Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

FEB 01 2013

13-EMD-0019

Mr. E. R. Skinnarland
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Mr. Skinnarland:

PROPOSED CLASS 2 RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT MODIFICATIONS AND REQUEST FOR TEMPORARY AUTHORIZATION AT THE 183–H SOLAR EVAPORATION UNIT (TSD: T-1-4)

In accordance with Hanford Facility RCRA Permit Condition I.C.3, the US Department of Energy (DOE) hereby requests a Class 2 modification to the Hanford Facility Dangerous Waste Permit, Revision 8C, pursuant to Washington Administrative Code (WAC) 173-303-830(4)(b). In addition, DOE hereby requests a temporary authorization, pursuant to WAC 173-303-830(4)(e).

Enclosure 1 provides the Modification Notification Forms and a red line strike out of Chapter 3.0, "Groundwater Monitoring." The modification to Part VI groundwater monitoring permit requirements for the 183-H Solar Evaporation Basins are needed to accurately reflect which wells are used as extraction wells for the pump and treat system.

This letter also requests a temporary authorization under WAC 173-303-830(4)(e)(ii)(A)(I) to discontinue use of groundwater monitoring well 199-H4-3 and instead use well 199-H4-84 by February 15, 2013. This will ensure that there is no impact to on-going waste site remediation activities in the 100-H Area. DOE believes that temporary authorization is warranted to facilitate timely implementation of closure or corrective action activities, pursuant to WAC 173-303-830(4)(e)(iii)(B)(I). Enclosure 2 contains the outline addressing how compliance will be maintained in accordance with WAC 173-303-830(4)(e)(ii)(B)(III).

The notice required by DOE in WAC 173-303-830(4)(b)(ii) will be included in the appropriate Hanford Federal Facility Agreement and Consent Order publication or list server, as described in Hanford Facility RCRA Permit Condition I.C.3. Additionally, DOE will place a notice in the Tri-City Herald. The public comment period will begin on the date the public

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notice appears in the Tri-City Herald and will remain open for 60 days. In addition, DOE will hold a public meeting. If Ecology finds the temporary authorization request adequate, please respond by approving the temporary authorization and Class 2 Modification Form.

If you have any questions, please contact me, or your staff may contact Ray J. Corey, Assistant Manager for Safety and Environment, on (509) 376-0108.

Sincerely,

Matt McCormick
Manager

EMD:ACM

Enclosures

cc w/encls:
Ecology NWP Library (Hardcopy)
Environmental Portal, LMSI, A3-95 (CD ROM)
Administrative Record, TSD: H-0-1, H-0-8, T-3-4, H6-08 (Hard Copy & CD ROM)
HF Operating Record (J. K. Perry, MSA, H7-28) (CD ROM)

cc w/o encls:
L. L. Fritz, MSA
J. A. Hedges, Ecology
A. L. Prignano, Ecology
J. R. Seaver, CHPRC

ENCLOSURE 1

Class 2 modification to the Hanford Facility Dangerous Waste Permit, Revision 8C and a red line strike out of Chapter 3.0, Groundwater Monitoring for the 183-H Solar Evaporation Unit pursuant to WAC 173-303-830(4)(b)

Consisting of 25 pages, includes cover page

Hanford Facility RCRA Permit Modification Notification Forms

Part VI, Closure Unit 2
183-H Solar Evaporation Basins

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Page 5 of 7	Chapter 3.0, Figure 3.2
Page 6 of 7	Chapter 3.0, Table 3.1
Page 7 of 7	Chapter 3.0, Table 3.3

Reviewed by RL Program Office:

_____ _____

Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
183-H Solar Evaporation Basins	**Part VI, Post Closure Unit 2**

Description of Modification:
Hanford Facility RCRA Permit VI.2:

PART VI, POST-CLOSURE UNIT 2 UNIT-SPECIFIC CONDITIONS
183-H Solar Evaporation Basins

The 183-H Solar Evaporation Basins comprise an inactive TSD unit that is undergoing postclosure activities. This TSD unit was operated as an evaporation treatment unit for dangerous wastes.

VI.2.A. COMPLIANCE WITH APPROVED MODIFIED CLOSURE PLAN

The Permittees shall comply with all requirements set forth in Post-Closure Unit 2, including Permit Conditions specified in VI.2.B. All sections, figures, and tables included in these portions are enforceable:

POST-CLSOURE UNIT 2:

Chapter 1.0	Part A Form, dated October 1, 2008
Chapter 2.0	Modified Post-Closure Institutional Controls and Periodic Assessments, dated June 30, 2002
Chapter 3.0	Groundwater Monitoring, dated ~~June 30, 2008~~TBD
Chapter 4.0	Corrective Action Plan, dated June 30, 2002
Chapter 5.0	Personnel Training, dated June 30, 2002
Chapter 6.0	Security, dated February 2004
Chapter 7.0	Closure Contact, dated February 2004
Chapter 8.0	Certification of Post-Closure, dated June 30, 2002

VI.2.B. AMENDMENTS TO THE APPROVED POST-CLOSURE PLAN

VI.2.B.1. The Permittee will review the modified closure option in five (5) years (February 28, 2008). The purpose of the review will be to determine if this TSD unit can be clean closed.

WAC 173-303-830 Modification Class [1,2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and informational changes.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: N. Menard Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
183-H Solar Evaporation Basins	**Part VI, Post Closure Unit 2**

Description of Modification:
Chapter 3.0, Section 3.2:

3.2 RCRA CORRECTIVE ACTION GROUNDWATER MONITORING SCHEDULE

.....The RCRA sampling and analysis schedule includes a network of four wells sampled annually. The wells are ~~199-H4-3,~~ 199-H4-8, 199-H4-12A, ~~and~~ 199-H4-12C, and 199-H4-84 (Figure 3.1). (Wells ~~199-H4-8 and~~ 199-H4-~~12A~~12C is ~~are~~ also used as an extraction wells for the pump-and-treat system.) ~~(Wells 199-H4-8 and 199-H4-12A are also used as extraction wells for the pump-and-treat system.)~~ Water samples will be analyzed for the constituents of concern previously identified for tracking contamination attributable to the 183-H Solar Evaporation Basins (nitrate, fluoride, chromium, uranium, and technetium-99). Additional analyses will be performed for alkalinity, other anions, and other metals, to aid in interpreting results. Field parameters (pH, temperature, specific conductance, and turbidity) will also be measured.....

