

**Isom, Debra A (Debbi)**

**From:** Huckaby, Alisa [AHUC461@ECY.WA.GOV]  
**Sent:** Monday, May 14, 2001 1:55 PM  
**To:** 'Debra\_A\_Debbi\_Isom@RL.gov'  
**Cc:** 'Roger\_W\_Szelmezcza@RL.gov'; Glenn\_Richardson@RL.gov; Jamie\_G\_Granger@RL.gov;  
Kevin\_D\_Leary@RL.gov; Jamison, Fred; Caggiano, Joseph; Huckaby, Alisa  
**Subject:** FW: LERF/ETF WAC



LERF-ETF Waste  
Acceptance Revi...



LERF-ETF.pdf

Debbi,

Ecology hopes to modify the RCRA permit for the Liquid Effluent Retention Facility (LERF) within the next 15 months. DOE and Contractors provided information that I would like to have placed on the administrative record. During a monthly project management meeting, I took an action item to request the below information be placed on the administrative record in support of the upcoming permit modification. Would you please place these electronic mail messages and attached files on the LERF administrative record? If you have any questions or would like to discuss, please call me at 736-3034. In advance, thank you for your assistance.

Alisa Huckaby  
Washington State Department of Ecology  
509/736-3034  
ahuc461@ecy.wa.gov  
FAX 736-3030

**RECEIVED**  
MAY 14 2001

**EDMC**

> -----Original Message-----

> From: Glenn\_Richardson@RL.gov [mailto:Glenn\_Richardson@RL.gov]  
> Sent: Wednesday, March 28, 2001 7:19 AM  
> To: Huckaby, Alisa  
> Cc: Marvin\_J\_Furman@rl.gov; john.fruchter@pnl.gov;  
> stuart.luttrell@pnl.gov; Donald\_K\_Kent\_Smith@rl.gov; Paul\_J\_Crane@rl.gov;  
> Richard\_H\_Gurske@rl.gov; Kevin\_D\_Leary@rl.gov; Jamie\_G\_Granger@rl.gov;  
> Caggiano, Joseph; Jamison, Fred; Conaway, Kathy  
> Subject: FW: LERF/ETF WAC

> Alisa,

> The information below (with two files attached) satisfies our final  
> deliverable per your verbal request via the March 22, 2001 Ecology Project  
> Manager Meeting. This information should also be incorporated into the  
> Administrative Record at the next scheduled meeting. I trust the  
> supplemental information that we have provided in addition to the  
> requested deliverables per the Ecology letter, dated Jan. 24, 2001, will  
> fulfill all of your data needs to support our recommended path forward.  
> We look forward to hearing from you within the very near future regarding  
> the LERF Workshop. Also, please allow us a two week window for adequate  
> preparation to support the workshop.

> I'll be out of the office the remainder of this week. Should any  
> immediate questions arise, please contact Marv Furman or Kevin Leary.  
> I will be back in the office on Monday, April 2, 2001.

> Thanks,  
> Glenn

> -----Original Message-----

> From: Szelmezcza, Roger W  
> Sent: Thursday, March 22, 2001 3:02 PM  
> To: Richardson, Glenn  
> Cc: Smith, Donald K (Kent); Crane, Paul J; Gurske, Richard H; Leary,

> Kevin D; Granger, Jamie G  
> Subject: LERF/ETF WAC  
>  
> Glenn,  
>  
> Two attachments are provided. The first is an overview of the LERF/ETF  
> waste acceptance program which I prepared to illustrate the relationship  
> of the factors that influence waste acceptance at LERF/ETF.  
> <<LERF-ETF Waste Acceptance Review Process Overview.doc>>  
>  
> The second attachment is the LERF/ETF waste acceptance procedure.  
> <<LERF-ETF.pdf>>  
> LWPF has updated and is in the process of issuing "Hanford Liquid Waste  
> Acceptance Criteria", HNF-3172, Rev. 1. This document provides a tool for  
> generators to determine if their waste is acceptable for treatment,  
> storage or disposal at LERF/ETF. If the above two documents are  
> insufficient, let me know and I can forward a copy of HNF-3172 as soon as  
> it is issued.  
>  
> Roger

