensate
spiked with the
constituents listed
on Table 3-2 of Attachment
3 of this Permit

F001 F002
F003, F005, WT02

IV.B.2. Maximum constituent concentration levels in the wastes specified in permit condition IV.B.1. shall be limited to the concentration levels specified on Table 3-4 of Attachment 3 of this Permit. These concentration levels shall be determined as specified in Attachment 3 of this Permit.

IV.B.3. Maximum percent of organics in waste limited to less than 10% by weight. The percent of organics in waste shall be determined as specified in Attachment 3 of this Permit.

IV.C. DESIGN AND CONSTRUCTION

IV.C.1. The Permittees shall design, construct and maintain the Double Shell Tanks in accordance with Attachment 4 and in

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accordance with permit conditions II.A.1, II.A.2. and IV.C.

IV.C.2. The Permittees shall meet the following requirements prior to installation of the Double Shell Tanks:

IV.C.2.a. The Permittees shall submit to the Director and the Administrator a written assessment reviewed and certified by an independent, qualified registered professional engineer, in accordance with Section 270.11(d) and WAC 173-303-810 attesting that the two Double Shell Tanks have sufficient structural integrity and are acceptable for the storing of the dangerous wastes specified in permit condition IV.B. At a minimum, this written assessment shall include the information required in Section 264.192(a) and WAC 172-303-640(3)(a).

IV.C.2.b. The Permittees shall receive written approval from the Director and the Administrator of the acceptability of the two Double Shell Tanks.

IV.C.3. The Permittees shall review, pursuant to Section 264.192(b) and WAC 173-303-640(2)(c), the structural integrity of the two Double Shell Tanks every five (5) years starting from the date the two Double Shell Tanks are installed. The initial structural integrity review shall also include testing for tightness pursuant to Section 264.192(d) and WAC 173-303-640(2)(e). Results of the integrity assessments shall be included in the Operating Record accessible at the facility. If either of the two Double Shell Tanks are found to be leaking or unfit for service, it must be immediately removed from service and the Permittees shall comply with Section 264.196 and WAC 173-303-640(7). The Permittees may not return the tank to service until he/she has obtained the required certification.

IV.C.4. The tank integrity assessments performed every five (5) years must be done by an independent, registered, professional engineer. The initial assessment may be performed by an independent, qualified registered professional engineer, or by an independent qualified installation inspector not affiliated with the tank vendor, certified by an independent, qualified registered professional engineer.

IV.C.5. A visual inspection of the tanks' interior 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 every three years starting from the date the two Double Shell Tanks are installed. Results of the

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visual inspection shall be included in the RD&D Activity Operating Record accessible at the facility.

IV.D. TANK MANAGEMENT

IV.D.1. The maximum amount of tank storage shall be 6,000 gallons in the Double Shell Tanks, with each Double Shell Tank having a maximum capacity of 3,000 gallons as specified in Subsection 4.1.2 of Attachment 4 of this Permit.

IV.D.2. The Permittees shall store dangerous wastes in the Double Shell Tanks in the manner designated in Subsections 4.1.2, Figures 4-1 and 4-2, and Table 4-4 of Attachment 4 of this Permit, except as otherwise specified in this Permit, in accordance with permit condition II.A.1, and except that the following changes to Attachment 4 are hereby made:

IV.D.2.a. Table 4-4, page T4-4.6, add the following additional critical parameters:

IV.D.2.a.i.

Add under subheading "Equipment location" add "1706-KE Interim Storage Tanks (IST) 1,-2", correspondingly under subheading "Control Parameter" add "liquid level", correspondingly under subheading "Hazard" add "waste water overflow resulting in environmental contamination", correspondingly under subheading "Control method(s)" add "liquid level control", correspondingly under subheading "Control device" add "liquid level control loop consisting of conductivity type limit switches IST 1-1s and IST 2-1s and feed float control valves IST 1-cv and IST 2-cv", correspondingly under subheading "Control setpoint" add "liquid level corresponding to 90% of tank volume", correspondingly under subheading "Alarm setpoint and response" add "liquid level correspondingly to 90% of tank volume activates high level visual alarm IST 1-lah and IST 2-lah, audible alarm KG-aa, and shuts down feed pumps P-3,4,5,7, and 8", correspondingly under subheadings "Instrument Range" and "Expected Range" add "NA", and correspondingly under subheading "Accuracy" add "+.1 inch".

IV.D.2.a.ii.