WAC 173-303-830 Modification Class [1,2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:			X	

Enter relevant WAC 173-303-830, Appendix I Modification citation number: C.1.a
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in the number, location, depth, or design of upgradient or downgradient wells of permitted groundwater monitoring system. Removal of well 199-H4-3 from the RCRA groundwater monitoring network and replacement with 199-H4-84 reflects changes made during 2011 remedial investigation activities. Well 199-H4-3 needs to be decommissioned, because it interferes with the 100H Area waste sites excavation footprint. Well 199-H4-84 is closer to the waste site and should better represent groundwater conditions. The CERCLA pump & treat system is connected to 199-H4-12C, not 199-H4-12A. Well 199-H4-12A is completed in the unconfined aquifer, where hexavalent chromium concentrations are low. Well 199-H4-12C is completed in the confined aquifer within Ringold Upper Mud unit, where hexavalent chromium concentrations were found to be above 100 ppb.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology:
	N. Menard — Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
183-H Solar Evaporation Basins	**Part VI, Post Closure Unit 2**

Description of Modification:
Chapter 3.0, Figure 3.1:

Figure 3.1. Location Map for 100-H Area Monitoring Wells

Changes to this figure have been made to maintain consistency with Section 3.2

WAC 173-303-830 Modification Class [1,2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:			X	

Enter relevant WAC 173-303-830, Appendix I Modification citation number: C.1.a
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in the number, location, depth, or design of upgradient or downgradient wells of permitted groundwater monitoring system. Removal of well 199-H4-3 from the RCRA groundwater monitoring network and replacement with 199-H4-84 reflects changes made during 2011 remedial investigation activities. Well 199-H4-3 needs to be decommissioned, because it interferes with the 100H Area waste sites excavation footprint. Well 199-H4-84 is closer to the waste site and should better represent groundwater conditions. The CERCLA pump & treat system is connected to 199-H4-12C, not 199-H4-12A. Well 199-H4-12A is completed in the unconfined aquifer, where hexavalent chromium concentrations are low. Well 199-H4-12C is completed in the confined aquifer within Ringold Upper Mud unit, where hexavalent chromium concentrations were found to be above 100 ppb. Well H4-7 is being removed from the figure to reflect its scheduled decommissioning from the CERCLA interim action network to support vadose zone remediation activities in the 100-H Area. The figure is also being updated to current DOE and CHPRC cartographic standards (river arrows, color changes, legend changes, etc.). Changes to the figure reflect the operation of the new HX pump and treat system and revisions to the CERCLA and RCRA monitoring networks.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: N. Menard Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
183-H Solar Evaporation Basins	**Part VI, Post Closure Unit 2**

Description of Modification:
Chapter 3.0, Figure 3.2:

Figure 3.2. Location Map for 100-H Area Monitoring Wells

Changes to this figure have been made to maintain consistency with Section 3.2

WAC 173-303-830 Modification Class [1,2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:			X	

Enter relevant WAC 173-303-830, Appendix I Modification citation number: C.1.a
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in the number, location, depth, or design of upgradient or downgradient wells of permitted groundwater monitoring system. Removal of well 199-H4-3 from the RCRA groundwater monitoring network and replacement with 199-H4-84 reflects changes made during 2011 remedial investigation activities. Well 199-H4-3 needs to be decommissioned, because it interferes with the 100H Area waste sites excavation footprint. Well 199-H4-84 is closer to the waste site and should better represent groundwater conditions. The CERCLA pump & treat system is connected to 199-H4-12C, not 199-H4-12A. Well 199-H4-12A is completed in the unconfined aquifer, where hexavalent chromium concentrations are low. Well 199-H4-12C is completed in the confined aquifer within Ringold Upper Mud unit, where hexavalent chromium concentrations were found to be above 100 ppb. Well H4-7 is being removed from the figure to reflect its scheduled decommissioning from the CERCLA interim action network to support vadose zone remediation activities in the 100-H Area. The figure is also being updated to current DOE and CHPRC cartographic standards (river arrows, color changes, legend changes, etc.). Changes to the figure reflect the operation of the new HX pump and treat system and revisions to the CERCLA and RCRA monitoring networks.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
183-H Solar Evaporation Basins	**Part VI, Post Closure Unit 2**

Description of Modification:
Chapter 3.0, Table 3.1:

Table 0.1. Sampling and Analysis Schedule for 183-H Solar Evaporation Basins RCRA Corrective Action & CERCLA Remedial Investigation Monitoring

Well/Location Identifier	Facility Monitored/Purpose	RCRA:		CERCLA Remediation Activities:		
		183-H: Compliance (Pre-IRM[1])	183-H: Corrective Action [2]	RI/FS[3] Round 11: FY 97	Outlook[3] Round 12: FY 98	IRM Monitor Plan[4]
199-H3-1	Reactor building				BA(98)-2	
199-H3-2A	D-plume migration/ IRM extraction well	SA-1		A-2	A-2	SA-3 Q-Cr
199-H3-2C (deep conditions)	D-plume migration/ vertical distribution				BA(98)-2	
199-H4-3	183-H basins/IRM performance	SA-1	A-1	BA(97)-2		SA-Cr
199-H4-844	183-H basins/IRM compliance	SA-1		A-2	A-2	M-Cr
Cont'd.....						

