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## Department of Energy

Richland Field Office  
P.O. Box 550  
Richland, Washington 99352

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93-RPS-250

JUN 24 1993

Ms. Dru Butler, Program Manager  
Nuclear and Mixed Waste Program  
State of Washington  
Department of Ecology  
P.O. Box 47600  
Olympia, Washington 98504-7600

Mr. George C. Hofer  
Hanford Project Manager  
U.S. Environmental Protection Agency  
Region 10  
1200 Sixth Avenue, HW-124  
Seattle, Washington 98101

Dear Ms. Butler and Mr. Hofer:

TRANSMITTAL OF THE NOTICE OF DEFICIENCY RESPONSE TABLE FOR THE HANFORD FACILITY DANGEROUS WASTE PERMIT APPLICATION, LIQUID EFFLUENT RETENTION FACILITY, REVISION 0 (TSD: ~~TS-2-8~~)

*mll 7/24/93*

On June 28, 1991, the Hanford Facility Dangerous Waste Permit Application, Liquid Effluent Retention Facility, Revision 0 (LERF Part B), was submitted to the State of Washington Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) in accordance with Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Milestone M-20-47. On February 24, 1993, a Notice of Deficiency (NOD) for the LERF Part B was received by the U.S. Department of Energy, Richland Operations Office (RL). Enclosed is a NOD response table which provides the RL responses to Ecology's comments. The NOD response table has been prepared for submittal to Ecology and the EPA by June 24, 1993, to comply with the 120-day response requirement specified in the Tri-Party Agreement.



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Ms. Butler and Mr. Hofer  
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Should you have any questions, please contact Mr. C. E. Clark, RL, on (509) 376-9333 or Ms. S. M. Price, Westinghouse Hanford Company, on (509) 376-1653.

Sincerely,



EAP:CEC

for James E. Rasmussen, Acting Program Manager  
Office of Environmental Assurance,  
Permits, and Policy  
DOE Richland Operations Office



R. E. Lerch, Deputy Director  
Restoration and Remediation  
Westinghouse Hanford Company

Enclosure:

Hanford Facility Dangerous Waste Permit  
Application, Liquid Effluent Retention  
Facility, Revision 0, Notice of  
Deficiency Response Table

cc: Administrative Records, H6-08  
R. C. Bowman, WHC, w/o encl.  
R. E. Lerch, WHC w/o encl.  
S. M. Price, WHC, w/o encl.  
D. R. Sherwood, EPA, w/encl.

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No.	Comment/Response	Ecology Concurrence
1.	<p><b><u>FORWARD SECTION: Page iii, (lines 27 to 38):</u></b></p> <p><b>Comment:</b> United States Department of Energy, (USDOE), is referred to, in this text as the <u>Owner/Operator</u>. Westinghouse Hanford Company, (WHC), is referred to as the <u>Co-operator</u>.</p> <p><b>Requirement:</b> WHC should be referred to as the Operator of the Hanford Facility.</p> <p><b>DOE-RL/WHC Response:</b> Westinghouse Hanford Company should not be referred to as "operator." In the Washington Dangerous Waste Regulations, "operator" is defined as the person responsible for the <u>overall</u> operation of a facility (WAC 173-303-040). Westinghouse Hanford Company is not responsible for the overall operation of either the Hanford Facility or any individual TSD unit within the Hanford Facility. The DOE-RL, Ecology, and EPA previously have agreed in the Tri-Party Agreement that the DOE-RL owns and operates the Hanford Facility. The contractors have more limited and specific roles under their contracts with the DOE-RL and may not be identified as responsible for all activities, such as corrective action, on the Hanford Facility. Therefore, Westinghouse Hanford Company will be referred to as the "Co-operator" of the Liquid Effluent Retention Facility.</p>	
2.	<p><b><u>FORWARD SECTION: Page iii, (lines 45 and 46):</u></b> <i>"Part B consists of 15 chapters addressing the organization and content of the <u>Part B Checklist</u>, prepared by the Washington State Department of Ecology, (Ecology 1987)".</i></p> <p><b>Requirement:</b> The referenced "Checklist" needs to be more clearly specified.</p> <p><b>DOE-RL/WHC Response:</b> The reference (Ecology 1987) is listed in Chapter 15.0.</p>	
3.	<p><b><u>FORWARD SECTION: Page iv, (lines 8 and 9):</u></b></p> <p><b>Comment:</b> This test limits the sources of waste treated in the Evaporator 242-A Facility to the Double Shell Tanks.</p> <p><b>Requirement:</b> Revise this text to include all sources of waste which are to be treated by 242-A.</p>	03/31/93 (verbal)

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	<p>DOE-RL/WHC Response: The LERF will receive process condensate (PC) from the 242-A Evaporator. This PC will be produced by processing the contents of double-shell tanks. A characterization of PC that is expected from this processing is included in Chapter 3.0. The LERF will receive only PC from the 242-A Evaporator until the 200 Area Effluent Treatment Facility (provided by project C-018H) is operational. Discharge into the LERF from the 242-A Evaporator will be discontinued in accordance with TPA Milestone M-26-03. Present plans do not include other waste sources to be stored at the LERF.</p>	
4.	<p><u>PERMIT APPLICATION (PART A): Page 2 of 7:</u> <i>"The LERF will be a retention basin consisting of <u>four cells</u> (surface impoundments) (S04)."</i></p> <p>Comment: The above statement is not true concerning the actual number of basins constructed.</p> <p>Requirement: Revise both the number of basins and the total capacity that will be made available.</p> <p>DOE-RL/WHC Response: Text will be revised to reflect the number of constructed basins and the total capacity of each basin.</p>	
5.	<p><u>PERMIT APPLICATION (PART A): Page 4 of 7:</u></p> <p>a. See note #4.</p> <p>b. What is the basis for your conversion from gallons to pounds?</p> <p>DOE-RL/WHC Response: (a) Text will be revised to reflect the number of constructed basins. (b) The basis of conversion is the specific weight of water (8.34 pounds per gallon).</p>	
6.	<p><u>CHAPTER 1.0, SECTION 1.1, Page 1-1, Lines 14 &amp; 15, General:</u> <i>"...to any one of <u>four</u> 6.5 million gallon (24.6 million liter) double lined basins."</i></p> <p>Comment: The actual number of basins constructed is three.</p> <p>Requirement: Revise the number of basins constructed and the full capacity available throughout this Permit Application.</p>	

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	<p>DOE-RL/WHC Response: Text will be revised throughout the permit application to reflect the number of basins constructed and the total capacity of each basin.</p>	
7.	<p><u>CHAPTER 1.0, SECTION 1.1, Page 1-1, Lines 24 &amp; 25:</u> "... and <u>is being stored temporarily in the LERF...</u>"</p> <p>Comment: This is not an accurate statement.</p> <p>Requirement: Replace "is being stored" with "will be stored".</p> <p>DOE-RL/WHC Response: Chapter 2.0, Section 2.1, page 2-1, lines 28, 29, and 30 indicate the permit application text is written as if the LERF were already in operation.</p>	
8.	<p><u>CHAPTER 1.0, SECTION 1.1, Page 1-2, Line 5:</u> "<u>The length of service for this surface impoundment is estimated at 3 years to 5 years;...</u>"</p> <p>Comment: This estimate was made at the time this permit application was first submitted.</p> <p>Requirement: Now that the construction of C-018 treatment facility has already started, revise the estimate of the length of service of LERF accordingly.</p> <p>DOE-RL/WHC Response: The text will be revised to indicate that the estimated design life of the LERF is 30 years. However, the service life of the LERF for storage of 242-A Evaporator waste is limited to June 1995 as identified in Tri-Party Agreement Milestone M-26-04.</p>	03/31/93 (verbal)
9.	<p><u>CHAPTER 1.0, SECTION 1.4, Page 1-5, Lines 20 to 27:</u></p> <p>Comment: This section defines the "Hanford Facility"</p> <p>Requirement: Replace this definition of the "Hanford Facility" by the definition in the "Hanford Site Wide Permit" document.</p>	

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	<p>DOE-RL/WHC Response: The Hanford Facility is a single <i>Resource Conservation and Recovery Act of 1976 (RCRA)</i> facility, identified by the U.S. Environmental Protection Agency (EPA)/State Identification Number WA7890008967, that consists of over 60 treatment, storage, and/or disposal (TSD) units included in the <i>Hanford Site Dangerous Waste Part A Permit Application (DOE-RL 1988)</i>. The Hanford Facility consists of the contiguous portion of the Hanford Site that contains these TSD units and, for the purposes of RCRA, is owned and operated by the U.S. Department of Energy (excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to the Washington Public Power Supply System, and lands owned by or leased to the state of Washington).</p>	
10.	<p><u>CHAPTER 2.0, SECTION 2.1, Page 2-1, Lines 28 &amp; 29:</u> <i>"The LERF is anticipated to come on line as early as August 1991,..."</i></p> <p>Comment: This statement is not correct.</p> <p>Requirement: Revise this statement to reflect the more likely date for the start of the LERF operation.</p> <p>DOE-RL/WHC Response: Text will be revised to indicate that the LERF will come on-line when the 242-A Evaporator begins operation sometime in calendar year 1993.</p>	
11.	<p><u>CHAPTER 2.0, SECTION 2.1, Page 2-1, Lines 41 &amp; 42:</u> <i>"Effluent from the 242-A Evaporator previously was disposed of to the soil column without treatment."</i></p> <p>Comment: What was the legal status of such an operation?</p> <p>DOE-RL/WHC Response: This comment is not within the scope of the LERF permit application. Therefore, a response will not be provided.</p>	
12.	<p><u>CHAPTER 2.0, SECTION 2.1.2, Page 2-3, Lines 3 to 10:</u></p> <p>Requirement: See comment #9.</p> <p>DOE-RL/WHC Response: Refer to response to Comment 9.</p>	