## LERF/ETF Treatability Envelope

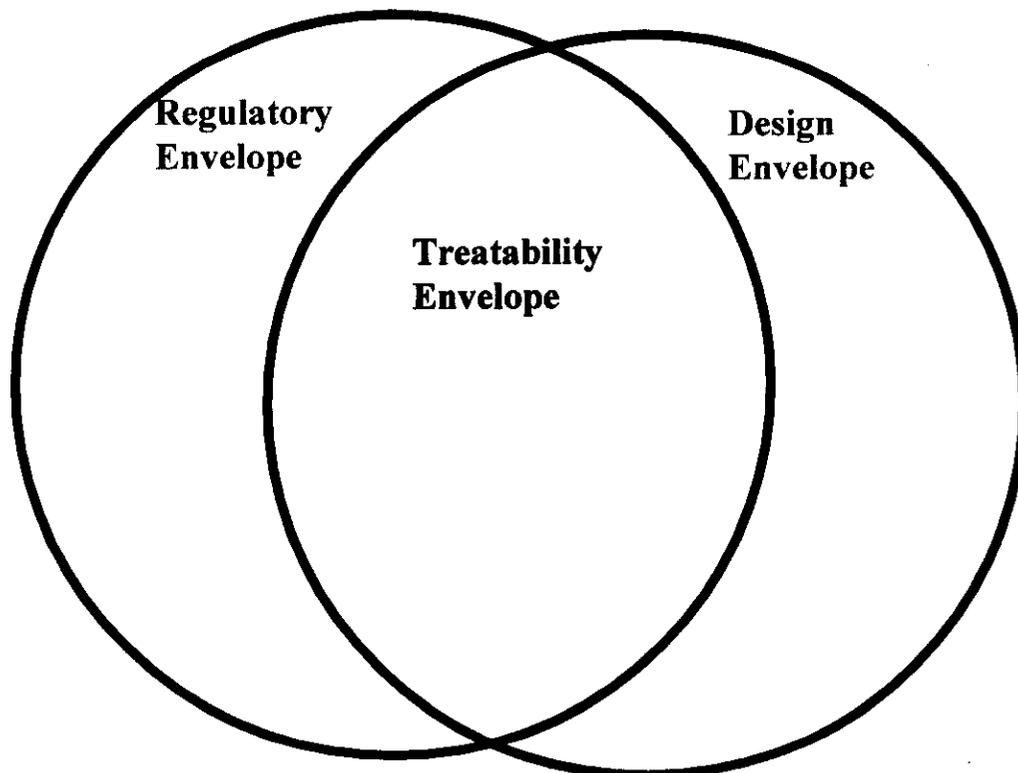
This description of the LERF/ETF waste acceptance process provides an overview of the process that occurs for each new feed being considered for treatment, storage, and disposal. Because of the general nature of this description, the requirements documents should be consulted to determine specific requirements.

The treatability envelope for the LERF and ETF consists of a regulatory component and a design component.

The regulatory envelope is those wastes which LERF/ETF is permitted to receive, store, treat, and dispose. It is bounded by various Federal and State environmental permits, regulations, and DOE Orders that govern the operation of the LERF and ETF.

The design envelope is bounded by the operating conditions established in four process flowsheets used at the LERF and ETF. A process flowsheet contains information on the processing sequence, material balance, and flow rate of an aqueous waste stream. The design envelope includes all wastes that LERF/ETF is physically capable of treating, storing, and/or disposing.

The treatability envelope is where the design envelope and the regulatory envelope overlap. Modifications to either component can change the treatability envelopes. For example, permitting documents can be modified and/or design changes can be made to expand the universe of wastes which can be safely and compliantly managed at LERF/ETF.



## LERF/ETF WASTE ACCEPTANCE OVERVIEW

### **LERF/ETF Waste Acceptance Process**

The waste acceptance process for the LERF/ETF is described in HNF-3172, "HANFORD SITE LIQUID WASTE ACCEPTANCE CRITERIA." Waste acceptance is documented through the use of an administrative procedure, "New Waste Stream Acceptance At LERF/ETF." There are three basic steps in the acceptance process.

Step 1. Assemble waste information

Step 2. Compare waste information to regulatory envelope

Step 3. Compare waste information to design envelope

#### **Step 1: Assemble Waste Information**

- Generator characterizes and designates the waste
- Generator identifies applicable LDR treatment standards
- LWPF and generator determine appropriate sampling and analysis required
- Waste profile sheet documents waste information and supports evaluation for treatment/storage/disposal at LERF/ETF