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:			X	

Enter relevant WAC 173-303-830, Appendix I Modification citation number: C.1.a
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in the number, location, depth, or design of upgradient or downgradient wells of permitted groundwater monitoring system. Removal of well 199-H4-3 from the RCRA groundwater monitoring network and replacement with 199-H4-84 reflects changes made during 2011 remedial investigation activities. Well 199-H4-3 needs to be decommissioned, because it interferes with the 100H Area waste sites excavation footprint. Well 199-H4-84 is closer to the waste site and should better represent groundwater conditions. Changes are made to this figure needed to maintain consistency with Section 3.2.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology:
	N. Menard Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
183-H Solar Evaporation Basins	**Part VI, Post Closure Unit 2**

Description of Modification:
Chapter 3.0, Table 3.3:

Table 0.2. CERCLA Interim Remedial Measure Groundwater Well Network:

Well Number	Intended Use	Operations Period-- July 1997 to end of IRM:			
		Hourly Water Levels[1]	Steel Tape Measure[2]	Hexavalent Chromium[3]	Co-contaminants[4]
199-H3-2A	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-8	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-11	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-12A	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-15A	Extraction well	Transducer	Monthly	Quarterly	Semiannual
~~199-H3-3~~	~~Injection well~~	~~Transducer~~	~~Monthly~~		
199-H3-4	Injection well	Transducer	Monthly		
199-H3-5	Injection well	Transducer	Monthly		
Cont'd.....					

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:			X	

Enter relevant WAC 173-303-830, Appendix I Modification citation number: C.1.a
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in the number, location, depth, or design of upgradient or downgradient wells of permitted groundwater monitoring system. Removal of well 199-H4-3 from the RCRA groundwater monitoring network and replacement with 199-H4-84 reflects changes made during 2011 remedial investigation activities. Well 199-H4-3 needs to be decommissioned, because it interferes with the 100H Area waste sites excavation footprint. Well 199-H4-84 is closer to the waste site and should better represent groundwater conditions. Changes are made to this figure needed to maintain consistency with Section 3.2.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology:
	N. Menard Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class 1, if appropriate.

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class [1], if appropriate.

Remove and Replace the Following Sections:

Remove Part IV, Post-Closure Unit 2 Unit-Specific Conditions, dated October 1, 2008, and replace with Unit-Specific Conditions dated TBD.

Remove Chapter 3.0, dated June 30, 2008, and replace with Chapter 3.0 dated TBD.

Chapter 3.0 Groundwater Monitoring

3.0 GROUNDWATER MONITORING DURING POSTCLOSURE 3.3

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3.1.1 WAC 173-303-645(3) Groundwater Protection Standard 3.4
3.1.2 WAC 173-303-645(8) General Groundwater Monitoring Requirements 3.5

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3.0 GROUNDWATER MONITORING DURING POSTCLOSURE

Groundwater concentration limits have been exceeded for dangerous waste constituents in downgradient monitoring wells at 183-H Solar Evaporation Basins. WAC 173-303-645(11) requires that a corrective action program be established in the Permit to (1) address the contamination, and (2) monitor the effectiveness of the action (Rasmussen 1996c). This post-closure plan, along with a revised groundwater monitoring plan (Hartman 1997), describes current and future actions to satisfy this requirement.

Corrective action to address groundwater contamination in the 100-H Area, including contamination that has resulted from 183-H Solar Evaporation Basins, has been initiated as part of CERCLA remediation activities. An IRM to remove hexavalent chromium will begin extracting groundwater from wells located in the vicinity of the former 183-H in July 1997 (DOE-RL 1996b). The IRM pumping system will change local hydraulic gradients and the direction of groundwater flow.

Not all of the dangerous waste constituents attributable to 183-H Solar Evaporation Basins are specifically targeted by the IRM treatment system. The primary treatment target is chromium. However, nitrate and two nondangerous waste constituents, technetium-99 and uranium, are also likely to be retained on the ion exchange columns, although hexavalent chromium will be preferentially retained. The IRM corrective action is the first phase of groundwater remediation in the 100-H Area, with subsequent phases to be determined by the feasibility study process under CERCLA. A final ROD will be established using information gained during the IRM for chromium.

Figure 3.1 shows the locations of existing groundwater monitoring wells in the 100-H Area. Figure 3.2 illustrates the changes to groundwater flow that are expected to occur during IRM pumping operations. In general, flow direction will change from an easterly to a more northerly direction beneath the former 183-H Solar Evaporation Basins. Changes in water quality, as observed in monitoring wells influenced by the pumping operation, are also expected to occur. Figure 3.3 provides a recent interpretation showing the distribution of chromium contamination in the 100-H Area.

Because of the corrective action pumping operations, the list of "point of compliance" wells per WAC 173-303-645 requirements will change from the definition presented in the 183-H compliance monitoring plan (Hartman and Chou 1995). Also, the change in flow direction may result in variable concentrations for the dangerous waste indicators in the wells previously identified as points of compliance. Therefore, a revised groundwater monitoring plan has been prepared (Hartman 1997) that reflects corrective action monitoring requirements.

The following sections outline the requirements for groundwater monitoring during corrective action and present a sampling and analysis schedule for meeting the requirements. The sampling and analysis schedule for RCRA corrective action requirements becomes a condition of the revised Permit. Other sampling and analysis activities within the 100-H Area are also described for general information purposes only.

3.1 WAC 173-303-645(11)(D) MONITORING REQUIREMENTS

The WAC 173-303-645(11) Corrective Action Program requires the establishment and implementation of a groundwater monitoring program that is capable of demonstrating the effectiveness of the corrective action. This requirement states two general objectives:

- The program may be based on the requirements for a compliance monitoring program under WAC 173-303-645(10) and must be as effective as that program in determining compliance with the groundwater protection standard under WAC 173-303-645(3). A compliance monitoring program that met the objectives of the groundwater protection standard was established and adopted within the Permit (Hartman and Chou 1995).

- Monitoring during corrective actions must be capable of determining the success of the corrective action program. A revised groundwater monitoring plan has been prepared to reflect corrective action requirements (Hartman 1997). Also, as part of the IRM to address chromium contamination, a performance monitoring program has been designed and implemented to evaluate the effectiveness of the pump-and-treat system (DOE-RL 1997).

The following sections demonstrate how the corrective action monitoring requirements in WAC 173-303-645(11) will be met in the 183-H Corrective Action Groundwater Monitoring Plan and 183-H Post-Closure Plan.

3.1.1 WAC 173-303-645(3) Groundwater Protection Standard

Washington Administrative Code 173-303-645(3) introduces the principal requirements that must be met to comply with the Dangerous Waste Regulations for releases from regulated units. It refers to WAC 173-303-645(4) Dangerous Constituents, WAC 173-303-645(5) Concentration Limits, WAC 173-303-645(6) Point of Compliance, and WAC 173-303-645(7) Compliance Period. The Groundwater Protection Standard for the regulated unit has been established by Ecology in the facility Permit.