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13.	<p><b>CHAPTER 2.0, SECTION 2.1.4.1, Page 2-4, General:</b></p> <p><b>Requirement:</b> Revise all elevations and measurements to match actual construction of the basins.</p> <p><b>DOE-RL/WHC Response:</b> Information shown is typical. Actual construction dimensions will be shown on as-built drawings, which will become part of the permit application after they are finalized.</p>	
14.	<p><b>CHAPTER 2.0, SECTION 2.1.4.3, Page 2-4, General:</b></p> <p><b>Requirement:</b> Revise this section to describe the Leachate Detection and Collection System installed in the basins.</p> <p><b>DOE-RL/WHC Response:</b> The text will be revised to indicate that the pump operates whenever the liquid level in the sump reaches an elevation of 575.58 feet (175.44 meters), and continues to operate until the sump liquid level reaches an elevation of 575.41 feet (175.38 meters). Leachate from the sump is pumped back into the basin.</p>	
15.	<p><b>CHAPTER 2.0, SECTION 2.1.4.3, Page 2-4, Lines 47 to 52:</b> <i>"An increase in the volume over 20 percent of the average <u>daily leachate quantities</u> and/or more frequent operation of the pump could indicate that a leak had developed in the liner. <u>Appropriate steps</u> to further investigate the potential leak would be initiated as warranted".</i></p> <p><b>Requirement:</b> Revise this section to answer the following questions:</p> <ul style="list-style-type: none"> <li>- What is the significance of the 20% datum line for the increase in volume of leachate?</li> <li>- How does this 20% datum volume increase of leachate tie in with regulatory limits?</li> <li>- What are the average daily leachate quantities?</li> <li>- The uncertainty implied by the word "could" in this text is not acceptable. What criteria will be applied to indicate the existence of a leak?</li> <li>- What are the "appropriate steps" set to further investigate the possibility of a leak?</li> </ul>	03/31/93 (verbal)

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DOE-RL/WHC Response: Lines 47 through 52 will be rewritten to reflect planned operation. A leak in the primary liner is detected through monitoring of the leachate flowmeter and the leachate system level. Daily flowmeter and liquid level readings are taken, from which a daily leakage rate is calculated. The daily leakage rate is compared to the established Action Leakage Rate (ALR). A Rapid and Large Leakage Rate (RLL) of 2,100 gallons (19,650 liters) per acre (hectare) per day has been calculated (WHC 1992). The RLL, as defined in this document, satisfies the requirements of the ALR. In the event that the ALR is exceeded, the basin is emptied.

The following reference will be added to Chapter 15.0, Section 15.1:

WHC 1992, *Calculation of the Rapid or Large Leak Rate for LERF Basin in 200 East Area*, WHC-SD-EN-TI-009, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

16. CHAPTER 2.0, SECTION 2.1.4.4, Page 2-5, Lines 42 & 46: "A carbon adsorption breather filter, ..., provides ventilation of the basin and air emission control".

**Requirement:** Revise this section to answer this question :  
How was the capacity of this filter judged to be adequate to efficiently handle the volume of evaporation in the basins?

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DOE-RL/WHC Response: The peak design flow rate of the carbon adsorption breather filter was based on a pressure differential corresponding to the unit area impoundment cover weight. Increases of the free vapor volume under the cover might be caused by air additions, temperature increases, or barometric pressure variations. These volume variations might lift the cover and extend its non-wetted area, but this area extension will not cause the maximum pressure differential on the filter to exceed the pressure of the cover weight. Therefore, the peak flow rate of the filter will remain constant for short-term variations in vapor volume accumulation within the impoundment cover that exceeds filter design flow rates.

The filter flow design will accommodate fully the daily vapor volume change under the cover caused by solar heating increases of temperature and vapor pressure. Volume increases exceeding those anticipated for solar heating also will not affect the filter design flow rate for the reasons stated previously. This consideration gives a substantial margin in the peak filter flow design as far as vapor pressure is concerned. The vapor pressure of water evaporation therefore will not affect the filter design flow rate.

17. CHAPTER 2.0, SECTION 2.1.4.6, Page 2-5, Lines 42 & 46: *"Operations Office" and "Mechanical Room"*

- Requirement: - What is the Operations Office equipped with?  
- What is the function of the Mechanical Room?

DOE-RL/WHC Response: The office is equipped with a desk or table and chairs. Communications will be made via hand-held radio. The Mechanical Room contains electrical switchgear and terminal boxes to support LERF electrical equipment.

18. CHAPTER 2.0, SECTION 2.1.4.9, Page 2-6:

- Requirement: In case of a major power failure, is there a backup electrical supply to run the pumps in case of an emergency?

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	<p>DOE-RL/WHC Response: The LERF does have a backup electrical system provided by the common power backup system of the 200 East Area. The LERF does not have a standby system dedicated solely to itself. A power backup system is not necessary due to the non-critical nature of the LERF [i.e., power loss will not result in loss of life or release into the environment]."</p>	
19.	<p><b><u>CHAPTER 2.0, SECTION 2.3.1, Page 2-7, Lines 33 to 36:</u></b></p> <p>The referenced WAC 173-303-420 is now void. The correct section to be referenced and abided by is the WAC 173-303-282(6)(a)(i).</p> <p>Requirement: Replace the void section of the WAC by the section mentioned above. The requirements of WAC-303-282(6)(a)(i) must be met.</p> <p>DOE-RL/WHC Response: Text will be revised to demonstrate compliance with WAC 173-303-282(6)(a)(i).</p>	03/31/93 (verbal)
20.	<p><b><u>CHAPTER 2.0, SECTION 2.3.2, Page 2-7, Lines 49 to 51:</u></b> <i>"Based on the U.S. Army Corps of Engineers study of the flooding potential of the Columbia River that considered historic data..."</i></p> <p>Requirement: Submit the referenced study to Ecology for review.</p> <p>DOE-RL/WHC Response: The referenced document (COE 1969, <i>Columbia River Basin: Lower Columbia River Standard Project Flood and Maximum Flood</i>, Memorandum Report, U.S. Army Corps of Engineers, North Pacific Division, Portland, Oregon) is a publicly available document.</p>	
21.	<p><b><u>CHAPTER 2.0, SECTION 2.5.2, Page 2-11, Lines 44 &amp; 45:</u></b> <i>"Provision is made for the natural expansion of gases between the liquid and the cover with activated carbon breather vents".</i></p> <p>Requirement: What are the gases expected to form between the liquid and the cover?</p>	

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DOE-RL/WHC Response: Fluctuations in temperature of the water within the basins and the atmospheric air outside the basins could occur due to ambient weather conditions. These varying temperature differences, accompanied by resulting pressure differences, might allow vaporization and condensation of PC constituents, and the water itself, within an area of the water/cover boundary. Constituents that might be expected in the vapor phase can be identified by review of the PC constituents, identified in Chapter 3.0, Table 3-2 of the LERF permit application documentation. Therefore, "expected gases" are a combination of constituents identified in Table 3-2 and water vapor.

22. CHAPTER 2.0, SECTION 2.7.1, Page 2-14, Lines 33 & 34: *"In the case of any release of dangerous waste, the building emergency director immediately notifies Environmental Protection".*

**Comment:** The referenced party to be notified is not known.

**Requirement:** Who is "Environmental Protection". This party needs a clear identified. Also, state this group's responsibilities regarding releases from the LERF basins.

DOE-RL/WHC Response: Text will be revised to indicate that all spills to the environment and/or atmosphere will be reported immediately to the Occurrence Notification Center. The Occurrence Notification Center notifies Ecology of the release of dangerous waste.

23. CHAPTER 2.0, SECTION 2.7.1, Page 2-15, Lines 11 to 17:

**Comment:** The address and telephone number to be used for spill notification reports have been changed to those of the Kennewick Office of the Department of Ecology, Nuclear and Mixed Waste Management Program.

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**Requirement:** Change the notification address and telephone number to those listed below:

The Department of Ecology  
Nuclear and Mixed Waste Management Program  
7601 W. Clearwater Avenue  
Suite #102  
Kennewick, WA 99336

Telephone Number: (509) 736-7581

**DOE-RL/WHC Response:** Text will be revised.

24. CHAPTER 2.0, FIGURE 2-4, Page F2-4:

**Comment:** This figure shows a pipeline connecting the LERF basins to PUREX.

**Requirement:** What is the function of this line? If it has been canceled since the submittal of this application, revise this figure to delete this pipeline.

**DOE-RL/WHC Response:** Figure 2-4 will be revised to remove the pipeline from the PUREX Plant to the LERF.

25. CHAPTER 3.0, SECTION 3.2.4, Page 3-16, Lines 48 to 50: *"The general objective is to ensure the analytical data fall within project required control limits."*

**Requirement:** The referenced control limits must be either included in this text, or referenced in another section, in this Permit Application, where they are listed.

**DOE-RL/WHC Response:** Referenced control limits are provided in Chapter 4.0, Table 4-8. Text will be revised to reference Table 4-8.

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26.	<b><u>CHAPTER 3.0, SECTION 3.2.4.1, Page 3-17, Lines 43 to 48:</u></b>	
	<b>Comment:</b> This section lists the sampling procedures (standard operating procedures) which are developed to collect representative data. There is no mention of the basis used in the developing of these sampling procedures.	
	<b>Requirement:</b> The references used in the developing of the sampling procedures must be included in the text of this section.	
	<b>DOE-RL/WHC Response:</b> Text will be revised to reference the regulatory requirements used in developing the sampling procedures.	
27.	<b><u>CHAPTER 3.0, SECTION 3.2.4.1.2, Page 3-18, General:</u></b>	
	<b>Comment:</b> The text in this section defines the function and goal of the <u>Replicate Sample Collection</u> . The text does not clarify the procedure.	
	<b>Requirement:</b> An outline of the procedure of Replicate Sample Collection and its use to assess the reproductivity of the sampling efforts must be included in this section.	
	<b>DOE-RL/WHC Response:</b> Text will be revised to further describe the replicate sample collection process.	
28.	<b><u>CHAPTER 3.0, SECTION 3.2.4.1.3, Page 3-18, Lines 16 to 18:</u></b>	03/31/93 (verbal)
	<b>Comment:</b> The Chain-of-Custody procedures are mentioned, but not detailed, in this section.	
	<b>Requirement:</b> The <u>chain-of-custody</u> procedures should be detailed in this section.	
	<b>DOE-RL/WHC Response:</b> Text will be revised to provide further detail on the chain-of-custody procedures.	