#### **Step 2: Compare Waste To Regulatory Envelope**

- Evaluate NEPA/SEPA Documentation
  - a) NEPA CX addresses modification to the LERF and ETF and related support facilities to accept additional Hanford Site waste streams
  - b) acceptance of new waste streams cannot result in substantially different types or volumes of discharges than those approved
- Dangerous Waste Permit Review
  - a) acceptable waste codes listed in Chapter 1 (formerly Part A)
  - b) LERF Liner compatibility assessment
- Delisting Petition Review
  - a) ensure waste codes are consistent with delisting approval
  - b) ensure treated effluent will meet the Delisting limits
- State Waste Discharge Permit Review
  - a) Specific constituents approved for treatment
  - b) constituent levels compared to list of approved constituents of concern
- Hazardous Categorization/Auditable Safety Analysis Review
  - a) radiological data is compared to the maximum bounding source term
  - b) dose consequence evaluation
- Manage Facility Radiological Inventory
  - a) characterize radiological inventory

## LERF/ETF WASTE ACCEPTANCE OVERVIEW

- b) calculate maximum allowable feed batch volume.
- Evaluate Potential Radioactive Air Emissions
  - a) Adding new radionuclides or exceeding the estimated offsite dose requires pre-approval from the WDOH.
- Evaluate Potential Nonradioactive (Toxic) Air Emissions
  - a) Organic emissions
  - b) Inorganic emissions
  - c) ammonia emissions

### **Step 3: Compare Waste To Design Envelope**

- Suspended Solids
  - a) Prevent sludge accumulation in LERF
  - b) Can reduce treatment capacity by exceeding the design limits for ETF filtration
  - c) Bacteria can be troublesome for the ETF
- Organics
  - a) Organic destruction in UV-OX follows first order kinetics
  - b) Some organics require a narrower operating envelope to achieve discharge limits
  - c) Systems are not designed to treat significant concentrations of oil and grease
- Dissolved Solids
  - a) Some common waste constituents cause scaling of the RO membrane
  - b) High chloride and fluoride levels increase corrosion of stainless steel
  - c) Ability to produce a dry powder waste form with acceptable physical properties
  - d) Ammonia needs to be kept in solution rather than being emitted as a gas
- Evaporator/Dryer Feed Composition
  - a) determine the drying characteristics of the concentrated waste
  - b) Some compounds are difficult to dry or are detrimental to the STT

HNF-3172  
Revision 1

ECN 658598

# Liquid Waste Processing Facilities Waste Acceptance Criteria

Document Type: WAC

Division: WM

K. J. Lueck  
Fluor Hanford

M. D. LeClair  
SAIC

Date Published  
March 2001

Prepared for the U.S. Department of Energy  
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the  
U.S. Department of Energy under Contract DE-AC06-99RL13200

**Fluor Hanford**  
P.O. Box 1000  
Richland, Washington

  
Release Approval

3-27-2001  
Date

MAR 27 2001		
DATE:		ID.
STA:		25
2		

Release Stamp

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## 1.0 Purpose

This procedure defines the steps and requirements necessary to introduce an aqueous waste into the Liquid Waste Retention Facility (LERF) and the Effluent Treatment Facility (ETF) for storage and treatment.

## 2.0 Scope

This procedure applies to all new aqueous wastes that are being considered for storage and treatment at LERF and ETF.

## 3.0 Definitions

**Aqueous Waste:** Liquid containing less than 1 percent suspended solids and less than 1 percent organic.

## 4.0 Responsibilities

### 4.1 200 Area Liquid Waste Processing Facilities (LWPF) Manager

4.1.1 Authorize acceptance of an aqueous waste at LERF and ETF. The LWPF Manager may delegate this authorization to other facility personnel.

4.1.2 Ensure compliance with programmatic requirements.

4.1.3 Ensure that all applicable personnel understand and comply with the requirements of this procedure.

### 4.2 200 Area LWPF Engineering Group Manager

4.2.1 Designate knowledgeable personnel to evaluate and complete all requirements necessary to determine if an aqueous waste is acceptable for receipt at LERF and ETF and approve Aqueous Waste Acceptance Checklist. Personnel are required to have completed Dangerous Waste Training.

4.2.2 Ensure compliance with programmatic requirements.

### 4.3 200 Area LWPF Environmental Compliance Officer

4.3.1 Approve Aqueous Waste Acceptance Checklist.

4.3.2 Ensure compliance with regulatory requirements.

## 5.0 Procedure

### 5.1 Aqueous Waste Profile

The aqueous waste generator is required to complete and certify a waste profile sheet (WPS) (see Attachment A) with all supporting documentation and analytical data attached. This documentation must be returned to the LWPF Engineering Group. At a minimum, the WPS must include the following aqueous waste information: volume, source, chemical and physical composition, regulatory designation per WAC 173-303-070, and identification of any constituents above the Land Disposal Restrictions (LDR) treatment standards per 40 CFR 268.48. EPA-approved analytical methods must be used when characterizing the aqueous waste as listed in the Waste Analysis Plan (DOE/RL-97-03, Appendix 3A) for LERF and ETF. The LWPF Engineering Group may grant approval for a generator to either eliminate or substitute process knowledge in lieu of analytical data.

