

START

9513321.0884

0039717

16

MANUAL REVISION INSTRUCTIONS (MRI)Date Prepared:
September 28, 1994

TO: Debra A ISOM

Document No.: WHC-CM-7-7 Level: 3

Title: Environmental Investigations and Site Characterization

Release No.: 88 Page 1 of 1

INSTRUCTIONS

1. Remove and/or insert indicated sections into manual as shown below.
2. Update the Revision Record at the front of the manual.
3. Route a copy of the implementation notice to all users of this copy of the manual.
4. Sign this form and return it to Unclassified Document Control.

Section Numbers and Titles	Remove			Insert		
	Pages	REV	Date	Pages	REV	Date
Table of Contents	1 - 6	87	06/27/94	1 - 6	88	10/17/94
EII 10.3, Purgewater Management	1 - 7	3	04/04/94	1 - 6	4	10/17/94

If you have any questions about this release contact:

Jean Feaster, 372-2340



Approved for Distribution: <u>KSA</u> UDC Initials	<u>9/29/94</u> Date	I have entered this release into the manual per the above instructions. <u>[Signature]</u> Signature	<u>1/09/95</u> Date
--	------------------------	--	------------------------

Please sign, FOLD down to the dotted line, and return within 7 days of receipt.

RETURN TO: Unclassified Document Control MSIN: A4-18 (509) 376-6831
Westinghouse Hanford Company, P.O. Box 1970, Richland, WA 99352

A-6400-253.1 (06/92) GEF038

PLEASE DO NOT STAPLE OR TAPE**A4-18**

START

THIS PAGE INTENTIONALLY
LEFT BLANK



IMPLEMENTATION NOTICE

WHC-CM-7-7, *Environmental Investigations and Site Characterization Manual*
Release No. 88, Effective October 17, 1994

Section: EII 10.3, Purgewater Management, Rev 4

Change Summary:

The procedure was revised to:

- Meet current operating practices, correct organizational interfaces/titles/activities.
- Remove definitions section (definitions are located in the Glossary).
- Update references.
- Add designated reviewers section.
- Add records table.

Impact:

Revised procedure should accurately reflect and describe working practices and organizational/company interfaces.

**THIS PAGE INTENTIONALLY
LEFT BLANK**

**ENVIRONMENTAL INVESTIGATIONS AND
SITE CHARACTERIZATION MANUAL**

**Manual
Release
Page
Effective Date**

**WHC-CM-7-7
88
1 of 6
October 17, 1994**

TABLE OF CONTENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REV</u>	<u>EFFECTIVE DATE</u>
N/A	Introduction	2	06/27/94
N/A	Quality Assurance Records	0	03/15/93
	PAGE CHANGE 1 (p. 4)		04/05/93
	PAGE CHANGE 2 (pp. 4, 5, 6)		04/19/93
	PAGE CHANGE 3 (pp. 4, 6)		05/24/93
	PAGE CHANGE 4 (pp. 3, 4)		09/07/93
1.0 GENERAL ADMINISTRATIVE REQUIREMENTS			
EII 1.1	Hazardous Waste Site Entry Requirements	3	05/24/93
EII 1.2	Preparation and Revision of Environmental Investigations Instructions	7	12/01/93
	PAGE CHANGE 1 (p. 6)		01/31/94
EII 1.3	Preparation and Control of Desk Instructions (No technical impact)	0	CANCELED 08/15/89
EII 1.4	Instruction Change Authorizations	7	02/28/94
EII 1.5	Field Logbooks	5	06/27/94
EII 1.6	Record Processing	4	11/12/93
EII 1.7	Indoctrination, Training and Qualification	4	02/28/94
EII 1.8	Controlled Notebooks (EII 1.5)		NEVER ISSUED
EII 1.9	Primary and Secondary Document Review and Control	2	10/19/92
EII 1.10	Identifying, Evaluating and Documenting Suspect Waste Sites	3	12/22/93
EII 1.11	Technical Data Management (Being revised for reissue)	0	CANCELED 02/14/92
EII 1.12	Performance Audit	1	09/20/93
EII 1.13	Environmental Readiness Review	2	12/29/93
	PAGE CHANGE 1 (p. 3)		04/04/94
	PAGE CHANGE 2 (p. 3)		04/13/94