3.1.1.1 WAC 173-303-645(4) Dangerous Constituents

Dangerous waste constituents were identified in the 183-H Compliance Monitoring Plan (Hartman and Chou 1995). They are hexavalent chromium, as represented by an analysis for total chromium using filtered samples, and nitrate.

Additional waste indicators used to define the contaminant plume attributable to 183-H are technetium-99 and uranium. Wastes from 183-H basins' leakage may have altered various other water quality parameters that are not regulated, but are useful for identifying and tracking contamination from 183-H Solar Evaporation Basins (e.g., specific conductance). Because fluoride was discovered to be elevated in the soil at the bottom of the excavation beneath the 183-H footprint (along with nitrate), fluoride will also be used as an indicator for 183-H contamination in groundwater.

All of the above constituents of interest will be monitored under the revised plan for corrective action groundwater monitoring (Hartman 1997).

3.1.1.2 WAC 173-303-645(5) Concentration Limits

Dangerous waste constituents from the regulated waste unit may not exceed concentration limits established by the Permit. Permit limits were defined previously in the 183-H Compliance Monitoring Plan (Hartman and Chou 1995). Concentration limits established for the 183-H groundwater plume were as follows:

Dangerous Waste Constituents:	
Chromium (total; filtered sample)	122 µg/L--local background; upgradient sources
Nitrate	45,000 µg/L--EPA MCL for drinking water
Other 183-H Waste Indicators:	
Technetium-99	900 pCi/L--EPA MCL for drinking water
Uranium (total; chemical analysis)	20 µg/L--EPA MCL--proposed

During the period of time that the IRM to address chromium is extracting groundwater, the corrective action monitoring described in the revised groundwater monitoring plan (Hartman 1997) will continue to evaluate new analytical results relative to these concentration limits. Additionally, fluoride results will be evaluated relative to previously established trends and to the EPA MCL for drinking water, which is 1,400 µg/L.

3.1.1.3 WAC 173-303-645(6) Point of Compliance

"The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated unit." Operation of the IRM groundwater extraction network will alter the pattern of groundwater flow. Therefore, the relative positions (i.e.,. upgradient, downgradient) for some of the monitoring wells used to establish the point of compliance listed in the 183-H Compliance Monitoring plan (Hartman and Chou 1995) will change (Section 3.2).

A new list of wells has been defined to act as points of compliance while the IRM is operating. The new list was developed at a workshop held on March 5, 1997 using the EPA Data Quality Objectives process. The points of compliance identified at the workshop were subsequently approved by Ecology on April 22, 1997 via letter (Soper 1997b). The wells are identified in the revised groundwater monitoring plan for corrective action monitoring (Hartman 1997) (Section 3.2).

3.1.1.4 WAC 173-303-645(7) Compliance Period

The modified RCRA network and sampling schedule will be in effect during groundwater extraction operations that are conducted as part of the IRM for chromium. Based on the observed impact that the IRM has on groundwater flow patterns and water quality after operations begin, further modifications to the RCRA network may be appropriate during and following the IRM. This post-closure plan and the revised groundwater-monitoring plan for corrective action monitoring will be revised and incorporated into a permit modification, as necessary.

Following cessation of groundwater extraction operations under the IRM, RCRA monitoring under the final status monitoring plan (Hartman, 1997) will continue for a minimum of three consecutive years (WAC 173-303-645(7)(c) to demonstrate that the groundwater protection standards of WAC 173-303-645(3) have been met. This monitoring will complement monitoring conducted to (1) evaluate the performance of the IRM and (2) support selection of a final remediation alternative.

3.1.2 WAC 173-303-645(8) General Groundwater Monitoring Requirements

The requirements described in WAC 173-303-645(8) will be met as described in the *183-H Corrective Action Monitoring Plan* (Hartman, 1997). Newly collected data will be reported quarterly and an evaluation of monitoring data will be reported in the Annual Groundwater Project Report for the Hanford Site (e.g., Hartman and Dresel 1997).

3.2 RCRA CORRECTIVE ACTION GROUNDWATER MONITORING SCHEDULE

The *183-H Compliance Monitoring Plan* (Hartman and Chou 1995) has been revised (Hartman 1997) to accommodate changes in (1) the groundwater flow pattern and (2) concentrations of selected waste indicators, which are brought on by pump-and-treat remediation activities. The EPA Data Quality Objectives process (EPA 1994) was followed to help design the revised sampling and analysis schedule. Representatives from RL, Ecology, and EPA reached consensus on objectives, wells to be sampled, constituents for analysis, sampling frequency, and water level measurements (Furman 1997).

The resulting schedule for the 183-H Solar Evaporation Basins RCRA network is presented in Table 3.1. This table identifies the wells being sampled, the frequency of sampling, and an analysis suite code for the previous RCRA compliance monitoring schedule and for the revised corrective action monitoring schedule. Table 3.2 provides a complete description of the constituent analysis suites. Information on sampling schedules under CERCLA is included in the Tables, to provide a complete description of all groundwater-monitoring activities being conducted in the vicinity of the former 183-H Solar Evaporation Basins.

The RCRA sampling and analysis schedule includes a network of four wells sampled annually. The wells are ~~199-H4-3,~~ 199-H4-8, 199-H4-12A, ~~and~~ 199-H4-12C, and 199-H4-84 (Figure 3.1). (Wells ~~199-H4-8 and~~ 199-H4-~~12A~~12C is ~~are~~ also used as an extraction wells for the pump-and-treat system.) ~~(Wells 199-H4-8 and 199-H4-12A are also used as extraction wells for the pump-and-treat system.)~~ Water samples will be analyzed for the constituents of concern previously identified for tracking contamination attributable to the 183-H Solar Evaporation Basins (nitrate, fluoride, chromium, uranium, and technetium-99). Additional analyses will be performed for alkalinity, other anions, and other metals, to aid in interpreting results. Field parameters (pH, temperature, specific conductance, and turbidity) will also be measured.