### 5.2 Aqueous Waste Acceptance Checklist

The aqueous waste acceptance checklist is required to be completed by the LWPF Engineering Group before aqueous waste can be accepted at LERF and/or ETF for storage and treatment. The checklist must be completed in accordance with the checklist instructions given in Attachment D and approved by the Manager of the LWPF Engineering Group, or delegate, and the Environmental Compliance Officer (ECO) before waste can be received at LERF or ETF.

### 5.3 Record Keeping

The completed WPS and checklist, along with all supporting analytical data and documentation, shall be retained on file at the 200 Area LWPF Records Control Center.

## 6.0 Attachments

Attachment A. Liquid Waste Profile Sheet for 200 Area ETF

Attachment B. 200 Area ETF Land Disposal Restriction Waste Identification Sheet

Attachment C. Organic and Inorganic Compounds

Attachment D. Aqueous Waste Acceptance Checklist

## Attachment A. Liquid Waste Profile Sheet for 200 Area ETF

Generating Facility/Location:		Facility Manager:			
Technical Contact:		Environmental Compliance Officer:			
DOE Point of Contact:					
General Waste Information					
1	Describe source of liquid waste and process generating the waste				
2	Was the liquid waste generated on the Hanford Site?	Yes		No	
3	Is the liquid waste from a CERCLA or state-mandated cleanup?	Yes		No	
	If yes, has the solid waste that will be generated from the treatment of the waste been approved for disposal at the Environmental Restoration Disposal Facility (ERDF)?	Yes		No	
4	Is the liquid waste a dangerous or hazardous waste (40 CFR Part 261 or WAC 173-303-070)?	Yes		No	
	If yes, identify all hazardous/dangerous listed and characteristic waste number(s) (e.g., D,F,K, etc.).				
5	Do any state-only waste numbers apply to the liquid waste?	Yes		No	
	If yes, identify state waste number(s) and explain designation.				
6	Is the liquid waste considered a wastewater (i.e., less than 1 wt% total organic carbon and less than 1 wt% total suspended solids)?	Yes		No	
7	Is any constituent in the liquid waste above its LDR treatment standard for wastewaters (40 CFR 268.40)?	Yes		No	
	If yes, list the dangerous waste number, constituent, and wastewater treatment standard from 40 CFR 268. Use the table on page APP D-3 or equivalent.				
8	Does the liquid waste contain PCBs? If no skip to question #8.	Yes		No	
	Is the PCB contamination from a regulated TSCA source?	Yes		No	
	If yes, identify regulated TSCA source.				
	Is the PCB contamination from a WAC 173-303 source with waste number W001?	Yes		No	
	If yes, identify regulated W001 source.				
	Is the PCB regulated as persistent by WAC 173-303?	Yes		No	
If yes, identify waste number.					

## Attachment A. Liquid Waste Profile Sheet for 200 Area ETF

Shipping/Transportation Information				
9	Current storage container of liquid waste (e.g., sump, tank, drum, etc.)			
10	Discharge/shipment frequency	Batch		Total volume:
		Continuous		Volume per month:
11	State method of shipment of liquid waste (e.g., process sewer, tanker, drum, etc.)			
12	Is the liquid waste Department of Transportation (DOT) hazardous material?			Yes
	State proper shipping name:			No
13	State CERCLA reportable quantity (RQ) and unit (if applicable):			
14	Attach all applicable information and analytical data. If multiple sets of analytical data are available, provide a table giving average and maximum concentrations of each constituent.			
I hereby certify that all information submitted on this Liquid Waste Profile Sheet and all attached documents contains true and accurate descriptions of this waste and were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. All relevant information regarding known or suspected hazards in the possession of the generating unit has been disclosed.				
Signature of Manager or Director:			Date:	