TABLE OF CONTENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REV</u>	<u>EFFECTIVE DATE</u>
EII 1.14	Preparation of Descriptions of Work PAGE CHANGE 1 (p.2)	0	08/10/92 09/20/93
EII 1.15	Preparation of SOW/LOI	1	01/31/94
EII 1.16	Guidance for evaluating Unreviewed Safety Questions for Environmental Restoration and Decontamination and Decommissioning Activities	0	05/04/94
2.0 HEALTH AND SAFETY			
EII 2.1	Preparation of Site-Specific Health and Safety Plans PAGE CHANGE 1 (p. 2) PAGE CHANGE 2 (pp. 3, 4) PAGE CHANGE 3 (p. 3)	4	04/19/93 06/24/93 09/07/93 09/20/93
EII 2.2	Occupational Health Monitoring	4	03/15/93
EII 2.3	Administration of Radiation Surveys to Support Environmental Characterization Work on the Hanford Site (Refer to EII 1.15 and WHC-CM-4-10)	0	CANCELED 12/31/92
3.0 FIELD CHARACTERIZATION			
EII 3.1	User Calibration of Health and Safety M&TE (Combined with EII 3.2)	1	CANCELED 06/29/90
EII 3.2	Calibration and Control of Monitoring Instruments PAGE CHANGE 1 (p. 5)	4	5/24/93 01/31/94
EII 3.3	Calibration Coordination (No technical impact)		NEVER ISSUED
EII 3.4	Field Screening	0	CANCELED 01/31/94
EII 3.5	Cone Penetrometer	0	01/31/94
4.0 WASTE MANAGEMENT			
EII 4.1	Nonradioactive Hazardous Waste Disposal (Controlled by WHC-CM-5-16)	1	CANCELED 05/25/90

**ENVIRONMENTAL INVESTIGATIONS AND
SITE CHARACTERIZATION MANUAL**
**Manual
Release
Page
Effective Date**
**WHC-CM-7-7
88
3 of 6
October 17, 1994**
TABLE OF CONTENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REV</u>	<u>EFFECTIVE DATE</u>
EII 4.2	Interim Control of Unknown, Suspected Hazardous and Mixed, and Radioactive Waste PAGE CHANGE 1 (p. 7) ICA 076 (T)	4	01/25/93 10/18/93 10/18/93
EII 4.3	Control of CERCLA and Other Past-Practice Investigation Derived Waste PAGE CHANGE 1 (p. 26) PAGE CHANGE 2 (p. 17)	2	06/24/93 10/18/93 01/31/94
EII 4.4	Control and Storage of Radioactive Materials and Equipment	1	02/28/94
5.0 FIELD SAMPLING			
EII 5.1	Chain of Custody	6	06/27/94
EII 5.2	Soil and Sediment Sampling PAGE CHANGE 1 (pp. 2, 4) PAGE CHANGE 2 (pp. 6, 21)	5	11/12/93 01/31/94 06/27/94
EII 5.3	Biotic Surveying and Sampling PAGE CHANGE 1 (p. 2)	2	10/18/93 05/04/94
EII 5.4	Field Cleaning and/or Decon- tamination of Equipment PAGE CHANGE 1 (pp. 2, 3) ICA 073 (T) ICA 089 (T)	5	04/05/93 05/24/93 06/25/93 02/08/94
EII 5.5	1706 KE Laboratory Decontamination of RCRA/CERCLA Sampling Equipment	3	02/28/94
EII 5.6	Control of Geophysical Logging (Revised and moved to EII 11.1)	1	CANCELED 07/06/90
EII 5.7A	Hanford Geotechnical Sample Library Control	4	01/31/94
EII 5.8	Groundwater Sampling PAGE CHANGE 1 (pp. 2, 7) PAGE CHANGE 2 (pp. 14, 16) PAGE CHANGE 3 (pp. 3, 8, 9, 11) PAGE CHANGE 4 (p. 15) PAGE CHANGE 5 (p. 15) ICA 074 (T) PAGE CHANGE 6 (pp. 2, 4, 5, 6)	3	03/30/92 05/08/92 07/07/92 10/08/92 12/14/92 04/05/93 08/11/93 01/31/94