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29.	<p><b><u>CHAPTER 3.0, SECTION 3.2.4.2, Page 3-18, Lines 33 and 34:</u></b></p> <p><b>Comment:</b> This text refers to section 3.2.5.1 which should contain discussions of Lab. QA/QC control parameters. This section is not included in this Permit Application.</p> <p><b>Requirement:</b> Section 3.2.5.1 must be included in this Permit Application to outline the referenced parameters.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to reference Section 3.2.4.2.</p>	
30.	<p><b><u>CHAPTER 3.0, TABLE 3-3, Page T3-3.2, Lines 44 and 45:</u></b></p> <p><b>Comment:</b> <u>UST (Methods of the United States Testing Company, Inc.)</u> is not an approved testing reference by Ecology. Data listed in this application obtained through UST is not validatable and will be used for informational purposes.</p> <p><b>Requirement:</b> Sampling of 242-A Process Condensate to be stored at LERF should include full characterization which data can be validated.</p> <p><b>DOE-RL/WHC Response:</b> Future waste characterization sampling will use testing methods that can be validated as necessary.</p>	03/31/93 (verbal)
31.	<p><b><u>CHAPTER 3.0, TABLE 3-8, Page T3-8, Line 43:</u></b></p> <p><b>Comment:</b> Method USEPA 8240 will be used "<u>with modification</u>" to analyze for Methyl Isobutyl Ketone, 2-Propanol, and Tetrahydrofuran.</p> <p><b>Requirement:</b> The modifications to USEPA 8240 to run these analyses must be submitted to Ecology for approval.</p> <p><b>DOE-RL/WHC Response:</b> Modification to Method USEPA 8240 only will be required for methyl isobutyl ketone (MIBK). The modification will be restricted to inclusion of this compound in the initial and continued calibration steps per USEPA 8240. No special equipment will be required for the modification.</p>	

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32.	<p><b>CHAPTER 4.0, SECTION 4.2, Page 4-1, Lines 48 to 50:</b> <i>"However, for the purposes of comprehensive coverage of the LERF, this permit application includes a description of the piping, addressing the elements of the <u>checklist</u> keyed to WAC 173-303-640."</i></p> <p><b>Comment:</b> The checklist referenced in the text is not clearly identified.</p> <p><b>Requirement:</b> Identify this checklist clearly and specifically.</p> <p><b>DOE-RL/WHC Response:</b> Checklist reference (Ecology 1987) will be added to the text.</p>	
33.	<p><b>CHAPTER 4.0, SECTION 4.2.2, Page 4-3, Lines 6 and 7:</b> <i>"The concrete pad is sloped so that any leaks or spills from the piping or pipe connections will drain into the basin."</i></p> <p><b>Comment:</b> This is not clear in any of the construction drawings of the concrete pad.</p> <p><b>Requirement:</b> Clarify the route the liquids collecting on the pad would go through to end up in the basins.</p> <p><b>DOE-RL/WHC Response:</b> Text will be modified to indicate that drain piping from the pad into the retention basins is provided. As-built drawings H-2-79613 through H-2-79616 will show the piping arrangement.</p>	
34.	<p><b>CHAPTER 4.0, SECTION 4.2.5.2, Page 4-4, General:</b></p> <p><b>Comment:</b> The pipe certification is not included in the permit application, probably due to the fact that piping was not completed at the time.</p> <p><b>Requirement:</b> Submit the piping certification. Any piping that was completed after the date of this certification need to be separately checked by an independent, qualified, registered professional engineer and certified.</p> <p><b>DOE-RL/WHC Response:</b> The piping certification will be included in an integrity assessment report for 242-A Evaporator/LERF waste transfer piping. The report will be approved by an independent, qualified, registered professional engineer. The report will be added to Appendix 4D.</p>	03/31/93 (verbal)

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35.	<p><b><u>CHAPTER 4.0, SECTION 4.4.3.2, Page 4-6, Lines 23 and 26:</u></b></p> <p><b>Requirement:</b> Revise all LERF elevations to match actual construction data.</p> <p><b>DOE-RL/WHC Response:</b> Information shown is typical. Actual construction dimensions will be shown on as-built drawings, which will become part of the permit after they are finalized.</p>	
36.	<p><b><u>CHAPTER 4.0, SECTION 4.4.3.3.1, Page 4-6, Lines 42 to 45:</u></b></p> <p><b>Comment:</b> The leachate collection system gravel was not installed in place by a "crane and bucket" arrangement.</p> <p><b>Requirement:</b> Revise this section to state the actual method used for the installation of the gravel.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to describe the method by which the gravel was installed.</p>	
37.	<p><b><u>CHAPTER 4.0, SECTION 4.4.3.3.1, Page 4-7, Lines 1 to 9:</u></b></p> <p><b>Comment:</b> The calculations for the risk of damage to the secondary liner by placing the leachate collection gravel were run for the original method of placement.</p> <p><b>Requirement:</b> Replace the calculations in Appendix 4E with those done for the method used on site.</p> <p><b>DOE-RL/WHC Response:</b> Calculations reflecting the method used for gravel installation will be included in Appendix 4E.</p>	
38.	<p><b><u>CHAPTER 4.0, SECTION 4.4.3.3.1, Page 4-7, Lines 22 and 23:</u></b></p> <p><b>Comment:</b> The range of temperature within which the synthetic liners were installed is not accurate in the text.</p> <p><b>Requirement:</b> Replace this range by the revised range allowed during construction.</p>	

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	<p>DOE-RL/WHC Response: Text will be revised to indicate that the minimum ambient air temperature for unfolding or unrolling the HDPE sheets was 14°F (-10°C), and a minimum temperature of 32°F (0°C) was required for seaming the HDPE sheets.</p>	
39.	<p><u>CHAPTER 4.0, SECTION 4.4.3.5, Pages 4-9 &amp; 4-10, lines 1 and 1 to 3:</u></p> <p>Comment: Water is not yet being maintained in the basins.</p> <p>Requirement: Change this to "will be maintained in the basins that have not yet received process condensate."</p> <p>DOE-RL/WHC Response: Chapter 2.0, Section 2.1, Page 2-1, Lines 28, 29 and 30 indicate the permit application text is written as if the LERF were already in operation.</p>	
40.	<p><u>CHAPTER 4.0, SECTION 4.4.4.1, Page 4-12, Lines 13 to 18:</u></p> <p>Comment: This section lists the physical dimensions of the basins.</p> <p>Requirement: Revise this part of the text to list all the "as built" dimensions of the basins, now that the construction is completed.</p> <p>DOE-RL/WHC Response: Information shown is typical. Actual construction dimensions will be shown on as-built drawings, which will become part of the permit application after they are finalized.</p>	
41.	<p><u>CHAPTER 4.0, SECTION 4.4.4.4, Page 4-15, Lines 6 to 9: " Seismic Conditions."</u></p> <p>Requirement: Same requirement noted in # 19.</p> <p>DOE-RL/WHC Response: Text will be revised to demonstrate compliance with WAC-173-303-282(6)(a)(i).</p>	

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42.	<u>CHAPTER 4.0, SECTION 4.4.5.1.1, Page 4-17, Lines 4 to 7:</u>	
	<p><b>Comment:</b> The synthesized process condensate was derived using the <u>average of past compositions</u> of process condensate.</p> <p><b>Requirement:</b> Justify the use of the average values and not the higher limits of concentrations and compositions. Using higher and more adversely effective concentrations and compositions is the more conservative design practice which is required in this type of construction.</p> <p><b>DOE-RL/WHC Response:</b> A comparison of the average and the maximum concentrations of the PC indicates that the values usually are separated by no more than a factor of 2 (maximum = 2 times the average). The units of concentration are in parts per billion. One part per billion multiplied by 2 equals 2 parts per billion (a very small amount). Some incompatibility of constituents to the liner material is observed at concentrations of 1 part constituent to 1 part water (50 percent concentration). The concentration of individual constituents would require concentration of near one billion times their current values to reach 50 percent concentration. The average concentrations of constituents were used because of the rapid mixing and dispersal effect expected in the 6.5-million gallon basins.</p>	
43.	<p><u>CHAPTER 4.0, SECTION 4.4.5.1.2, Page 4-19, Lines 22 and 23:</u> <i>"These 'key constituents' include: acetone, ammonium, methyl ethyl ketone, methyl isobutyl ketone, ..."</i></p> <p><b>Requirement:</b> Explain how, if at all, the change of the source of waste to be treated in the 242-A Evaporator will affect the constituents of the process condensate.</p> <p><b>DOE-RL/WHC Response:</b> Key constituents were based on historical characterization as reported in Table 3-2 of the permit application. The data in Chapter 3.0, Table 3-2 are a statistical representation of past 242-A Evaporator feeds which include: saltwell feed, linked run feed, ammonia scrubber feed, and cladding removal feed. Table 3-2 is representative of the planned Evaporator campaigns which will discharge PC to LERF. The PC contained in LERF will be within the bounds of the upper 90% confidence intervals represented in Table 3-2.</p>	