## Attachment C. Organic and Inorganic Compounds

Organic Compound	Analytical Method	Inorganic Compound	Analytical Method
Acetone	8260A	Aluminum	6010A/EPA-600 200.7
Acetophenone	8270B	Antimony	EPA-600 200.8
Benzene	8260A	Arsenic	EPA-600 200.8
Benzyl alcohol	8270B	Barium	6010A/EPA-600 200.7
1-Butyl alcohol (n-butanol, 1-butanol)	8260A	Beryllium	6010A/EPA-600 200.7
2-Butoxyethanol	8270B	Cadmium	EPA-600 200.8
Carbon tetrachloride	8260A	Calcium	6010A/EPA-600 200.7
Chlorobenzene	8260A	Chromium	7191/EPA-600 200.8
Chloroform	8260A	Copper	6010A/EPA-600 200.7
Total cresol (total methyl phenol)	8270B	Iron	6010A/EPA-600 200.7
1,4-Dichlorobenzene	8270B	Lead	EPA-600 200.8
1,2-Dichloroethane (total)	8260A	Magnesium	6010A/EPA-600 200.7
1,1-Dichloroethene (1,1-dichloroethylene)	8260A	Manganese	6010A/EPA-600 200.7
1,2-Dichloroethene	8260A	Mercury	EPA 245.1/EPA-600 200.8
Dimethylnitrosamine (N-nitrosodimethylamine)	8270B	Nickel	6010A/EPA-600 200.7
Di-n-octyl phthalate	8270B	Potassium	6010A/EPA-600 200.7
2,4-Dinitrotoluene	8270B	Selenium	EPA-600 200.8
Hexachloroethane	8270B	Silicon	6010A/EPA-600 200.7
2-Hexanone	8260A	Silver	6010A/EPA-600 200.7
Methylene chloride	8260A	Sodium	6010A/EPA-600 200.7
Methyl ethyl ketone (2-butanone)	8260A	Uranium	EPA-600 200.8
Methyl isobutyl ketone (4-methyl-2-pentanone; hexone)	8260A	Vanadium	6010A/EPA-600 200.7
Naphthalene	8270B	Zinc	6010A/EPA-600 200.7
2-Pentanone	8260A	Ammonia (as N)	EPA-600 350.3/350.1
Tetrachloroethylene (tetrachloroethene)	8260A	Bromide	EPA-600 300.0

Organic Compound	Analytical Method	Inorganic Compound	Analytical Method
Tetrahydrofuran	8260A	Chloride	EPA-600 300.0
Toluene	8260A	Cyanide	9010A/EPA-600 335.3
Tributyl phosphate	8270B	Fluoride	EPA-600 300.0
1,1,1-Trichloroethane	8260A	Nitrate	EPA-600 300.0
1,1,2-Trichloroethane	8260A	Nitrite	EPA-600 300.0
Trichloroethylene	8260A	pH	EPA-600 150.1/9040
Xylene	8260A	Phosphate	EPA-600 300.0
Vinyl chloride	8260A	Specific conductance	EPA-600 120.1
Others (identify)		Sulfate	EPA-600 300.0
		Total dissolved solids	EPA-600 160.1
		Total suspended solids	EPA-600 160.2
		Total organic carbon	9060A
		Others (identify)	

Radionuclide	Analytical Method	Radionuclide	Analytical Method
Gross alpha	Laboratory specific	Cesium-134	Laboratory specific
Gross beta	Laboratory specific	Cesium-137	Laboratory specific
Tritium	Laboratory specific	Cerium-144	Laboratory specific
Carbon-14	Laboratory specific	Europium-154	Laboratory specific
Cobalt-60	Laboratory specific	Europium-155	Laboratory specific
Zinc-65	Laboratory specific	Radium-226	Laboratory specific
Selenium-79	Laboratory specific	Uranium (gross)	EPA-600 200.8
Strontium-90	Laboratory specific	Neptunium-237	Laboratory specific
Niobium-94	Laboratory specific	Plutonium-238	Laboratory specific
Technetium-99	Laboratory specific	Plutonium-239/240	Laboratory specific
Ruthenium-103	Laboratory specific	Plutonium-241	Laboratory specific
Ruthenium-106	Laboratory specific	Americium-241	Laboratory specific
Tin-113	Laboratory specific	Curium-244	Laboratory specific
Antimony-125	Laboratory specific	Others (identify)	
Iodine-129	Laboratory specific		

Attachment D. Aqueous Waste Acceptance Checklist

ID No. NF-XXXX-XX-X

(a)

Aqueous Waste: \_\_\_\_\_ (b)

Regulatory File No: 1406.xx (c)

Checklist Completed by: \_\_\_\_\_ (d)

Date: \_\_\_\_\_

Environmental Compliance Officer: \_\_\_\_\_ (e)

Date: \_\_\_\_\_

This checklist shall be completed for each aqueous waste that may be introduced to the Liquid Effluent Retention Facility (LERF) and/or to the 200 Area Effluent Treatment Facility (ETF). The checklist along with all supporting documentation shall be kept on file at the 200 Area LWPF Records Control Center.