TABLE OF CONTENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REV</u>	<u>EFFECTIVE DATE</u>
EII 5.9	Soil-Gas Sampling	1	05/04/94
EII 5.10	Obtaining Sample Identification Numbers and Accessing HEIS Data	0	12/20/91
EII 5.11	Sample Packaging and Shipping PAGE CHANGE 1 (p. 3,6) PAGE CHANGE 2 (pp. 3, 7)	3	12/14/92 04/05/93 01/31/94
EII 5.12	Air Quality Sampling of Ambient and Downwind Air at Waste Sites (Controlled by HEHF)	0	CANCELED 04/08/91
EII 5.13	Drum Sampling (WHC-CM-4-3, Vol 4, HWO-1 App. J/EII 4.2/EII 4.3)	0	CANCELED 01/25/93
EII 5.14	Drum Handling (WHC-CM-4-3, Vol 4, HWO-1 App. J/EII 4.2/EII 4.3)	0	CANCELED 01/25/93
6.0 DRILLING			
EII 6.1	Activity Reports of Field Operations (Fars moved to EIIs 6.4/6.7/8.3)	2	CANCELED 04/19/93
EII 6.2	Groundwater Monitoring Wells Technical Oversight (Combined with EII 6.7/6.8)	2	CANCELED 06/05/90
EII 6.3	Preparation of Groundwater Monitoring Well Construction Specifications (Controlled by WHC-CM-6-1)	0	CANCELED 02/26/90
EII 6.4	Well Services Support	3	06/27/94
EII 6.5	Plugging and Abandoning of Characterization Boreholes (Combined with EII 6.7)	0	CANCELED 03/29/91
EII 6.6	Resource Protection Well Characterization and Evaluation PAGE CHANGE 1 (p. 4) PAGE CHANGE 2 (p. 1)	2	11/12/93 04/04/94 06/27/94
EII 6.7	Documentation of Well Drilling and Completion Operations ICA 089 (T) PAGE CHANGE 1 (p. 2) PAGE CHANGE 2 (p. 7)	4	12/01/93 02/08/94 04/04/94 06/27/94

**ENVIRONMENTAL INVESTIGATIONS AND
SITE CHARACTERIZATION MANUAL**
**Manual
Release
Page
Effective Date**
**WHC-CM-7-7
88
5 of 6
October 17, 1994**
TABLE OF CONTENTS

NUMBER	TITLE	REV	EFFECTIVE DATE
EII 6.8	Well Completion (Combined with EII 6.7)	1	CANCELED 04/19/93
EII 6.9	Groundwater Well and Borehole Identification and Tracking (No technical impact)	0	06/27/94
EII 6.10	Decommissioning Wells PAGE CHANGE 1 (p. 5) PAGE CHANGE 2 (p. 5)	2	11/12/93 12/01/93 04/04/94
7.0 RESERVED			
EII 7.1	Pest Control Administration and Operation (Not related to field operations)	1	CANCELED 07/22/92
8.0 RECLAMATION			
EII 8.1	Borehole/Site Reclamation and Verification (Controlled by WHC-CM-5-38)	1	CANCELED 08/15/89
EII 8.2	Borehole/Site Reclamation Activity Reports (Controlled by WHC-CM-5-38)	1	CANCELED 08/15/89
EII 8.3	Remediation of Groundwater Wells	2	06/27/94
9.0 GEOLOGY			
EII 9.1	Geologic Logging PAGE CHANGE 1 (p. 9) ICA 090 (T)	3	03/15/93 05/24/93 02/07/97
10.0 HYDROLOGY			
EII 10.1	Aquifer Testing	5	06/27/94
EII 10.2	Measurement of Groundwater Levels PAGE CHANGE 1 (p. 10)	3	05/04/94 06/27/94
EII 10.3	Purgewater Management	4	10/17/94
EII 10.4	Well Development Activities	2	02/16/93