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44.	<p><u>CHAPTER 4.0, SECTION 4.4.5.1.2, Page 4-20, Lines 4 to 7:</u> " ... <u>the waste acceptance criteria are set at levels that are less than those previously analyzed in Method 9090 tests, where such test data are available.</u>"</p> <p><b>Comment:</b> How much less are the acceptance criteria levels set than the 9090 test levels? The last part of this text, "...where such test data are available.", is not clear.</p> <p><b>Requirements:</b> Specify the reduction factor(s) used to set the acceptance criteria levels from the levels used for the 9090 chemical compatibility tests. Also, clarify the last part of this text: "where such test data are available".</p> <p><b>DOE-RL/WHC Response:</b> The sentence, "For all constituents except acetone, the waste acceptance criteria are set at ..." will be deleted from the text. This wording was the result of a typographical error in editing previous drafts.</p>	
45.	<p><u>CHAPTER 4.0, SECTION 4.4.5.1.2, Page 4-20, Lines 10 to 12:</u></p> <p><b>Comment:</b> The 9090 tests for the piping were run in 50°C temperature, while the expected upper limit of temperature of the process condensate, as mentioned in this section, is 71 °C.</p> <p><b>Requirement:</b> Justify using a less severe temperature for the 9090 tests.</p> <p><b>DOE-RL/WHC Response:</b> The 71°C temperature limit applies to prevention of a temperature stress on catch tank A-350 in the 242-A Evaporator. This limit was established as a safety limit and does not apply to expected PC temperatures, as indicated by the comment. The PC temperatures will average around 28°C with a maximum of 39°C. The test temperature of 50°C is considered very conservative. Plans for operation of the 242-A Evaporator do not include the use of tank A-350. A recommendation to maintain the 71°C safety limit has been issued to maintain normal paraffin hydrocarbons below the flash point. However, this fact should not be confused with piping or equipment stress.</p>	

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46.	<p><b><u>CHAPTER 4.0, SECTION 4.4.5.2, Page 4-20, Lines 49 and 50:</u></b></p> <p><b>Comment:</b> The percentage of Bentonite in the Soil/Bentonite design mix mentioned in this text was specified prior to the completion of the test pads SDRI tests.</p> <p><b>Requirement:</b> Specify the exact range of Soil/Bentonite mix percentages used for the liner.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to indicate that the soil/bentonite layer contains between 11.5 and 14.5 percent bentonite, and has an in-place permeability of no more than <math>10^{-7}</math> centimeters per second.</p>	
47.	<p><b><u>CHAPTER 4.0, SECTION 4.4.5.2.1, Page 4-21, Lines 34 and 35:</u></b> " <i>Detailed discussion of the test procedures and results is provided in Appendix 4F</i>".</p> <p><b>Comment:</b> Appendix 4F includes only the procedure details, not the results of the tests.</p> <p><b>Requirement:</b> Include all the test results referred to in this text in Appendix 4F.</p> <p><b>DOE-RL/WHC Response:</b> The results of tests will be included in the construction quality assurance report, which will be added to Appendix 4G.</p>	
48.	<p><b><u>CHAPTER 4.0, SECTION 4.4.5.2.1, Page 4-23, Lines 13 and 14:</u></b> " <i>Complete results are provided with quality assurance inspection reports in Appendix 4G.</i>"</p> <p><b>Comment:</b> Appendix 4G does not include the results of the QA/QC tests referred to in this section.</p> <p><b>Requirement:</b> The results of all the QA/QC tests must be add to Appendix 4G, now that all construction is completed on the basins.</p> <p><b>DOE-RL/WHC Response:</b> The results of quality assurance and quality control tests will be included in the construction quality assurance report, which will be added to Appendix 4G.</p>	

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49.	<p><b><u>CHAPTER 4.0, SECTION 4.4.5.2.1, Page 4-23, Lines 22 and 23:</u></b></p> <p><b>Comment:</b> Appendix 4F is wrongly reference in this text. The test results mentioned are not in this appendix.</p> <p><b>Requirement:</b> Replace "4F" with "4G" which is the proper appendix to include these test results in.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised.</p>	
50.	<p><b><u>CHAPTER 4.0, SECTION 4.4.5.2, General:</u></b></p> <p><b>Comment:</b> There is no mention in this text of a Soil/Bentonite - Synthetic Liner interface shear test. This test is a common practice in the construction of multi-liner landfills and surface impoundments.</p> <p><b>Requirement:</b> Explain the basis used to analyze the behavior across the line of slippage between the different liners.</p> <p><b>DOE-RL/WHC Response:</b> The shear between the secondary liner and the soil/bentonite layer has been analyzed and is included in Appendix 4E-3. This analysis demonstrates a factor of safety well within acceptable limits.</p>	
51.	<p><b><u>CHAPTER 4.0, SECTION 4.4.7.1, Pages 4-24, 25, and 26, General:</u></b></p> <p><b>Comment:</b> Changes were made to the "materials specifications" throughout the construction activities of the LERF basins.</p> <p><b>Requirement:</b> Revise all the material specifications in this Permit Application to reflect the changes made through all the Engineering Change Notices (ECNs).</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to indicate the specific materials used in constructing the LERF. The soil/bentonite mixture consists of between 11.5 to 14.5 percent bentonite mixed into well-graded silty sand.</p>	

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52.	<p><b><u>CHAPTER 4.0, SECTION 4.4.7.2, Page 4-26, General:</u></b></p> <p><b>Comment:</b> Most items of the construction specifications for the various elements of the LERF project were totally or partially changed. The set of specifications and manufacturers' data in Appendix 4A is not all representative of the final set used for constructing the basins.</p> <p><b>Requirement:</b> Revise the specifications and manufacturers' data in Appendix 4A to reflect the final set of specification actually used on site during construction.</p> <p><b>DOE-RL/WHC Response:</b> Construction specifications will be as-built and will be included in Appendix 4A. Table 4-9 also will be updated.</p>	
53.	<p><b><u>CHAPTER 4.0, SECTION 4.4.7.3, Page 4-27, General:</u></b></p> <p><b>Comment:</b> At the time of submittal of this Permit Application the Construction Quality Assurance Tests had not been conducted.</p> <p><b>Requirement:</b> Appendix 4G should be updated by adding all the QA/QC test results recorded during the construction of the LERF basins.</p> <p><b>DOE-RL/WHC Response:</b> Refer to response to Comment 48.</p>	
54.	<p><b><u>CHAPTER 4.0, SECTION 4.4.7.4, Page 4-27, Lines 37 to 48:</u></b></p> <p><b>Comment:</b> The Leachate collection system and operational parameters have been changed since this submittal.</p> <p><b>Requirement:</b> Revise this section to address the new set up of this system and its operational parameters.</p> <p><b>DOE-RL/WHC Response:</b> Section 4.4.7.4, Lines 38 to 48 will be deleted. The design of the leachate system is addressed in Chapter 2.0, Section 2.1.4.3 and need not be duplicated in this section.</p>	

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55.	<p><u>CHAPTER 4.0, SECTION 4.4.7.4, Page 4-27, Lines 50 and 51:</u> " Detailed procedures are documented in the preventive maintenance procedures manual for the LERF. These procedures are available for inspection by the regulators."</p> <p>Requirement: Submit the referenced maintenance procedures manual to Ecology for review.</p> <p>DOE-RL/WHC Response: Maintenance procedures will be available to Ecology for onsite inspection before the LERF startup.</p>	03/31/93 (verbal)
56.	<p><u>CHAPTER 4.0, SECTION 4.4.7.5, Page 4-28, Lines 4 to 16:</u></p> <p>Comment: The installer of the Liner is not a <u>local contractor</u>. The time required for this installer to respond to a repair call made by the operator of LERF to prevent an excessive leak is not known.</p> <p>Requirement: A time limit should be set for the installer to respond and work on the required repair. Another option can be applied, which is for this installer to train operation/maintenance staff working at Hanford to carry out such repairs.</p> <p>DOE-RL/WHC Response: It is not possible to specify the time for a contractor, local or out-of-town, to respond. This is due to a number of factors. If a leak occurs that exceeds criteria, the contents of the basin will be pumped into the contingency basin. A contractor will be mobilized as quickly as practical to repair the affected basin liner. Factors that make specifying the response time impractical include snow and ice conditions, wind, and ambient temperature.</p>	
57.	<p><u>CHAPTER 4.0, SECTION 4.4.8.3, Page 28, General:</u> " Overtopping Prevention"</p> <p>Comment: A continuous level sensor system is being installed in each of the LERF basins which will monitor the level of effluent at all times and will display this information at the 242-A Evaporator control station.</p> <p>Requirement: This system should be referred to in this section. This section should include the operational details of this system.</p>	

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	<p>DOE-RL/WHC Response: Text will be revised to indicate that overtopping prevention is accomplished through liquid-level instrumentation installed in each basin. The instrumentation includes local liquid-level indication as well as remote indication at the 242-A Evaporator.</p>	
58.	<p><u>CHAPTER 4.0, SECTION 4.4.8.3, Page 4-29, Lines 18 to 20:</u></p> <p>Comment: The calculations required to prove that the cover system will withstand the forces applied by accumulated precipitation of a 100-year 24hr. storm event are not included in this Permit Application.</p> <p>Requirement: Now that the cover system has been contracted for and actually installed, these calculations should be add to this section, or to a separate appendix in this application.</p> <p>DOE-RL/WHC Response: There is no requirement to analyze the cover for this event; however, the structural integrity of the basin dikes has been analyzed and meets the criteria. This information is included in Appendix 4E-10.</p>	
59.	<p><u>CHAPTER 4.0, SECTION 4.4.8.4, Page 4-29, Lines 32 and 33:</u></p> <p>Comment: This section refers to an EPA requirement for the minimum freeboard acceptable without citing the EPA document which makes this requirement.</p> <p>Requirement: The EPA document referenced above should be clearly cited in this section.</p> <p>DOE-RL/WHC Response: Text will be revised to include the specific citation, 40 CFR 265.221(f).</p>	
60.	<p><u>CHAPTER 4.0, SECTION 4.4.9.1, Page 4-30, Lines 5 to 7:</u></p> <p>Comment: The LERF dikes were re-worked after the initial Engineer's Certification was completed and a re-certification of the dikes was generated.</p> <p>Requirement: The Engineer's Re-certification should be included in this Permit Application.</p> <p>DOE-RL/WHC Response: The latest certification will be included in Appendix 4D.</p>	03/31/93 (verbal)