The attached instruction sheet must be used when filling out the acceptance checklist. Insert "N/A" for any of the subjects that do not apply to the aqueous waste.

No.	Subject	Yes	No	Comment
1	Has the generator's Waste Profile Sheet (WPS) been reviewed and accepted? If yes, attach copy of WPS to the checklist along with any supporting documentation and analytical data. If no, state why under "Comments."			
2	Is the storage/treatment of the aqueous waste compliant with the LERF and/or the ETF National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) documents? If no, state why and recommended action under "Comments."			
3	Is the aqueous waste within the bounds of the LERF Authorization Safety Analysis (ASA)? If no, state recommended action under "Comments."			

No.	Subject	Yes	No	Comment
4a	Is the aqueous waste within the bounds of the ETF ASA? If no, state recommended action under "Comments."			
4b	Has the ETF radionuclide inventory calculation been updated to include the aqueous waste?			
5	Is the aqueous waste compatible with the current LERF and/or ETF inventory in which the waste will be in contact with? If no, state why under "Comments."			
6	Is the aqueous waste compatible with the LERF liner? If no, state why under "Comments."			
7	Is the aqueous waste compatible with the ETF Truck Load-in Facility materials of construction? If no, state why under "Comments."			
8	Is the aqueous waste compatible with the ETF materials of construction? If no, state why under "Comments."			
9	Can the ETF process the aqueous waste without system modifications? If no, state what modification (e.g., blending) would be required before this aqueous waste can be processed through the ETF.			
10	Is the generator required to pre-treat (e.g., filter) the aqueous waste before transfer to the LERF and/or ETF? If yes, state what type of pretreatment is required under "Comments."			
11a	Does the aqueous waste meet the non-radioactive air emissions per the Notice of Construction (No. 96NW-1-301)?			
11b	Is the wastewater within the allowable annual LERF and/or ETF curie air emission? If yes, attach supporting documentation.			

WMP-331

200 Area Liquid Waste Processing Facilities Administrative Procedures

New Waste Stream Acceptance At LERF/ETF

Technical Authority: K.J. Lueck

3.11

Rev. 1

Effective Date: 01/09/2001

Page 11 of 17

No.	Subject	Yes	No	Comment
12	Is the aqueous waste covered under the LERF and ETF Part A, Form 3 permit, and the "Hanford Facility Dangerous Waste Permit Application, LERF and ETF?"			
13	Are any aqueous waste constituents above Land Disposal Restriction (LDR) treatment standards? If yes, have the 200 Area LWPF Operations and the 200 Area LWPF Environmental Compliance Officer (ECO) been notified?			
14	Has Ecology granted approval to process this aqueous waste in the ETF per the discharge permit No. ST 4500? If yes, attach documentation.			
	If no, has a draft characterization study been completed? Reference letter under "Comments."			
15	Has the aqueous waste generator been notified by the 200 Area LWPF Facility Manager (or designee) of acceptance or rejection of waste in the LERF and at ETF?			
16	Will the solid waste generated by treating this waste be designated as a dangerous/hazardous waste under RCRA?			
	Will the solid waste generated by treating this waste contain constituents above the LDR treatment standards?			
	Will the solid waste generated by treating this waste meet the Environmental Restoration Disposal Facility (ERDF) acceptance criteria?			
	Will sampling be needed to confirm the waste designation, LDR constituent concentrations, or ERDF waste acceptability?			

No.	Subject	Yes	No	Comment
17	Will the aqueous waste be transferred to a LERF Basin? If no, state method of transfer (tanker, containers, etc.) to the ETF under "Comments."			
	If yes, will the aqueous waste be transferred to LERF Basin 42? State method of transfer (e.g., tanker, pipeline, etc.) under "Comments."			
	If yes, will the aqueous waste be transferred to LERF Basin 43? State method of transfer (e.g., tanker, pipeline, etc.) under "Comments."			
	If yes, will the aqueous waste be transferred to LERF Basin 44? State method of transfer (e.g., tanker, pipeline, etc.) under "Comments."			
18	Has 200 Area LWPF Operations been notified of acceptance of the aqueous waste, including generator's tentative shipping date?			
19	Add any additional comments of concern:			

The letters and numbers of the steps below correspond to the preceding checklist:

- (a) Assign an aqueous waste ID No. by the following:

NF-XXXX-XX-X

NF-Facility-Year-Number

Facility: The facility or location of the generator

Year: 96, 97, etc.