TABLE OF CONTENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REV</u>	<u>EFFECTIVE DATE</u>
11.0 GEOPHYSICS			
EII 11.1	Geophysical Logging ICA 066 (T) ICA 071 (T)	3	06/27/94 04/12/93 05/26/93
EII 11.2	Geophysical Survey Work	4	06/27/94
12.0 RESERVED			
13.0 RESERVED			
14.0 DATA MANAGEMENT			
EII 14.1	Analytical Laboratory Data Management ICA 056 (T) PAGE CHANGE 2 (pp. 3, 5)	0	11/25/91 06/05/92 12/14/92
N/A	Glossary/Acronyms PAGE CHANGE 1 (pp. 9, 18, 19, 20)	4	02/28/94 06/27/94

ICA = INSTRUCTION CHANGE AUTHORIZATION
(P) = PERMANENT (BLUE SHEET)
(T) = ONE TIME (GOLDENROD SHEET)

WESTINGHOUSE HANFORD COMPANY

Manual
Section
Page

WHC-CM-7-7
EII 10.3, REV 4*
1 of 6

ENVIRONMENTAL INVESTIGATIONS AND
SITE CHARACTERIZATION MANUAL

Effective Date
Organization

October 17, 1994
WAE/HTS

Approved by

PURGEWATER MANAGEMENT

J.W. Cammann 9/23/94
J. W. Cammann, Manager
Earth and Environmental
Technical Services

1.0 PURPOSE

The purpose of this environmental investigations instruction (EII) is to implement the requirements established in the "Strategy for Handling and Disposing of Purgewater at the Hanford Site, Washington" (Strategy Document) and procedures found in Westinghouse Hanford Company (WHC) manuals.

2.0 SCOPE

This EII applies to the management of purgewater that is generated from the development, remediation, maintenance, aquifer testing, and sampling of the Hanford Site groundwater monitoring wells collected by WHC or contractors performing work for WHC. The application covers activities from the time of purgewater generation to its disposal in either a storage facility or the soil column.

3.0 DEFINITIONS

See the Glossary/Acronym section in this manual.

4.0 REQUIREMENTS

4.1 Safety

1. Personnel performing the varied activities in regard to purgewater collection, handling, transportation, and storage shall comply with the specific site safety requirements.
2. Purgewater containment vehicles operated in radiological areas and that have fixed contamination within the cargo area exceeding the values of Table 2-3 in WHC-CM-1-6, Chapter 2, shall have "Regulated" placards permanently affixed to the front, back, and both sides of the vehicles.
3. General Precautions for handling of all purgewater.
 - a) Do not drink purgewater.

* This is a total rewrite; therefore, no revision bars are used to indicate changes.

PURGEWATER MANAGEMENT

- b) Purgewater spilled directly or indirectly on the skin, will in general, not be an immediate health hazard. However, if purgewater comes in contact with the skin, notify the local Health Physics (HP) Technician and request a survey.
- c) Wear rubber gloves while handling hoses or other equipment when loading and unloading tank trucks.
- d) If purgewater splashes in the eyes or is swallowed accidentally, report to the nearest first aid station and HP office for examination and treatment.

4.2 Purgewater Spill

1. WHC employees shall immediately report any accidental spill of purgewater, exceeding 113 liters (30 gal.), to their management.
2. Management shall implement response actions, investigate and categorize the event per WHC-CM-1-5, Section 7.1.