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61.	<p><u>CHAPTER 4.0, SECTION 4.4.9.7, Page 4-33, Line 47</u> <i>"Results of compaction tests are included in Appendix 4G."</i></p> <p><b>Comment:</b> The above referenced data is not included in this Permit Application.</p> <p><b>Requirement:</b> Add this set of data to Appendix 4G.</p> <p><b>DOE-RL/WHC Response:</b> The results of compaction tests will be included in the construction quality assurance report, which will be added to Appendix 4G.</p>	
62.	<p><u>CHAPTER 4.0, SECTION 4.4.12.1, Page 4-35, General:</u></p> <p><b>Comment:</b> The Leachate Detection and Collection System has been re-designed. Elements such as the leachate pump and the protection to the inlet of the leachate riser pipe have been altered from the original design.</p> <p><b>Requirement:</b> Revise this section to reflect all the changes that were made to the original design of this system.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to reflect the design changes to the leachate detection and collection system.</p>	
63.	<p><u>CHAPTER 4.0, SECTION 4.4.12.1, Page 4-35, Lines 45 to 51:</u></p> <p><b>Comment:</b> Specifying the EPA document by its year of publication is not clear enough.</p> <p><b>Requirement:</b> The title of the EPA document referenced in this section should be included in the text.</p> <p><b>DOE-RL/WHC Response:</b> The reference (EPA 1989, p. 122) is listed in Chapter 15.0.</p>	

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64.	<p><b>CHAPTER 4.0, SECTION 4.4.12.1, Page 4-36, Lines 15 to 17:</b> <i>"Calculations provided in Appendix 4E demonstrate that fluid from a <u>standard hole</u> at the furthest end of the basin, under a low head situation, would travel to the sump in less than 24 hours."</i></p> <p><b>Requirement:</b> Define a standard hole.</p> <p><b>DOE-RL/WHC Response:</b> A standard hole should be called a "small hole" (Ref. EPA 625/4-89/022, p. 122) and is a 2-millimeter (0.08-inch) diameter hole. Text will be modified.</p>	
65.	<p><b>CHAPTER 4.0, SECTION 4.4.12.4, Page 4-37, Lines 7 to 11:</b></p> <p><b>Comment:</b> At the time of submittal of this Permit Application the EPA 9090 compatibility test of the Fiberglass Reinforced Resin Piping was not concluded.</p> <p><b>Requirement:</b> Include all the results of the 9090 compatibility tests run on the piping material in this application.</p> <p><b>DOE-RL/WHC Response:</b> Piping material compatibility tests were completed and the piping material successfully met design requirements. Neither the tensile strength nor the elongation to fracture were affected by exposure to synthetic process condensate at either 40°C or 90°C. The results are presented in a report by PNL (PNL-8092). Complete reference information will be included in Chapter 15.0. The testing indicated the need for additional testing to determine the notch sensitivity of the piping material after exposure to the synthetic solutions. Testing results showed that the piping material would perform adequately as designed. The results are presented in a report by PNL (PNL-8275).</p>	
66.	<p><b>CHAPTER 4.0, SECTION 4.4.12.5.1, Page 4-37, Lines 25 and 26:</b></p> <p><b>Comment:</b> This section refers to the wrong method of placement of the gravel leachate collection layer.</p> <p><b>Requirement:</b> Replace this method by the actual method of gravel installation used during the construction of the basins.</p>	

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67.	<p>DOE-RL/WHC Response: Text will be revised to indicate the method used for gravel installation.</p> <p><u>CHAPTER 4.0, SECTION 4.4.12.6, Page 4-38, General:</u></p> <p>Comment: The design of the clogging protection to the Leachate collection pipe (suction end) was changed during the construction of the basins due to changing the perforations on this pipe.</p> <p>Requirement: Add the details of the existing arrangement around the suction pipe to this section.</p> <p>DOE-RL/WHC Response: Text will be revised to describe the existing arrangement around the suction pipe.</p>	
68.	<p><u>CHAPTER 5.0, GENERAL COMMENT:</u></p> <p>Requirement: Additional, up to date diagrams and tables need to be add to the permit application.</p> <p>DOE-RL/WHC Response: Updated diagrams and tables will be added to the permit application to reflect design changes and actual construction.</p>	
69.	<p><u>CHAPTER 5.0, GENERAL COMMENT:</u></p> <p>Comment: The background water quality testing has already begun.</p> <p>Requirement: The water quality data obtained should be included in the permit application.</p> <p>DOE-RL/WHC Response: All sampling data available will be incorporated into the permit application.</p>	
70.	<p><u>CHAPTER 5.0, GENERAL COMMENT:</u></p> <p>Requirement: The MEMO simulation done for the LERF FACILITY should be included in the permit application. The approach and results must be discussed and explained.</p> <p>DOE-RL/WHC Response: The MEMO simulation has been completed and a discussion of the results will be included in the permit application.</p>	

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71.	<p><b><u>CHAPTER 5.0, GENERAL COMMENT:</u></b></p> <p><b>Requirement:</b> All new site interpretations resulting from the data gathered should be added to the permit application.</p> <p><b>DOE-RL/WHC Response:</b> This chapter will be revised to reflect any new information obtained concerning the geology and hydrology of the Hanford Site.</p>	
72.	<p><b><u>CHAPTER 5.0, GENERAL COMMENT:</u></b></p> <p><b>Requirement:</b> A contingency plan needs to be added to the permit application in the event that discharges are discontinued to B-Pond resulting in a reversal of groundwater flow in the immediate area.</p> <p><b>DOE-RL/WHC Response:</b> In the event that discharges are discontinued to B-Pond resulting in a reversal of groundwater flow in the immediate area of the LERF, the groundwater monitoring plan (WHC 1990c) might be revised at the time the gradient is reversed. This plan will not identify additional monitoring wells and locations.</p>	
73.	<p><b><u>CHAPTER 5.0, SECTION 5.2.1, Page 5-2, Lines 28 to 33:</u></b></p> <p><b>Comment:</b> This text indicates that groundwater <u>samples will be taken.</u></p> <p><b>Requirement:</b> If groundwater sampling has already been completed, change this text to reflect this.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to indicate that groundwater sampling has been initiated.</p>	
74.	<p><b><u>CHAPTER 5.0, GENERAL COMMENT:</u></b></p> <p><b>Requirement:</b> The latest geology and hydrology reference of Hanford should be included; specifically "Geology and Hydrology of the Hanford Site: A Standardized Text for use in Westinghouse Hanford Company Documents and Reports", WHC-SD-ER-TI-003.</p> <p><b>DOE-RL/WHC Response:</b> This reference will be cited if appropriate.</p>	

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75.	<p><b><u>CHAPTER 5.0, SECTION 5.2.2.3, Page 5-5, Lines 49 and 50:</u></b></p> <p>Comment: Section 5.5.2.1.4 is referenced in stead of section 5.5.2.1.3.</p> <p>Requirement: Change the text to reference the correct section.</p> <p>DOE-RL/WHC Response: Text will be revised.</p>	
76.	<p><b><u>CHAPTER 5.0, SECTION 5.2.2.4, Page 5-6, Lines 24 to 37:</u></b></p> <p>Comment: The first sentence, lines 24 through 27, indicates that down gradient wells were completed in the entire saturated thickness. Does this mean they were screened over the entire saturated thickness?</p> <p>Comment: The second sentence, lines 27 through 29, states that the up gradient well was completed in broken basalt and screened at approximately the same hydrostratigraphic unit. Does this mean that the up gradient well was screened in the broken basalt? Is this an indication that the aquifer is in both the Hanford formation and the upper basalt?</p> <p>Requirement: Clarify the above queries in the text.</p> <p>DOE-RL/WHC Response: Text will be revised to clarify screen locations.</p>	
77.	<p><b><u>CHAPTER 5.0, SECTION 5.2.2.5, Page 5-7, Lines 26 to 36:</u></b> <i>"Slug tests were performed on each of the wells after completion and development."</i></p> <p>Requirement: If the results from these tests have been finalized, they must be included in the application.</p> <p>DOE-RL/WHC Response: Results from slug testing will be included in the chapter.</p>	
78.	<p><b><u>CHAPTER 5.0, GENERAL:</u></b></p> <p>Requirement: If additional Maps, Diagrams, or tables have been generated or revised, they should be added to the appropriate section of the LERF Part B Permit Application.</p>	

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	DOE-RL/WHC Response: Updated maps, diagrams, and tables will be added where relevant and available.	
79.	<p><u>CHAPTER 5.0, SECTION 5.3.5, Page 5-22, Lines 33 to 35:</u> <i>"A site characterization report for LERF currently is being written to summarize and conform hydrogeologic data specific to the LERF site."</i></p> <p>Comment: Given the time from the submittal date of this permit application, this report is most likely complete now.</p> <p>Requirement: This report must be submitted to Ecology for review and should be included in the Permit Application.</p> <p>DOE-RL/WHC Response: This report is being finalized and will be submitted to Ecology. Report will be referenced in the permit application.</p>	
80.	<p><u>CHAPTER 5.0, SECTION 5.3.5.1, Page 5-22, Lines 37 to 45:</u></p> <p>Comment: These lines indicate data from the installation of LERF monitoring wells and previously existing bore holes was used for stratigraphic correlation at the facility.</p> <p>Requirement: The previously existing bore holes used in the correlation should be listed and cross section of the LERF facility should be included in the permit application.</p> <p>DOE-RL/WHC Response: This information is provided in the groundwater monitoring plan that is referenced (WMC 1990c).</p>	
81.	<p><u>CHAPTER 5.0, SECTION 5.3.5.5, Page 5-25, Lines 19 to 21:</u> <i>"The results of the slug tests will be evaluated and presented in the forthcoming site characterization report."</i></p> <p>Comment: See comment number (73).</p> <p>DOE-RL/WHC Response: Refer to response to Comment 79.</p>	