Number: Sequential starting with first aqueous waste from a given area as 1

- (b) Name of the aqueous waste.
- (c) Regulatory file number is assigned by the 200 Area LWPF Records and Control Center custodian. The regulatory file name will be 1406.XX, with XX sequential with the first new aqueous waste given 1406.1.
- (d) Name and date of LWPF Engineering Group personnel completing the aqueous waste acceptance checklist (checklist).
- (e) Name of the ECO and date completing the aqueous waste acceptance checklist.

### 1.0 Waste Profile Sheet

Before an aqueous waste can be accepted at LERF and/or ETF, the generator shall provide a completed and certified Waste Profile Sheet. The reviewer shall make sure that:

- Supporting documentation and analytical data are attached.
- EPA-approved analytical methods, listed in the Waste Analysis Plan in the Hanford Facility Dangerous Waster Permit Application, LERF and ETF (DOE/RL-97-03), were used.
- Process knowledge is adequate when used in lieu of analytical data.

If the aqueous waste will be received routinely over a period of time, the LWPF Engineering Group shall evaluate the need for a continuing sampling program to ensure that the waste characterization is kept updated. The LWPF Engineering Group shall document the review of continuing sampling by initialing and dating the sampling data and placing it in the appropriate file at the 200 Area LWPF Records Control Center.

## 2.0 NEPA/SEPA

Before an aqueous waste can be accepted at LERF and/or ETF, the LWPF Engineering Group must review applicable National Environmental Policy Act (NEPA) documentation to ensure the activity has been adequately reviewed against environmental documentation:

*Memorandum-to-File for the Liquid Effluent Retention Facility*, dated March 15, 1990.

*Environmental Assessment - Hanford Environmental Compliance Project*, DOE/EA-0383.

*Categorical Exclusion for Low-Level Liquid Waste Treatment Facilities Upgrades, Hanford Site, Richland, Washington*, Correspondence Number 9600389.

## 3.0 LERF Safety Documentation

An aqueous waste cannot be accepted in the LERF unless it meets the bounds of the HNF-SD-ETF-ASA-002, *Liquid Effluent Retention Facility Auditable Safety Analysis Report (ASA)*. Individual radionuclides may exceed the concentrations in the ASA provided the modeled dose from a pressurized spray release and a pool release do not exceed the dose values in the ASA.

## 4.0 ETF Safety Documentation

An aqueous waste cannot be accepted in the LERF unless it meets the bounds of the HNF-SD-ETF-ASA-001, *200 Area Effluent Treatment Facility Auditable Safety Analysis Report*. To determine compliance, perform a Category 3 inventory sum-of-the-fraction calculation and compare it to the current inventory calculated per WMP-331, *200 Area Liquid Waste Processing Facilities Administrative Procedures*, Section 3.6, "LWPF Radionuclide Inventory Management." If the calculated inventory exceeds the current inventory, update the current inventory.

## 5.0 Compatibility with Current Aqueous Waste Inventory

Before an aqueous waste can be accepted at LERF and ETF, the aqueous waste characterization data shall be evaluated to determine the potential for the aqueous waste to react with another existing waste per 40 CFR 264, Appendix V, "Examples of Potentially Incompatible Wastes."

## **6.0 Compatibility with LERF Liner**

Before an aqueous waste can be accepted at LERF, the aqueous waste characterization data shall be compared against the general limits for liner compatibility outlined in the Waste Analysis Plan (DOE/RL-97-03, Appendix 3A) for LERF and ETF.

## **7.0 Compatibility with Load-In Facility Materials of Construction**

Before an aqueous waste can be accepted through the ETF Load-in Facility, the waste characterization data shall be evaluated to ensure the waste is compatible with the facility materials of construction as to not compromise the integrity of the system.

## **8.0 Compatibility with ETF Materials of Construction**

Before an aqueous waste can be accepted at LERF and ETF, the waste characterization data shall be evaluated to ensure the waste compatible with the ETF materials of construction as to not compromise the integrity of the system.

## **9.0 Treatability**

The LWPF Engineering Group shall review the aqueous waste characterization data to determine if the ETF can treat the waste to below the discharge limits (in State Waste Discharge Permit ST4500) without compromising the integrity of ETF. If applicable, the treated aqueous waste must also meet the Delisting levels (40 CFR 261, Appendix IX, Table 2).