NOTE: When investigating and categorizing a purgewater spill, consideration should be given to Para. 3.6.2 of the Strategy Document which states that purgewater management at Hanford is not subject to the groundwater listed waste designation procedures as set forth in WAC Chapter 173-303.

4.3 Training

1. Support personnel shall receive training as mandated by WHC-CM-7-7, EII 1.1, "Hazardous Waste Site Entry Requirements".
2. Newly hired purgewater truck drivers shall receive a documented briefing on this procedure which shall include a hazardous material orientation for purgewater transportation.

4.4 Purgewater Collection

1. Purgewater from WHC monitored wells shall be appropriately managed in accordance with health and environmental-based purgewater collection criteria factored into the "Purgewater Strategy Implementation List" ("No Dump" list) of wells.
2. Purgewater extracted from wells not listed, or listed as "Contain Purge Water", in Item 1 above, shall be collected and stored unless a documented purgewater determination has been performed to provide evidence that existing contaminants are found in quantities less than the collection criteria.
3. Purgewater containing constituents in concentrations lower than the collection criteria can be discharged to the soil at or in the immediate vicinity [approximately 15 meters (50 ft.)] of the well head when such wells do not monitor;

**ENVIRONMENTAL INVESTIGATIONS AND
SITE CHARACTERIZATION MANUAL****Manual
Section
Page
Effective Date****WHC-CM-7-7
EII 10.3, REV 4*
3 of 6
October 17, 1994**

PURGEWATER MANAGEMENT

- a. designated RCRA Solid Waste Management Units (SWMUs),
- b. burial grounds,
- c. active/inactive liquid effluent disposal sites,
- d. known surface or subsurface soil contamination areas.

Purgewater from wells in the areas cited above shall be contained.

4. Purgewater required to be contained shall be stored in the 600 Area Purgewater Storage and Treatment Facility (storage facility).

5.0 INTERFACES**5.1 Westinghouse Hanford Company (WHC)**

1. Generates purgewater from sampling groundwater monitoring wells, well development, aquifer testing, well maintenance and remediation.
2. Provides analytical data input from purgewater collection determinations per WHC-CM-7-8, Vol. 4, Section 6.1, "Purgewater Collection Determination".
3. Manages the purgewater storage facility for receipt of purgewater generated by all site contractors in accordance with Tank Farm Plant Operating Procedure (POP), TO-040-010, "Perform Operations/ Surveillance - Purgewater Storage Facility".

5.2 ICF Kaiser Hanford

1. Provides WHC, its contractors, and contractors supporting WHC work, with purgewater collection and transportation services from the well site to the storage facility.

5.3 Pacific Northwest Laboratories (PNL)

1. Generates purgewater from sampling groundwater monitoring wells, well development, aquifer testing, well maintenance and remediation.
2. Provides controlled distribution of the "Purgewater Strategy Implementation List" ("No Dump" list). Persons with questions regarding the "No Dump" list may call 372-0069.
3. Utilizes analytical data to revise the "No Dump" list.

5.4 Bechtel Hanford Incorporated (BHI)

1. Generates purgewater from sampling groundwater monitoring wells, well development, and aquifer testing, as described in the Environmental Restoration Contract (ERC).
2. Maintains and updates the Purge Water Activities Database.

6.0 PROCEDURE

6.1 Planning

Site Management shall:

1. Use the "No Dump" list to determine if purgewater from the assigned groundwater well activity is to be contained.
 - If the well number is listed and is designated for containment, an update of the containment determination, may be requested from WHC, Earth & Environmental Technical Services.
 - If the well number is not listed, request a purgewater containment determination from WHC, Earth & Environmental Technical Services.