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82.	<p><b><u>CHAPTER 5.0, SECTION 5.3.6, Page 5-27, Lines 8 to 16:</u></b></p> <p><b>Comment:</b> Figure 5-15 shows a westward flow from the LERF. At some point the flow turns north as stated in section 5.3.3, in the forth sentence.</p> <p><b>Requirement:</b> Revise the text in this section to answer the following two questions:</p> <ul style="list-style-type: none"> <li>* What data is there to support that water passing beneath LERF and/or Liquids migrating from LERF would not come into contact with the area in which the unconfined aquifer and the Elephant Mountain interflow zone are in contact?</li> <li>* How substantial is the data (how many measuring points and for how long) of the slight upward flow from the aquifer to the upper unconfined aquifer?</li> </ul> <p><b>DOE-RL/WHC Response:</b> Text will be revised.</p>	
83.	<p><b><u>CHAPTER 5.0, SECTION 5.3.7.1, Page 5-27, Lines 32 to 41:</u></b></p> <p><b>Comment:</b> The information gained from the soil characteristic curves should be used in determining estimates in travel times in the vadose zone.</p> <p><b>Requirement:</b> If the soil characteristic curves are completed for the samples collected they should be included in the Permit Application.</p> <p><b>DOE-RL/WHC Response:</b> Soil characteristic curves are not required and were not done for the samples collected.</p>	
84.	<p><b><u>CHAPTER 5.0, SECTION 5.3.7.1, Page 5-27, Lines 32 to 41:</u></b></p> <p><b>Comment:</b> If a release was to occur from a LERF basin, it would increase the degree of saturation of the soil column above the water, resulting in a greater downward migration rate.</p> <p><b>Requirement:</b> Has this been taken into account in the computer modeling for the travel time?</p>	

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	<p>DOE-RL/WHC Response: The release would be taken into account if the total infiltration (natural recharge plus release from LERF basin) is within the range of infiltration rates presented in lines 3-15 on p. 5-28. Please note that these estimates are conservative in that it is assumed that no lateral movement of moisture would occur.</p>	
85.	<p><u>CHAPTER 5.0, SECTION 5.3.7.2, Page 5-27, General:</u></p> <p>Requirement: Has the model used to estimate the vadose zone transport been calibrated and verified?</p> <p>DOE-RL/WHC Response: The same unit gradient model also was applied in the liquid effluent study. Comparison of the model results with field observed data (Section 2.13 of WHC 1990) indicates that the model over predicts by a factor of about two, illustrating the conservatism of the model.</p>	
86.	<p><u>CHAPTER 5.0, SECTION 5.5.1, Page 5-32, Lines 1 to 4:</u></p> <p>Comment: The referenced WAC 173-303-645(9)(h)(ii) does not exist.</p> <p>Requirement: Revise this text to reference the correct section of the State Regulations: WAC 173-303-645-(9)(g).</p> <p>DOE-RL/WHC Response: Text will be revised to reference WAC 173-303-645-(9)(g).</p>	
87.	<p><u>CHAPTER 5.0, SECTION 5.5.2.1.1, Page 5-34, Lines 4 to 11:</u></p> <p>Requirement: Revise this text to reflect the fact that the wells have already been installed.</p> <p>DOE-RL/WHC Response: Text will be revised.</p>	
88.	<p><u>CHAPTER 5.0, SECTION 5.5.3.2.1, Page 5-39, Line 3:</u></p> <p>Requirement: F5-2 is the wrong figure to be referenced here. Replace F5-2 with the correct figure F5-1.</p> <p>DOE-RL/WHC Response: Figure reference will be revised.</p>	

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89.	<p><b><u>CHAPTER 5.0, SECTION 5.5.3.2.2, Page 5-39, General:</u></b></p> <p><b>Comment:</b> This section refers to the establishment of background water quality conditions.</p> <p><b>Requirement:</b> The work to date for determining background water quality should be included in the permit application.</p> <p><b>DOE-RL/WHC Response:</b> Background water quality conditions based on the existing data will be added.</p>	
90.	<p><b><u>CHAPTER 5.0, SECTION 5.5.4.5.1, Page 5-43, Lines 10 to 17:</u></b></p> <p><b>Requirement:</b> The following sentence must be added to this text at the end of this paragraph: "Upon reviewing the water-quality data, the department may determine a new sampling frequency."</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to comply with WAC 173-303-645(9).</p>	
91.	<p><b><u>CHAPTER 5.0, SECTION 5.5.4.7, Page 5-44, Lines 20 and 21:</u></b></p> <p><b>Comment:</b> The wrong sections of the WAC 173-303 are referenced here.</p> <p><b>Requirement:</b> Replace WAC 173-303-645(9)(h)(ii) and 173-303-645(9)(h)(iii) with WAC 173-303-645(9)(g)(ii) and 173-303-645(9)(g)(iii).</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to reference WAC 173-303-645(9)(g)(ii) and 173-303-645(9)(h)(iii).</p>	
92.	<p><b><u>CHAPTER 5.0, SECTION 5.5.4.7.2, Page 5-45, Line 33:</u></b></p> <p><b>Comment:</b> See comment number 91.</p> <p><b>DOE-RL/WHC Response:</b> Refer to response to Comment 91.</p>	

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93.	<p><b>CHAPTER 5.0, SECTION 5.6.6, Page 5-46, Lines 26 to 29:</b> <i>"The characterization of groundwater will be completed for each downgradient well along the respective line of compliance and will include (1) concentrations of each constituent listed in 40 CFR 264, Appendix IX, and here proposed to supersede WAC 173-303-9905,"</i></p> <p><b>Requirement:</b> This text needs to be further discussed and clarified.</p> <p><b>DOE-RL/WHC Response:</b> Text will be changed to read: "The characterization of groundwater will include (1) concentrations of each constituent listed in 40 CFR 264, Appendix IX,..."</p>	
94.	<p><b>CHAPTER 5.0, SECTION 5.6.6, Page 5-47, General:</b> <i>"GROUNDWATER MONITORING SYSTEM"</i></p> <p><b>Requirement:</b> This section and corresponding subsections should be updated where appropriate.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to reflect the current data and sampling program.</p>	
95.	<p><b>CHAPTER 5.0, SECTION 5.6.8, Page 5-48, Line 20:</b></p> <p><b>Comment:</b> Reference is made to WAC 173-303-645(10)(i)(ii).</p> <p><b>Requirement:</b> Replace the above with WAC 173-303-645(10)(g)(i) and (ii).</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to reference WAC 173-303-645(10)(g)(i) and (ii).</p>	
96.	<p><b>CHAPTER 6.0, SECTION 6.1.1.2, Page 6-1, Lines 37 and 38:</b></p> <p><b>Comment:</b> Security Procedures at the gate to 200 East Area have been changed. Personnel leaving this Area do not have to stop and display a USDOE security badge.</p> <p><b>Requirement:</b> Revise text to reflect this change.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to reflect the existing security posture.</p>	

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97.	<u>CHAPTER 6.0, SECTION 6.2.1, Page 6-3, Lines 13 and 14:</u>  <p><b>Comment:</b> This text indicates that inspection records are retained for a minimum of 3 years. The WAC <u>173-303-320(2)(d)</u> requires the inspection logs to be kept at the facility for at least 5 years, from the date of inspection.</p> <p><b>Requirement:</b> Revise the text to comply with the State regulations.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to comply with WAC 173-303-320(2)(d).</p>	
98.	<u>CHAPTER 6.0, SECTION 6.2.1, Page 6-3, Lines 14 to 17:</u>  <p><b>Comment:</b> This text indicates that inspection procedure and frequency are detailed in the <u>LERF operating procedures manual</u>.</p> <p><b>Requirement:</b> The referenced manual must be submitted to Ecology for review.</p> <p><b>DOE-RL/WHC Response:</b> The LERF visual inspection plan has not been issued. Text will be revised to include descriptions of the inspection plans and schedules. Tables will be provided that will detail the visual inspection plan for the LERF. References to a manual will be deleted from the text.</p>	
99.	<u>CHAPTER 6.0, SECTION 6.2.1.1, Page 6-3, Lines 22 to 24:</u>  <p><b>Comment:</b> This text does not specifically list all the required items/information in an inspection log as specified in <u>WAC 173-303-320(2)(d)</u>.</p> <p><b>Requirement:</b> Revise this text to comply with the State Regulations.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to indicate that each inspection datasheet includes the date and time of the inspection, the printed name and handwritten signature of the inspector, any observations made, and the date and nature of any repairs or remedial actions taken.</p>	

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100.	<p><b><u>CHAPTER 6.0, SECTION 6.2.2.4.1.1, Page 6-5, Lines 26 to 35: " Over topping Control System "</u></b></p> <p><b>Comment:</b> This text describes the "visual" level monitoring/indication system. Since the submittal of this permit application an electronic "Continuous Level Monitor/Sensor" has been installed in each basin, giving an automatic reading of the waste level in each basin.</p> <p><b>Requirement:</b> Include in this section a description of the Continuous Level Monitoring system, and how this system is interlocked with the filling mechanism to prevent over filling.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to provide a description of the electronic continuous level monitoring system and how the system prevents overflowing.</p>	
101.	<p><b><u>CHAPTER 6.0, SECTION 6.2.2.4.1.1, Page 6-5, Lines 50 and 51:</u></b></p> <p><b>Comment:</b> Changes have been made to the cover design as it is shown in drawing H-2-79591 in Appendix 4B.</p> <p><b>Requirement:</b> The referenced drawing should be updated to include all the changes implemented during construction.</p> <p><b>DOE-RL/WHC Response:</b> Text and drawing will be revised.</p>	
102.	<p><b><u>CHAPTER 6.0, SECTION 6.2.2.4.1.2, Page 6-6, Lines 1 to 36:</u></b></p> <p><b>Comment:</b> Two electronic level monitoring/indication systems have been installed in each basin, namely; the waste level in basins and the leachate sump level sensor. Both systems will be used to monitor any loss of waste from the basins. Neither of these systems is mentioned in this text.</p> <p><b>Requirement:</b> Both level monitoring systems should be described in this part of the permit.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to describe the leachate sump level sensors and basin level monitoring system.</p>	