Minor modifications to the list of specific wells used and constituents analyzed may be appropriate to account for changing field conditions, IRM operational requirements, and changes identified during the data evaluation process. Recommendations for minor modifications will be presented for regulator approval outside of the permit modification process prior to implementation.

3.3 GROUNDWATER MONITORING UNDER CERCLA

Groundwater underlying the former 183-H Solar Evaporation Basins is included in the 100-HR-3 Operable Unit. This groundwater operable unit contains the groundwater underlying the 100-D/DO Area, 100-H Area, and the 600 Area in between. Along the Columbia River, the boundary of the operable unit is generally accepted as the interface between groundwater discharging from the aquifer and river water. Samples of riverbank seepage and of pore water from riverbed sediment are used to monitor the interface.

3.3.1 100-HR-3 Remedial Investigation Monitoring

The remedial investigation was initially guided by a work plan (DOE-RL 1992) that directed a limited field investigation. A limited field investigation report, which includes a qualitative risk assessment, was prepared (DOE-RL 1994). A focused feasibility study was subsequently conducted that looked at various remediation alternatives to address chromium contamination, and to help decide whether interim remedial measures were warranted (DOE-RL 1995a). A proposed plan (DOE-RL 1995b) and Record-of-Decision (EPA 1996) were then prepared that described a pump-and-treat alternative to address chromium in the 100-HR-3 and 100-KR-4 Operable Units.

In addition to chromium, other groundwater constituents in the 100-H Area remain above EPA drinking water standards and/or Washington State cleanup levels (Peterson et al. 1996). Chemical constituents include aluminum, fluoride, iron, manganese, nitrate, and uranium. Radiological constituents include gross alpha, gross beta, strontium-90, and technetium-99. None of these constituents have been designated as contaminants of concern for interim remedial measures, by reason of human health or ecological risk.

Sampling under the remedial investigation is typically conducted annually, with some wells being monitored quarterly for selected constituents, and others being sampled once every two years. Biennial sampling is conducted where two wells monitor essentially the same conditions, but each well is sampled on alternate years. The schedule for remedial investigation monitoring well sampling for FY 1997 and FY 1998 is included in Table 3.1.

3.3.2 100-HR-3 Interim Remedial Measure Monitoring

A decision was made in 1996 to proceed with accelerated remediation activities to remove hexavalent chromium (Cr+6) from groundwater underlying the 100-HR-3 Operable Unit (DOE-RL 1995b; EPA 1996). The activities involve pumping groundwater from wells located near the river and removing chromium using an ion exchange resin (DOE-RL 1996a). In the 100-H Area, two additional inland wells were added to the extraction network to intercept chromium migrating into the 100-H Area from sources located to the west. The treated effluent will be reinjected into the unconfined aquifer at an upgradient inland location. Operation of the pump-and-treat system is scheduled to start in July 1997. As stated in

the ROD (EPA 1996), the remedial action objectives for the pump-and-treat system include the following three components:

- Protect aquatic receptors in the river bottom substrate from contaminants in groundwater entering the Columbia River (Note: The ROD identifies Cr+6 as the target contaminant)
- Protect human health by preventing exposure to contaminants in the groundwater
- Provide information that will lead to the final remedy.

The relevant standard for meeting these objectives during the IRM is the State of Washington's Ambient Water Quality Standard (AWQS) for Protection of Freshwater Aquatic Life for hexavalent chromium, which is 11 µg/L for chronic exposure (WAC 173-201A-040). The highest priority contaminated areas to be addressed initially by the remedial action are adjacent to riverbed substrate that is known to provide suitable habitat for salmon spawning. Some of these areas have been defined by direct observation of riverbed substrate and sediment pore water analysis (Hope and Peterson 1996a and 1996b).

In addition to chromium, other contaminants of concern in the 100-H Area that were identified in the ROD (EPA 1996) are nitrate, strontium-90, technetium-99, and uranium. With the exception of strontium-90, the ion exchange treatment system is expected to reduce concentrations of all these contaminants. Tritium may also be present in the extracted water; however, tritium concentrations in 100-H Area wells have decreased to below drinking water standards (Peterson et al. 1996).

3.3.2.1 Data Quality Objectives for IRM Monitoring

Groundwater sampling and analysis activities associated with the IRM for chromium (DOE-RL 1997) serve two general purposes: (1) Performance monitoring to determine the effectiveness and efficiency of the extraction system, and (2) compliance monitoring to show how well the remediation is doing relative to target goals described in the ROD (EPA, 1996).

The objectives for performance monitoring are to collect water level and water quality data that are used to (1) optimize the performance of the groundwater extraction system; (2) document aquifer and chromium plume response to pumping and injection of treated effluent, and (3) obtain supplemental data to support selection of a final remediation alternative for the 100-HR-3 Operable Unit.

Objectives for compliance monitoring are described in the interim ROD (EPA, 1996), which states that monitoring will be conducted at near-river onshore locations that are above the river's high water line. Sampling will be conducted at multiple depth intervals at compliance locations. A dilution factor of 1:1 is allowed when demonstrating compliance with the WAC AWQS of 11 µg/L in riverbed sediment. That is, 22 µg/L at compliance locations is deemed equivalent to 11 µg/L at depths in riverbed substrate of up to 46 cm. Locations initially designated to serve as compliance monitoring points are wells 199-H4-4, 199-H4-5, 199-H4-49, 199-H4-63, and 199-H4-64.

3.3.2.2 IRM Monitoring Wells and Sampling Schedules

The groundwater monitoring wells used to support the interim remedial measures include extraction wells, injection wells, performance monitoring wells, and compliance monitoring wells. The wells are used to obtain water quality data and water level measurements. The schedules for sampling and analysis of these wells are described in Table 3.1 with the analysis listed in Table 3.2. The tables summarize the sampling and analysis schedules for the IRM network as it is planned for FY 1997 and FY 1998. These schedules are subject to change as the result of information gained during the IRM. The schedule for water level measurements is provided in Table 3.3.