Add under subheading "Equipment location" add "1706-KE Interim Storage Tanks (IST) 1,-2", correspondingly under subheading "Control Parameter" add "leakage of wastewater", correspondingly under subheading "Hazard" add "environmental contamination", correspondingly under subheading "Control method(s)" add "double containment with daily inspection", correspondingly under subheading "Control device" add "double shell with access port", correspondingly under subheading "Control setpoint" add

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"no visible liquid between shells", correspondingly under subheading "shut down loading pump; troubleshoot and repair" and correspondingly under subheadings "Instrument Range", "Expected Range", "Accuracy" add "NA".

IV.D.2.b. Figure F-2, add the following information:

IV.D.2.b.i.

Label intermediate storage tanks as "IST-1" and "IST-2".

IV.D.2.b.ii.

Label intermediate storage tanks limit switches as "IST-1-ls" and "IST-2-ls".

IV.D.2.b.iii.

Label intermediate storage tanks control valves as "IST-1-cv" and "IST-2-cv".

IV.D.3. The Permittees shall not place incompatible wastes, or incompatible wastes and materials, in the Double Shell Tanks, and shall not place dangerous waste in an unwashed Double Shell Tank that previously held an incompatible waste or material.

IV.D.4. The Permittees shall not place ignitable or reactive wastes in the Double Shell Tanks.

IV.D.5. The Permittees shall ensure that all dedicated and nondedicated equipment used for transfer of dangerous waste to or from the Double Shell Tanks (pumps, hose, piping, valves, etc.) is compatible with the wastes, and is decontaminated before it is used for the transfer of incompatible wastes.

IV.D.6. Tank entry shall not be done until vapors, if present, are below 10% of the Lower Explosive Limit (LEL).

IV.D.7. The Permittees shall assure that the leak detection systems for the Double Shell Tanks are capable of collecting and detecting any leaked material. Such assurance shall require that the access port for leak detection be capable of detecting liquid which may be present at the lowest point of the interspace between the tank bottoms. The Permittee shall submit with the written assessment required in permit condition IV.C.1., 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 documentation that the access port is located and designed to monitor this point.

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PART V - CONDITIONS FOR TREATMENT UNITS

V.A. UNIT IDENTIFICATION

The Permittees may treat dangerous wastes in the units identified in Subsections 4.1 and 4.2 and on Figures 4-1 through 4-15 of Attachment 4 of this Permit and listed below subject to the terms of this Permit:

V.A.1. The following units located in the 1706-KE Building:

- V.A.1.i. ph Adjustment
- V.A.1.ii. Backwashable Polymeric Filter
- V.A.1.iii. UV/Oxidation
- V.A.1.iv. Reverse Osmosis
- V.A.1.v. Ion Exchange
- V.A.1.vi. Granular Activated Carbon

V.A.2. The following units located at the Liquid Effluent Retention Facility

- V.A.2.i. ph Adjustment
- V.A.2.ii. Centrifugal Ultrafilter
- V.A.2.iii. Tubular Polymeric Ultrafilter
- V.A.2.iv. Polymeric Backwash Filter

References to above identified units shall also include any associated piping, appurtenances, and the secondary containment provisions for these units.

V.B. WASTE IDENTIFICATION

The Permittees may treat the following dangerous wastes in the units identified in permit condition V.A. subject to the terms of this Permit and as specified below:

- | | | |
|--------|--|--------------------------------------|
| V.B.1. | Waste Description | State/EPA Waste No. |
| | 242-A Evaporator
Process Condensate | <i>F001 F002</i>
F003, F005, WT02 |

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F00: F002 ✓
F003, F005, WT02

242-A Evaporator
Process Condensate
spiked with the
constituents listed
on Table 3-2 of Attachment
3 of this Permit