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103.	<p><b><u>CHAPTER 6.0, SECTION 6.2.2.4.2, Page 6-6, Lines 38 to 51:</u></b></p> <p><b>Comment:</b> After the dikes were re-worked a <u>re-certification</u> was generated.</p> <p><b>Requirement:</b> The <u>re-certification</u> of the basin dikes must be included in this permit in <u>Appendix 4D</u> and not in 4C as mentioned in the text.</p> <p><b>DOE-RL/WHC Response:</b> Refer to response to Comment 60. This information will be included in Appendix 4D.</p>	
104.	<p><b><u>CHAPTER 6.0, SECTION 6.3.1.3, Page 6-8, Lines 16 and 17: "Emergency Equipment"</u></b></p> <p><b>Comment:</b> The information in Appendix 7A is not up-to-date with all the new changes implemented during construction.</p> <p><b>Requirement:</b> Revise the "Building Emergency Plan" for this facility.</p> <p><b>DOE-RL/WHC Response:</b> The building emergency plan is being revised and will include updated information for the LERF. An updated building emergency plan will be included in Appendix 7A.</p>	03/31/93 (verbal)
105.	<p><b><u>CHAPTER 6.0, SECTION 6.3.2, Page 6-8, Lines 44 and 45: "The Operation of LERF does not involve aisle space because liquid is stored in <u>four</u> storage basins."</u></b></p> <p><b>Comment:</b> Only <u>three</u> basins were constructed; two to store liquid waste and a third as a contingency basin.</p> <p><b>Requirement:</b> Revise the text throughout this permit application accordingly.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised.</p>	

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106.	<p><b>CHAPTER 6.0, SECTION 6.4.4, Page 6-10, Lines 15 and 16:</b> <i>"The storage function of the LERF is not affected by loss of power."</i></p> <p><b>Comment:</b> This statement is not accurate. All the monitoring, control, and pumping equipment at the LERF basins are vital to the storage function of the LERF.</p> <p><b>Requirement:</b> Revise text accordingly.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to describe that a temporary loss of power would not pose a threat to the environment, primarily because of the relatively slow rate that liquid flows into the basins. Loss of electrical power will not cause the storage of the LERF contents to be jeopardized. Backup power is provided for the 13.8 kV power source for the LERF. Refer to response to Comment 18.</p>	
107.	<p><b>CHAPTER 7.0, GENERAL:</b></p> <p><b>Comment:</b> Text in this section refers to documents which should satisfy the State and Federal requirements for a "contingency plan" for LERF. It is also mentioned in this text that the parts of these documents which pertain to LERF are attached to the Permit Application in <u>Appendix I</u>. Appendix I is not included in this Permit Application, nor are the referenced documents.</p> <p><b>Requirement:</b> All the documents which fulfill the regulatory requirements for a contingency plan for LERF must be included in this chapter for review and approval by Ecology.</p> <p><b>DOE-RL/WHC Response:</b> Chapter 7.0 of the LERF Part B permit application does not intend to imply that documents that pertain to LERF are included in an Appendix I of the permit application; rather, reference is made to Appendix I of the Building Emergency Plan - 200 Area Tank Farms. Appendix I, as mentioned in the comment, is an appendix of the 200 Area Tank Farms building emergency plan, which was included as Appendix 7A of the LERF Part B permit application. Text will be revised to clarify this issue.</p>	03/31/93 (verbal)

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108.	<p><b><u>CHAPTER 8.0, SECTION 8.1, Page 8-1, Line 22:</u></b></p> <p><b>Comment:</b> This line states that training is consistent with the contingency plan, but no details are included in this chapter.</p> <p><b>Requirement:</b> State specifically how the training plan and contingency plan are coordinated. State specifically what type of training is provided to employees regarding specific actions in the contingency plan.</p> <p><b>DOE-RL/WHC Response:</b> Specific responses to emergency conditions are covered in Chapter 7.0 and Appendix 7A. Refer to Chapter 8.0, Section 8.1.2 and 8.1.5, for personnel emergency response training content.</p>	
109.	<p><b><u>CHAPTER 8.0, SECTION 8.1.4, Page 8-26, Line 41:</u></b></p> <p><b>Comment:</b> Certification is discussed for some of the job titles associated with the LERF. However, many of the previously listed job titles are not discussed.</p> <p><b>Requirement:</b> Explain if all the job titles listed must be certified in order to work at the LERF Facility. WAC 173-303-330(1)(b) requires all employees to undergo an annual review of the training program. Explain how this review is accomplished.</p> <p><b>DOE-RL/WHC Response:</b> Unlike operations personnel and health physics technicians, not all employees require a certification/qualification training program. Chapter 8.0 has been rewritten. Refer to Tables 8.1 through 8.4.</p>	
110.	<p><b><u>CHAPTER 8.0, SECTION 8.1.5, Page 8-27, Lines 17 to 20:</u></b></p> <p><b>Comment:</b> See the previous comments regarding specifics on contingency plan training.</p> <p><b>Requirement:</b> This section must fulfill the requirements of WAC 173-303-330(1)(d). The specific procedures outlined in WAC 173-303-330(1)(d) must be addressed by the training program.</p>	

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	DOE-RL/WHC Response: Specific responses to emergency conditions are covered in Chapter 7.0 and Appendix 7A. Refer to Chapter 8.0 for personnel emergency response training content.	
111.	<p><u>CHAPTER 8.0, SECTION 8.2, Page 8-28, Line 7:</u></p> <p>Comment: Annual recertification of employees is required.</p> <p>Requirement: Explain the certification and recertification process and state how and/or if it fulfills WAC 173-303-330 requirements.</p> <p>DOE-RL/WHC Response: Annual recertification is applicable to dangerous waste management training courses, emergency response training courses, and general employees training courses. Refer to Tables 8-1 through 8-4 and Appendix 8A for course type and frequency of training.</p>	
112.	<p><u>CHAPTER 8.0, SECTION 8.2, Page 8-28, Lines 22 to 24:</u></p> <p>Comment: Copies of the training records are available at the Tank Farm Project training organization.</p> <p>Requirement: State the location of this organization and the specific location of the training records. Are the originals kept at the same location? If not, where are they kept?</p> <p>DOE-RL/WHC Response: Text will be revised to indicate that the name of each employee and the waste management position held are maintained by the TSD unit. Training records document that employees have received the training required for that position. Training records on current employees are kept until closure of the unit. Training records on former employees are kept for 3 years from the date the employee last worked at the TSD unit. Training records are maintained by the contractors' organizations in accordance with the requirements of the <i>Privacy Act of 1974</i>. Presently, the training records of individual employees are available for inspection purposes through the <i>Freedom of Information Act of 1966</i>. The DOE-RL is seeking authorization through the U.S. Department of Energy-Headquarters to amend the systems notice under the <i>Privacy Act of 1974</i> to allow regulatory agencies "routine use" access to training records under this act. Records are accessible onsite through Regulatory Compliance.</p>	

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113.	<p><b><u>CHAPTER 8.0 SECTION 8.2, Page 8-28, Lines 24 and 25:</u></b></p> <p><b>Comment:</b> Training records are kept for three years for former WHC employees. Training records of current employees must be maintained until closure of the LERF.</p> <p><b>Requirement:</b> State where the records of current and former employees are kept. Are the records maintained on-site, or are they archived elsewhere?</p> <p><b>DOE-RL/WHC Response:</b> Refer to the response to Comment 112.</p>	
114.	<p><b><u>CHAPTER 8.0, T8-1.1:</u></b></p> <p><b>Comment:</b> The note under the target audience for "Environmental and Hazardous Material Safety training Requirements" show that management determines what personnel must take this course. It is not clear from this and following tables which job titles are required to take these courses.</p> <p><b>Requirement:</b> Provide a table that correlates job titles for LERF employees to the environmental and safety training Tables 8-5 and 8-6. Table 8-7 is not sufficient, since it is open to various interpretations.</p> <p><b>DOE-RL/WHC Response:</b> Some personnel performing work activities in the TSD unit also might perform work activities at other work sites that requires a higher level of dangerous waste management training. Refer to new Tables 8-1 through 8-4.</p>	
115.	<p><b><u>CHAPTER 8.0, APPENDIX 8A, GENERAL:</u></b></p> <p><b>Comment:</b> Some of the courses listed here have been changed and updated. For example, the radiation safety courses length has been increased.</p> <p><b>Requirement:</b> Update the course descriptions and related information in Appendix 8A.</p> <p><b>DOE-RL/WHC Response:</b> Appendix 8A has been rewritten and will be included in the next revision of the LERF Part B.</p>	

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116.	<p><b><u>CHAPTER 10.0, GENERAL:</u></b></p> <p><b>Comment:</b> The Waste Minimization Program for the LERF should address the following areas:</p> <ul style="list-style-type: none"> <li>- A "Top Management Support" ensuring that waste minimization is a company/project-wide effort.</li> <li>- Characterization of Waste Generation.</li> <li>- Periodic Waste Minimization Assessments.</li> <li>- Encouragement of Technology Transfer.</li> <li>- Program Evaluation: Conduct periodic reviews of program effectiveness.</li> </ul> <p>The Waste Minimization Plan for LERF does not address all the areas as outlined in the above list.</p> <p><b>Requirement:</b> The EPA guidance document on Waste Minimization Plan Requirements, "<u>Waste Minimization Opportunity Assessment Manual, EPA/625/7-88/003</u>", should be referred to in establishing such a program for LERF. This waste minimization plan must address the minimization of hazardous waste from the thermal treatment unit.</p> <p><b>DOE-RL/WHC Response:</b> Requirements for waste minimization are contained in 40 CFR 264.73(a) and 264.73(b)(9). The requirements of 40 CFR.264.73(a) state that the "owner or operator must keep a written operating record at his facility." The requirements of 264.73(b)(9) mandate: "a certification by the permittee no less often than annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable..." To fulfill the requirements of 40 CFR 264.73(b)(9), a certification that the Hanford Facility has a waste minimization program in place will be entered, annually, into the Hanford Facility operating record. The LERF Part B permit application will be revised to refer to this certification and its location.</p>	