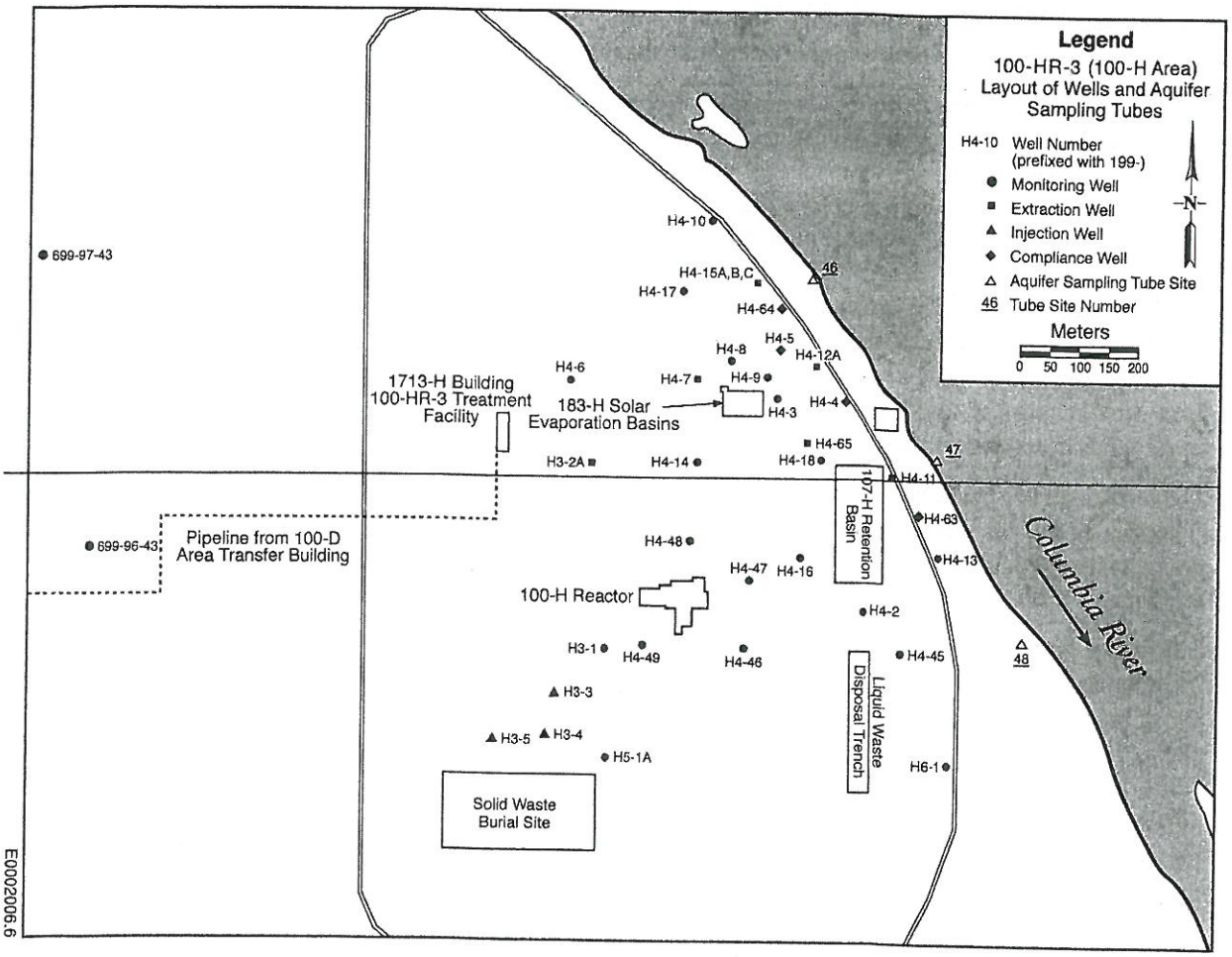
3.4 INSPECTION, MAINTENANCE, AND REPLACEMENT OF WELLS

Each time a well is sampled by any of the Hanford Site groundwater monitoring programs, the wellhead, cap, protective posts, and concrete pad are inspected. If the samplers experience problems with dedicated

sampling pumps, excessive turbidity in the sample, etc., these problems are noted and maintenance is scheduled.

Periodic maintenance and rehabilitation are generally performed on Hanford Site monitoring wells at five-year intervals. This includes removing dedicated equipment, brushing the well bore, removing sediment accumulation, conducting a downhole video camera survey, responding to service difficulty reports, and reinstalling dedicated equipment. A comprehensive description of well maintenance, reconfiguration, and decommissioning is presented in Chapter 8 of the Hanford Site Annual Groundwater Monitoring Report for FY 1996 (Hartman and Dresel 1997).