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- V.B.2. Maximum constituent concentration levels in the wastes specified in permit condition V.B.1. shall be limited to the concentration levels specified on Table 3-4 of Attachment 3 of this Permit. These concentration levels shall be determined as specified in Attachment 3 of this Permit.
- V.B.3. Maximum percent of organics in waste limited to less than 10% by weight. The percent of organics in waste shall be determined as specified in Attachment 3 of this Permit.
- V.C. DESIGN AND CONSTRUCTION
- V.C.1. The Permittees shall design, construct and maintain the units identified in permit condition V.A. in accordance with Attachment 4 of this Permit and in accordance with permit conditions II.A.1, II.A.2. and V.C.
- V.C.2. The Permittees shall meet the following requirements prior to operation of the units identified in permit condition V.A. under this Permit:
- V.C.2.a. The Permittees shall submit to the Director and the Administrator a written assessment reviewed and certified by a qualified registered professional engineer, in accordance with Section 270.11(d) and WAC 173-303-810 attesting whether the control setpoints which activate feed pump shutdown for units identified in permit condition V.A. are set at above or below the level which result in the hazard specified on Table 4-4 of Attachment 4. Based on this assessment the Permittees shall modify any control setpoints that do not activate feed pump shutdown prior to occurrence of the hazard. The Permittees shall submit with the written assessment revisions to Attachment 4 of this Permit and to Permit Conditions V.D. and V.E. to reflect these corrections to the control setpoints. These revisions to Attachment 4 and Permit Conditions V.D. and V.E. of this Permit to reflect these corrections to the control setpoints shall not be considered modifications to this permit and shall be implemented in accordance with permit condition II.M.
- V.C.2.b. The Permittees shall submit Table 4-1 of Attachment 4 of this permit revised to designate the specific secondary

containment details for all the units identified in permit condition V.A. consistent with the criteria specified in Subsection 4.1.2. These revisions to Table 4-1 of Attachment 4 of this permit shall not be considered modifications to this permit and shall be implemented in accordance with permit condition II.M.

V.D. Treatment Unit Management

V.D.1. The Permittee shall be limited to the following treatment capacity:

V.D.1.a.i.

Units located at the 1706-KE Building shall individually be limited to 5 gallons per minute, with the exception that the UV/Oxidation unit is allowed to operate up to 25 gallons per minute in a recycle mode, but is limited to a 5 gallon per minute throughput.

V.D.1.a.ii.

Units located at the 1706-KE Building shall collectively be limited to 5000 gallons per week.

V.D.1.b.i.

Units located at the Liquid Effluent Retention Facility shall individually be limited to 5 gallons per minute, with the exception that the pH adjustment unit is allowed to operate up to 15 gallons per minute.

V.D.1.b.ii.

Units located at the Liquid Effluent Retention Facility shall collectively be limited to 5000 gallons per week.

V.D.2. The Permittees shall operate and monitor the treatment units as specified in Subsection 4.1.3, 4.1.5, 4.2, 4.3.3.2.1, Figures 4-1 through 4-14, 4-20 through 4-24, Appendix C, and Table 4-4 of Attachment 4 of this Permit, under permit condition V., except the following changes are hereby made to Attachment 4 of this Permit:

V.D.2.a. Table 4-4, page T4-4.3, under "UV-vsi uv/ox reactor vessel" for "high temperature" under subheadings "Control method(s)" and "Control Device" add "Temperature indicators UV-TI-1 and UV-TI-2".

V.D.2.b. Table 4-4, page T4-4.3, under "LF filtration module at LERF" under subheadings "Control method(s)" and "Control Device" add "pressure indicators LF-ps-1, LF-ps-2, LF-ps-3, LF-ps-6, and LF-ps-7".

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- V.D.2.c. Table 4-4, page T4-4.4, under "RO reverse osmosis module" first element listed for "high pressure" under subheadings "Control method(s)" and "Control Device" add "pressure indicators RO-pi-1, RO-pi-2, RO-pi-3, RO-pi-4, RO-pi-5, RO-pi-6, RO-pi-7, RO-pi-8, RO-pi-9, RO-pi-10, RO-pi-11, and RO-pi-12".
- V.D.2.d. Table 4-4, page T4-4.6, for "VV 1706-KE vessel vent system" under subheading "Control device" add "vacuum indicator VV-pi" and correspondingly under subheading "Alarm setpoint and response" add "shall initiate shutdown of all treatment unit operations to commence with feedpump P-1".
- V.D.2.e. Table 4-4, page T4-4.6, under subheading "Equipment location" add "VOC Analyzer- 1706 KE Building", correspondingly under subheading "Control Parameter" add "organic concentration", correspondingly under subheading "Hazard" add "primary charcoal unit breakthrough", correspondingly under subheading "Control method(s)" add "organic concentration detection", correspondingly under subheading "Control device" add "organic vapor analyzer", correspondingly under subheading "Control setpoint" 75 parts per million "Alarm setpoint and response" add "organic level of 10 parts per million activates a visual and audible alarm, and requires shut down of the treatment units and replacement of the charcoal unit if on weekend, shutdown during operating week if carbon not replaced within X hours of triggering the alarm", correspondingly under subheadings "Instrument Range" add "0-100 ppm" and "Expected Range" add "NA", and correspondingly under subheading "Accuracy" add ".1 ppm".
- V.D.2.f Table 4-4, page T4-4.6, under subheading "Equipment location" add "Carbon Unit- Liquid Effluent Retention Facility", correspondingly under subheading "Control Parameter" add "organic concentration", correspondingly under subheading "Hazard" add "primary charcoal unit breakthrough", correspondingly under subheading "Control method(s)" add "organic concentration detection", correspondingly under subheading "Control device" add "organic vapor analyzer", correspondingly under subheading "Control setpoint" 75 parts per million "Alarm setpoint and response" add "organic level of 10 parts per million activates a visual and audible alarm, and requires shut down of the Liquid Effluent Retention Facility transfer operation and replacement of the charcoal unit," correspondingly under subheadings "Instrument Range" add "0-100 ppm" and "Expected Range" add "NA", and correspondingly under subheading "Accuracy" add ".1 ppm".