## **10.0 Pretreatment Requirements**

The LWPF Engineering Group shall review the aqueous waste characterization data to determine if pretreatment (e.g., filtration) of the aqueous waste is required before it can be accepted at LERF and ETF. At a minimum, all generators are required to filter their aqueous waste through a 20-30 micron (nominal) filter before receipt at LERF and/or ETF.

## **11.0 Non-Radioactive and Radionuclide Air Emissions**

### **11.1 Non-Radioactive Air Emissions**

Before an aqueous waste can be accepted at LERF and ETF, the waste characterization data shall be compared against the LERF/ETF non-radioactive air emissions Notice of Construction (NOC) Approval Order, No. 96NW-1-301, to ensure compliance.

If a toxic air pollutant, listed in Washington Administrative Code (WAC) 173-303-460, is identified in the aqueous waste, the hourly and annual airborne emission rates of the pollutant shall be calculated and compared to the Small Quantity Emission (SQE) rates in the WAC. If the SQE rates are exceeded, the stack emission concentrations shall be calculated and compared to the Acceptable Source Impact Levels (ASILs) in the WAC.

#### 11.2 Radioactive Air Emissions

Before an aqueous waste can be accepted at LERF and ETF, the curie content of each radionuclide in the waste shall be added to the existing annual radionuclide curie throughput at LERF (or ETF, for waste going directly to ETF). The results are compared to the source term given in radioactive air emissions NOC RTAM 1/14/97.

#### 12.0 Hanford Facility Dangerous Waste Permit

Before a dangerous waste or mixed waste can be accepted at LERF and ETF, the waste codes on the Waste Profile Sheet must be checked against the list of acceptable waste codes in the Part A, Form 3 Permit in Chapter 1 of DOE/RL-97-03, *Hanford Facility Dangerous Waste Permit Application, LERF and ETF*. The aqueous waste must also be compliant with other requirements in DOE/RL-97-03.

#### 13.0 Land Disposal Restrictions Requirements

If the dangerous waste or mixed waste contains one or more constituents that are above their LDR treatment standards in 40 Code of Federal Regulations 268.40, the LWPF Operations Manager and Environmental Compliance Officer (ECO) must be notified that an LDR waste would be received.

LDR waste that is received at LERF shall be removed within one year. Upon receipt of the LDR waste at LERF, Operations must notify the LWPF Engineering Manager, or designee, and the ECO that the LDR annual cleanout clock has started. This notification requirement does not apply to waste transferred directly into ETF.

Reference: R.J. Julian, Ecology, to T.K. Teynor, RL, et. al., "The Washington State Department of Ecology (Ecology) Regulatory Interpretation of the Liquid Effluent Retention Facility (LERF) Land Disposal Restriction Exemption," dated September 9, 1996.

#### **14.0 State Waste Discharge Permit No. ST 4500**

Before an aqueous waste can be accepted at LERF and ETF, it must be in compliance with the influent criteria in State Waste Discharge Permit No. ST 4500. Constituents in the aqueous waste must be compared to a master list of approved influent constituents maintained in the LWPF Records Control Center. If the aqueous waste contains a new constituent of concern, or the concentration of an existing constituent is 20% greater than the concentration on the master list, a characterization study must be submitted to Ecology, who approves receipt of the new and elevated constituents.

#### **15.0 Notification to Aqueous Waste Generator**

The LWPF Facility Manager, or designee, will transmit a written or electronic message to the generator stating whether LWPF will accept or reject the aqueous waste.

#### **16.0 Generated Solid Waste**

Before an aqueous waste is accepted into LERF and ETF, a preliminary characterization must be made of the powder that will be generated when the aqueous waste is treated. Process knowledge is used, where possible, to

- Determine if the powder waste will be a RCRA waste.
- Determine if the powder waste will contain LDR constituents.
- If the waste is to be shipped to ERDF, determine if the powder waste meet ERDF acceptance criteria.

If process knowledge cannot provide adequate information to make these determinations, sampling of the concentrate tanks or the powder waste shall be needed.

#### **17.0 Discharge to LERF Basin**

The aqueous wastes transferred to LERF or ETF are segregated by their regulatory designations and characteristics. Based on the Waste Profile Sheet and characterization data, the LWPF Engineering Group will decide which LERF Basin will receive the waste. If the waste is transferred directly to ETF, the LWPF Engineering Group will determine when the waste can be transferred into the ETF process.

#### **18.0 Notification to LWPF Operations**

LWPF Operations will be notified that the aqueous waste had been accepted and the generator's tentative shipping date.