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117.	<p><u>CHAPTER 12.0, SECTION 12.2.2, Page 12-2, Lines 16 to 18:</u></p> <p><b>Comment:</b> The text refers to a "Transfer Datasheet".</p> <p><b>Requirement:</b> A "sample" copy of this form should be added at the end of this chapter.</p> <p><b>DOE-RL/WHC Response:</b> Because waste transfers from the 242-A Evaporator are considered onsite shipments, manifesting and/or shipping papers are not required to document these waste transfers. As such, it is not appropriate to include a sample transfer datasheet in the permit application. All waste transfer datasheets associated with the LERF operation will be available for onsite inspection by regulatory agencies.</p>	03/31/93 (verbal)
118.	<p><u>CHAPTER 12.0, SECTION 12.4.1.2, Page 12-4, Lines 13 to 15:</u></p> <p><b>Comment:</b> This text refers to a report (update) on anticipated closure and post-closure costs for the Hanford Facility. The first submittal of this report was supposed to take place on October 1, 1992.</p> <p><b>Requirement:</b> This text must be revised to account for the submittal, if made. If the report was not submitted, revise text to include the expected date of the submittal.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to indicate that projections of anticipated costs for closure of final status TSD units (i.e., those units which have been incorporated into the Hanford Facility Permit) will be provided annually in a separate report. Submittal of this report will take place on October 30 of each year, starting with the year after the issuance of the initial Hanford Facility Permit.</p>	

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119.	<p><b><u>CHAPTER 12.0, SECTION 12.4.1.4.3, Page 12-6, Lines 11 to 14:</u></b></p> <p><b>Comment:</b> WAC 173-303-645(11)(c) states that the department (Ecology) will specify, in the Facility Permit, the time after which a corrective action must be started after the set dangerous constituents limits have been exceeded.</p> <p><b>Requirement:</b> Ecology will set this time limit for implementing a corrective action program after discussing all elements affecting such a time period with USDOE and WHC.</p> <p><b>DOE-RL/WHC Response:</b> This requirement is understood. The section does not suggest anything contrary to the regulation cited. No revision of text is necessary.</p>	
120.	<p><b><u>CHAPTER 12.0, SECTION 12.4.2.3.3, Page 12-15, Lines 37 to 39:</u></b></p> <p>See comment #118</p> <p><b>DOE-RL/WHC Response:</b> Refer to the response to Comment 118.</p>	
121.	<p><b><u>CHAPTER 11.0, SECTION 11.1.1.1, Page 11-3, Line 14:</u></b></p> <p><b>Comment:</b> The last paragraph of this section uses the term "<i>RCRA-regulated wastes</i>". The proper term is "dangerous waste.". Also, use of the term "RCRA" should be replaced with the term "HWMA".</p> <p><b>Requirement:</b> Edit the text as noted above here and throughout the chapter unless the text is intentionally referring to the Federal program instead of the state program. This correction may also need to be made in other chapters of the permit application.</p> <p><b>DOE-RL/WHC Response:</b> The term "RCRA-regulated waste" will be replaced with "state and federally regulated dangerous waste."</p>	

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122.	<u>CHAPTER 11.0, SECTION 11.1.1.2, Page 11-3, Lines 26 to 43:</u>	
	<p><b>Comment:</b> The first bullet in this section discusses the use of a fish bioassay to determine the degree of contamination on the synthetic liners. Although this test may be useful for determining if the liners fail the State's toxicity criteria for determining the designation of a waste, it only represents one of several tests for listed, characteristic, and criteria waste.</p> <p><b>Requirement:</b> Some percentage of the sampling should be conducted with wipe samples to determine the actual amount of contamination on the liners. The wipe testing should be consistent with other wipe testing conducted by USDOE for designating solid materials.</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised to include wipe sampling as a method of determining whether the liner would designate as a dangerous waste.</p>	
123.	<u>CHAPTER 11.0, SECTION 11.1.1.2, Page 11-4, Lines 25 to 52:</u>	
	<p><b>Comment:</b> The second bullet in this section discusses the use of "<i>indicator parameters</i>". The text defines these as a list of volatile organics given in Chapter 3. Using only volatile organics as indicators is insufficient. Metals, radioactivity, semi-volatile organics, and other non-organic parameters should also be used.</p> <p><b>Requirement:</b> The list of indicator parameters needs to be expanded to include other types of contamination as listed above unless adequate justification can be presented to support the use of only volatile organics.</p> <p><b>DOE-RL/WHC Response:</b> The intent of sampling and analysis for volatile organics is to determine whether the synthetic liner has leaked into the lining layers below the HDPE. This sampling is not intended as a means of designating potentially contaminated materials. Volatiles were selected as indicator parameters due to their high mobility and zero concentration background levels in natural soils.</p>	

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124.	<u>CHAPTER 11.0, SECTION 11.1.1.2, Page 11-5, Lines 1 to 5:</u>  <b>Comment:</b> The third bullet discusses the use of " <i>risk-based cleanup levels</i> ". This is not consistent with current dangerous waste regulations (WAC 173-303-610(2)(b)).  <b>Requirement:</b> Unless and until the dangerous waste regulations are modified (this is currently being addressed), the use of risk-based levels is not allowed to determine clean closure of a dangerous waste management unit.  <b>DOE-RL/WHC Response:</b> Text will be revised to indicate that cleanup of potentially contaminated soils will be performed to achieve required environmentally protective regulatory concentrations at the time of closure.	
125.	<u>CHAPTER 11.0, SECTION 11.1.1.2, Page 11-5, Lines 7 to 11:</u>  <b>Comment:</b> The fourth bullet addresses the decontamination of aboveground piping by using three discrete water rinsing events. The text indicates that the piping will be inappropriate to consider the piping decontaminated without sampling.  <b>Requirement:</b> The rinsate should be sampled prior to determining that the piping is decontaminated. No rinsate should be discharged until sampling confirms the absence of contamination.  <b>DOE-RL/WHC Response:</b> Text will be added to indicate that the rinsate will be contained, sampled, analyzed, and disposed of in a manner consistent with the analytical results.	
126.	<u>CHAPTER 11.0, SECTION 11.1.4, Page 11-5, Lines 44 and 45:</u>  <b>Requirement:</b> The last sentence in this section should read: "All items that require decontamination could be disposed of as dangerous waste instead of being decontaminated."  <b>DOE-RL/WHC Response:</b> Text will be revised as requested.	

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127.	<p><u>CHAPTER 11.0, SECTION 11.1.4.2, Page 11-6, Lines 8 and 9:</u></p> <p>Requirement: The second sentence of this section should read: "The cover either will be disposed of as dangerous waste or reused.</p> <p>DOE-RL/WHC Response: Text will be revised as requested.</p>	
128.	<p><u>CHAPTER 11.0, SECTION 11.1.4.2, Page 11-6, Lines 17 to 33:</u></p> <p>Comment: The discussion in the second paragraph of this section talks about pulling non-decontaminated covers onto the adjacent soils. There are no restrictions on the condition of the covers if this option is used.</p> <p>Requirement: Covers which will be pulled back onto uncontaminated soil must not be wet or have crystallized waste adhering to the cover.</p> <p>DOE-RL/WHC Response: Text will be revised.</p>	
129.	<p><u>CHAPTER 11.0, SECTION 11.1.4.5, Page 11-8, Lines 28 and 29:</u></p> <p>Comment: The last sentence of this section states that rinsate will be processed through the evaporator "if necessary."</p> <p>Requirement: What criteria are used to make this determination? If it is not determined to send the rinsate to the evaporator, what will be done with this liquid?</p> <p>DOE-RL/WHC Response: Text will be revised to indicate that the rinsate will be sampled and analyzed, and treated or disposed of in a manner consistent with the analytical results.</p>	

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130.	<u>CHAPTER 11.0, SECTION 11.1.4.6, Page 11-9, Lines 10 to 24:</u>	
	<p><b>Comment:</b> The third paragraph of this section discusses the use of "action levels". However, it is not evident what the action levels will be.</p> <p><b>Requirement:</b> The text must define action levels before an assessment can be made on their proper use.</p> <p><b>DOE-RL/WHC Response:</b> The first action levels used will be Sitewide background concentrations (DOE-RL 1992). For values above these levels, health-based action levels would be established with Ecology's input through use of the data quality objectives process.</p> <p><b>Reference will be added:</b> DOE-RL 1992 <i>Hanford Site Soil Background</i> (DOE/RL-92-24).</p>	
131.	<u>CHAPTER 11.0, SECTION 11.1.4.7, Page 11-10, Lines 38 and 39:</u>	
	<p><b>Requirement:</b> The last sentence in this section should read: "Other contaminated items could be disposed of as dangerous waste in lieu of decontamination."</p> <p><b>DOE-RL/WHC Response:</b> Text will be revised.</p>	

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132. CHAPTER 11.0, SECTIONS 11.6 and 11.7, Page 11-15, Lines 24 to 36:

**Requirement:** The text in each of these sections should be replaced with the text found in section 11.2 since postclosure is not an issue for this unit.

**DOE-RL/WHC Response:** Text will be revised to indicate the following:

Section 11.6 Federal facilities are not required to comply with WAC 173-303-620 as is stated in the regulations,. However the DOE-RL has agreed to provide projections of anticipated costs for closure of final status TSD units (i.e. those units for which final status permit chapters have been incorporated into the Hanford Facility Permit) on an annual basis in separate report (Chapter 12.0, Section 12.4.2.3.3). Submittal of this report will take place on October 30 of each year, starting with the year after the issuance of the permit.

Section 11.7 In accordance with 40 CFR 264.140(c) and WAC 173-303-620(1)(c), this section is not required for federal facilities. The Hanford Facility is a federally owned facility for which the federal government is the operator, and this section is therefore not applicable to the LERF.

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