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- V.D.2.g. Figure 4-11, page F4-11, add "pressure switches LF-ps-1, LF-ps-2, LF-ps-3, LF-ps-6, and LF-ps-7".
 - V.D.2.h. Figure 4-6, page F4-6, number pressure indicators "RO-pi-1 through RO-pi-12", starting from left to right across the figure and add pressure switches "RO-rps-1 and RO-rps-2".
 - V.D.3. During start-up and shut-down of the units identified in permit condition V.A. dangerous waste may not be introduced into the units unless the unit operating as specified in permit condition V.E.
 - V.D.4. All control parameters specified in Permit condition V.E. must be continuously monitored and recorded.
 - V.D.5. The system for automatic shutoff of feedpumps as specified in Permit condition V.E. shall be checked weekly to verify operability when the RD&D Activity is in operation. The results of this check shall be included in the RD&D Activity operating record accessible at the facility.
 - V.D.6. The Permittees shall not introduce dangerous waste into or operate the units identified in Permit condition V.A. unless the system for automatic shutoff of feedpumps is operational in accordance with Section 4.1.5, Attachment 1 of this Permit and Permit condition V.E.
 - V.D.7. The Permittees shall maintain a record of each activation of the system for automatic shutoff of feedpumps as specified in Permit condition V.E. This record shall include the following:
 - V.D.7.a. The date, time and cause of the activation;
 - V.D.7.b. The corrective action taken; and
 - V.D.7.c. The duration of the activity causing the activation.

V.E. OPERATING CONDITIONS

The Permittees shall operate the treatment units only under the following conditions and as specified in Section 4.1.5, Attachment 4 and Permit condition V. of this permit.

V.E.1. pH Adjustment.

The pH adjustment unit shall operate within the following conditions and as specified in Attachment 4, Section 4.1.5.1 of this permit:

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V.E.1.(a) The pH analyzer on the second chamber of the pH adjustment vessels shall monitor the outlet pH for the addition of sulfuric acid to the 1706-KE Facility pH adjustment tank PH-tk-1 and the LERF pH adjustment tank and shall alarm when the pH is less than or equal to 4.0 or is greater than or equal to 7.0.

V.E.1.(b) The pH analyzer on the second chamber of the pH adjustment vessels shall monitor the outlet pH for the addition of sulfuric acid to the 1706-KE Facility pH adjustment tank PH-tk-1 and the LERF pH adjustment tank and shall automatically shut down the P-2 metering pump and the feed pump KU-pmp when the pH is less than or equal to 3.0 or greater than or equal to 8.0.

V.E.1.(c) The pH adjustment tank PH-tk-1 liquid level shall be monitored by liquid level control loop including a conductivity limit switch PH-is and feed float control valve PH-cv, and shall activate a high level visible level alarm pH-lah, and audible alarm KG-aa, and shutdown feed pump KU-pmp, when the liquid level exceeds 90% of the tank volume.

V.E.2. Ultraviolet (UV) Oxidation.

The Ultraviolet (UV) Oxidation unit shall operate within the following conditions and as specified in Attachment 4, Section 4.1.5.2, of this permit:

V.E.2.(a) Automatic shutdown of feed-pump P-5 shall be triggered by pressure switch UV-ps when the pressure of the Ultraviolet (UV) Oxidation unit equals or exceeds 15 psig based on pressure indicator UV-pi.