Figure 3.1. Location Map for 100-H Area Monitoring Wells



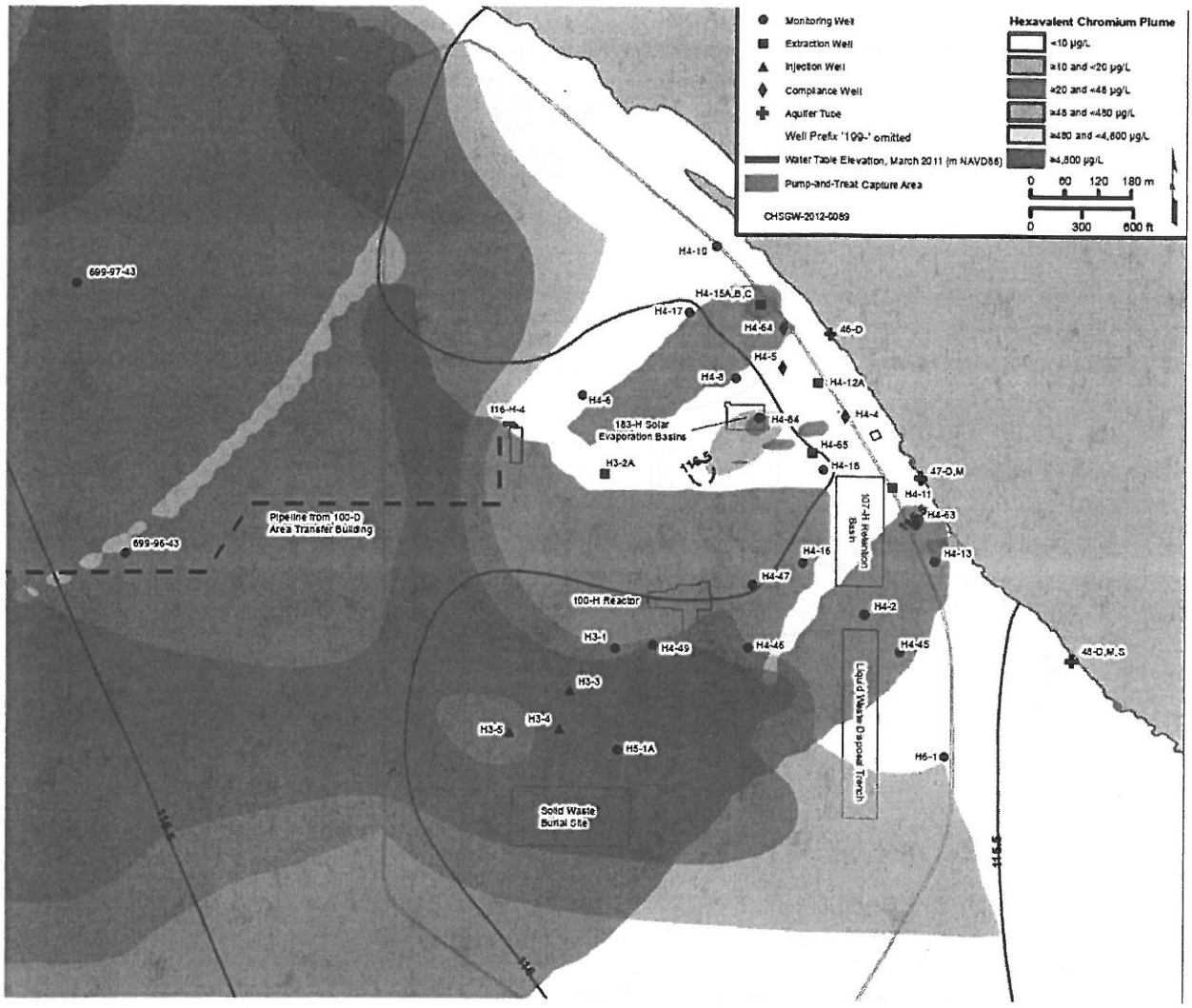
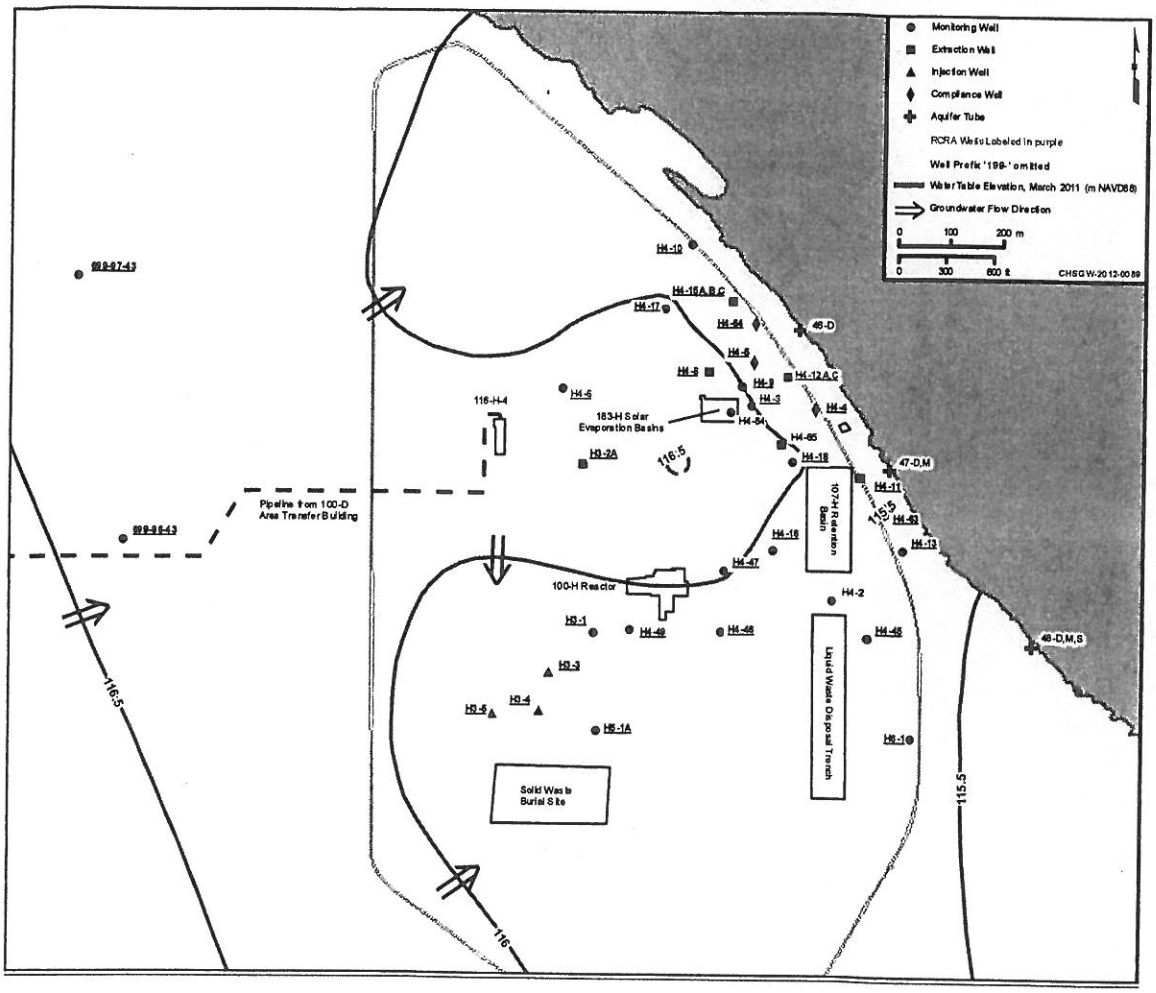