The designated person-in-charge at the site shall:

2. Use the safest (ALARA) feasible method for collecting and transferring purgewater to the tank truck.
3. Examine pumps, hoses, buckets, couplings, and other equipment to assure that leaks and spills of purgewater will be avoided when transferred to the tank truck.
4. Interface with ICF Kaiser Hanford, Transportation & Waste Handling, to schedule purgewater pick-up. Contact ICF Kaiser Hanford schedulers on 376-0971 for information.

Management/Supervision of purgewater truck drivers shall:

5. Arrange for orientation and training of the truck drivers in handling collected purgewater.

6.2 Purgewater Collection and Transport

The tank truck driver shall perform the following:

1. Park purgewater trucks and other vehicles downwind of groundwater sampling operations.
2. Transfer purgewater or raw water to the tank truck in a safe manner.
3. Record the volume (in liters or gallons, however, indicate which units are used) of purgewater or raw water collected on the Well Purgewater Transport Log (WPTL), BC-6000-453, and provide the total volume if numerous sites were visited prior to disposal.
4. Transport collected purgewater to the storage facility.
5. Notify East Tank Farms Operations (ETF0) two (2) hours prior to unloading collected purgewater at the storage facility. Call the

PURGEWATER MANAGEMENT

Shift Office on 373-1600, 373-2689, or radio station 22 and the Tank Farm Surveillance Office at 373-2929.

6. Provide the ETF0 operator, at the storage facility, with the original WPTL.

6.3 Disposal of Purgewater at the Storage Facility

The ETF0 operator provides operations and surveillance services per POP TO-040-010.

6.4 Records Handling and Purgewater Database Tracking

The ETF0 operator shall:

1. Verify the volume of all water (purgewater and raw water) inflow to the storage facility and document by signing and dating the WPTL.
2. Forward a copy of the WPTL to the Purge Water Activity Database operator.
3. Send the original of the WPTL to the ETF0 Project Files.

The database operator shall:

4. Update the database upon receipt of the WPTL.
5. Maintain an electronic backup of the database. Persons with questions regarding the database may call 376-8596.

Records shall be retained as described in the following table. Responsibility for retention is as follows:

Well Purge Water Transport Log
Purge Water Activity Database

WHC, ETF0
BHI

NAME Filing Unit Title or Description	RECORD TYPE*	RETENTION PERIOD	DISPOSAL AUTHORITY	CUT-OFF AND RETIREMENT INSTRUCTIONS
Purge Water Activity Database. Registration No. 11357.	R	TBD	TBD	Maintain as operational until no longer needed.
Well Purge Water Transport Log (BC-6000-453)	R	TBD	TBD	Transmit to File Custodian (FC) to retain in the Project File.

7.0 DESIGNATED REVIEWING ORGANIZATION

The organization designated to review changes to this document is listed below. Comments from other reviewers are welcome, but are resolved at the originating organization's option.

Designated Reviewing Organization

CMPOC

Earth and Environmental Technical Services,
author

HTS/E&ETS

8.0 FORM

Well Purge Water Transport Log (BC-6000-453, Jetform).

9.0 REFERENCES

WAC 173-303, "Dangerous Waste Regulations."

WHC-MR-0039, "Strategy for Handling and Disposing of Purgewater at the Hanford Site, Washington," July 1990.

WHC-CM-1-5, *Standard Operating Practices*, Section 7.1, "Reporting Occurrences and Processing Operations Information."

WHC-CM-1-6, *WHC Radiological Control Manual*, Chapter 2, "Radiological Standards."

WHC-CM-7-5, *Environmental Compliance*, Section 5.0, "Records, Reporting, and Response Activities."

WHC-CM-7-7, *Environmental Investigations and Site Characterization Manual*, EII 1.1, "Hazardous Waste Site Entry Requirements."

WHC-CM-7-8, *Environmental Engineering and Geotechnology Procedures*, Volume 4, Section 6.1, "Purgewater Collection Determination."

Tank Farm Plant Operating Procedure (POP), TO-040-010, "Perform Operations/Surveillance - Purgewater Storage Facility."