V.E.2.(b) Automatic shutdown of feed pump P-5 and actuation of a visible alarm shall be triggered by temperature switches UV-TK-1 or UV-TK-2 when the temperature of the Ultraviolet (UV) Oxidation Unit equals or exceeds 150°F based on temperature indicators UV-TI-1 or UV-TI-2.

V.E.2.(c) The UV door closure limit switches UV-ls-1 shall deactivate electric power to the lamps if the door closure is open.

V.E.3. Reverse Osmosis.

The reverse osmosis unit shall operate within the following conditions and as specified in Attachment 4, Section 4.1.5.3, of this permit:

V.E.3.(a) Automatic shutdown of feed pumps P-8, P-9 and P-10 and actuation of visible and audible alarms shall be triggered by pressure switches RO-hps-1 or RO-hps-2 when the pressure of the reverse osmosis (RO) module equals or exceeds 400 psig baaed on pressure indicators RO-pi-1, RO-pi-2, RO-pi-3, RO-pi-3, RO-pi-4, RO-pi-5, RO-pi-6, RO-pi-7, RO-pi-8, RO-pi-8, RO-pi-9, RO-pi-10, RO-pi-11 or RO-pi-12.

V.E.3.(b) The operator shall manually shutdown feed pumps P-8, P-9, and P-10 when the pressure of the reverse osmosis (RO) module exceeds 375 psig based on pressure indicators RO-pi-1, RO-pi-2, RO-pi-3, RO-pi-4, RO-pi-5, RO-pi-6, RO-pi-7, RO-pi-8, RO-pi-9, RO-pi-10, RO-pi-11, or RO-pi-12.

V.E.4. Ion Exchange.

The Ion Exchange unit shall be operated as specified in Attachment 4, Section 4.1.5.3.2, of this permit.

V.E.5. Filtration.

The filtration unit shall operate within the following conditions and as specified by Attachment 4, Section 4.1.5.4, of this permit.

V.E.5.(a) Automatic shutdown of feedpumps LF-pump 1,2,3,4,5,6, or 7 or P-3 and actuation of visible alarm shall be triggered by pressure switches LF-ps-1, LF-ps-2, LF-ps-6 or LF-ps-7 when the pressure of the LERF filtration module equals or exceeds 150 psig.

V.E.6. Ventilation System.

The ventilation system shall operate within the following conditions and as specified in Attachment 4, Section 4.1.3, of this permit:

V.E.6.(a) The high differential pressure of the 1706-KE vessel vent HEPA filtration system VV-hepa shall be monitored by a differential pressure gauge VV-dpc and the HEPA filters shall be replaced when the differential pressure exceeds 3.5 inches of water.

V.E.6.(b) The low differential pressure of the 1706-KE vessel vent HEPA filtration system shall be monitored by a differential pressure gauge VV-dpc and the HEPA filters shall be replaced if the differential pressure is less than 0.3 inches of water.

V.E.6.(c) The organic concentration which exceed 10 parts per million shall activate a visual and audible alarm and shall require shut down of the treatment units and

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replacement of the 1706-KE Facility charcoal unit if on weekend, shutdown during operating week if carbon not replaced within X hours of triggering the alarm.

- V.E.6.(d) The organic concentration of 10 parts per million shall activate a visual and audible alarm, and shall require shut down of the Liquid Effluent Retention Facility transfer operation and replacement of the charcoal unit.
- V.E.6.(e) The Permittees shall not exceeds 100% of the rated capacity of the first charcoal filter and shall change-out the first charcoal filter within X hours of detecting breakthrough. The Premittees shall change out the charcoal filter so as not to exceed 100% of the rated capacity of the charcoal filter based upon either of the following methods:
- V.E.6.(e)(i) Complete and maintain a running count of the volatile organic inventory on a per batch basis of spiked and or non-spiked constituents and change-out the charcoal filter so as not to exceed 100% of the capacity of the carbon filter; or
- V.E.6.(e)(ii) Change out the charcoal filter after processing a maximum of seven (7) one-thousand gallon batches (7,000 gallons) of spiked waste water or three-hundred and forty three (343) one-thousand gallon batches (343,000 gallons) of non-spiked waste water. For purpose of this Permit condition in the event of processing both spiked and non-spiked waste water the following shall be used to determine change-out:
- (14lbs/1,000 gallons of spiked waste water)x(# gallons of spike waste water processed) + (.32 lbs/1,000 gallons of non-spiked waste water)x(# gallons of non-spike waste water processed) = 110 lbs.

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