Monitoring Well
Extraction Well
Injection Well
Compliance Well
Aquifer Tube
Well Prefix '199-' omitted
Water Table Elevation, March 2011 (m NAVD88)
Pump-and-Treat Capture Area
CHSGW-2012-0069
Hexavalent Chromium Plume
<10 µg/L
≥10 and <20 µg/L
≥20 and <48 µg/L
≥48 and <480 µg/L
≥480 and <4,800 µg/L
≥4,800 µg/L
0 60 120 180 m
0 300 600 ft
699-97-43
699-96-43
H4-10
H4-15A,B,C
H4-17
H4-64
46-D
H4-5
H4-3
H4-12A
H4-6
116-H-4
183-H Solar Evaporation Basins
H4-4
H4-65
H3-2A
H4-18
47-D,M
H4-11
H4-63
Pipeline from 100-D Area Transfer Building
107-H Retention Basin
H4-13
H4-16
H4-47
100-H Reactor
H4-2
H3-1
H4-49
H4-46
H4-45
48-D,M,S
H3-3
H3-4
H3-5
H5-1A
H5-1
Liquid Waste Disposal Trench
Solid Waste Burial Site

Figure 3.2. Predicted Groundwater Flow During Interim Remedial Measure



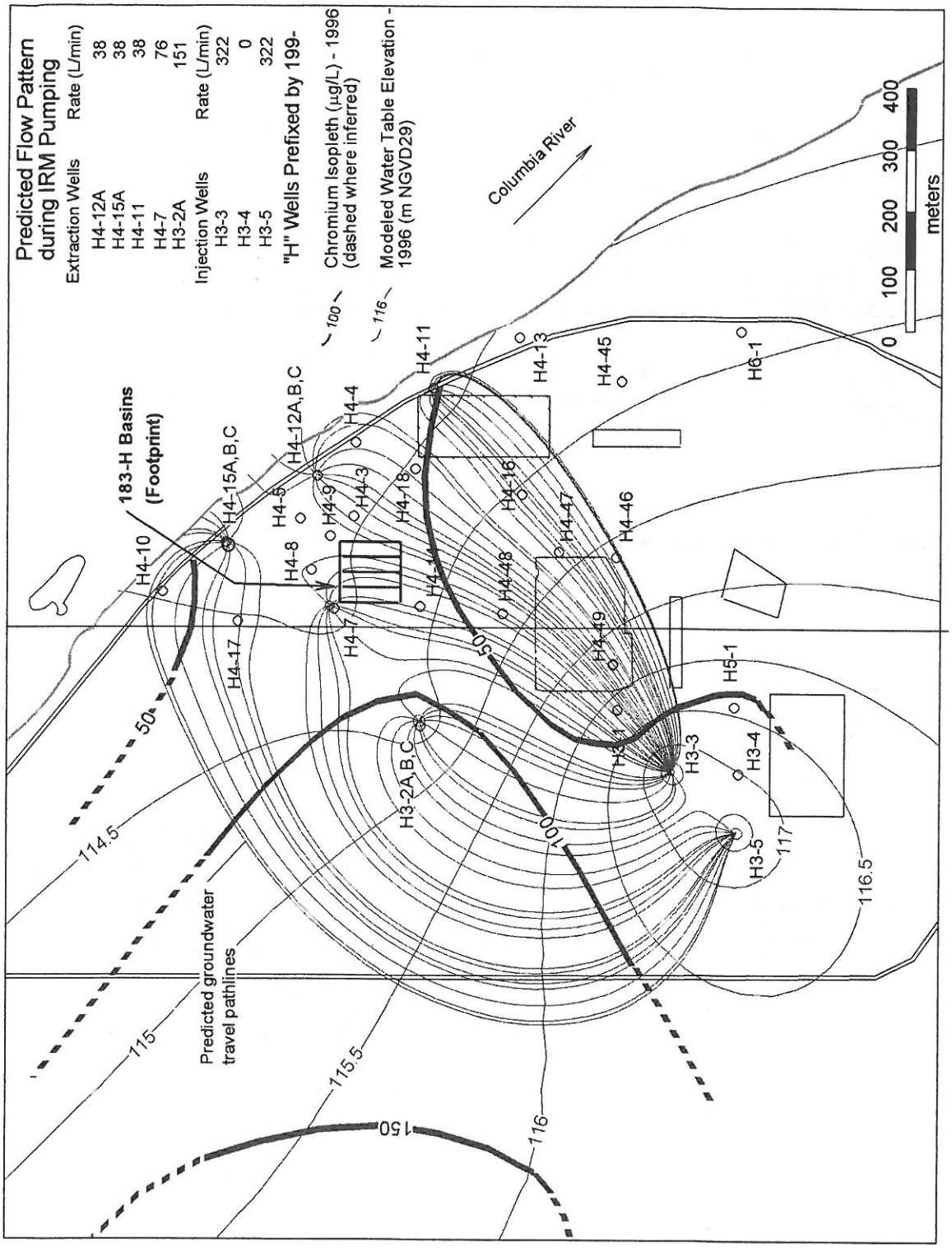

Predicted Flow Pattern during IRM Pumping
Extraction Wells Rate (L/min)
H4-12A 38
H4-15A 38
H4-11 38
H4-7 76
H3-2A 151
Injection Wells Rate (L/min)
H3-3 322
H3-4 0
H3-5 322
"H" Wells Prefixed by 199-
Chromium Isopleth (µg/L) - 1996 (dashed where inferred)
Modeled Water Table Elevation - 1996 (m NGVD29)
Columbia River
183-H Basins (Footprint)
Predicted groundwater travel pathlines
meters
0 100 200 300 400
H4-10
H4-15A,B,C
H4-12A,B,C
H4-4
H4-11
H4-13
H4-45
H6-1
H4-5
H4-9
H4-3
H4-18
H4-16
H4-47
H4-46
H4-8
H4-7
H4-17
H4-48
H4-49
H5-1
H3-2A,B,C
H3-3
H3-4
H3-5
50
100
150
114.5
115
115.5
116
116.5
117

Figure 3.3. Chromium Contamination in the 100-H Area

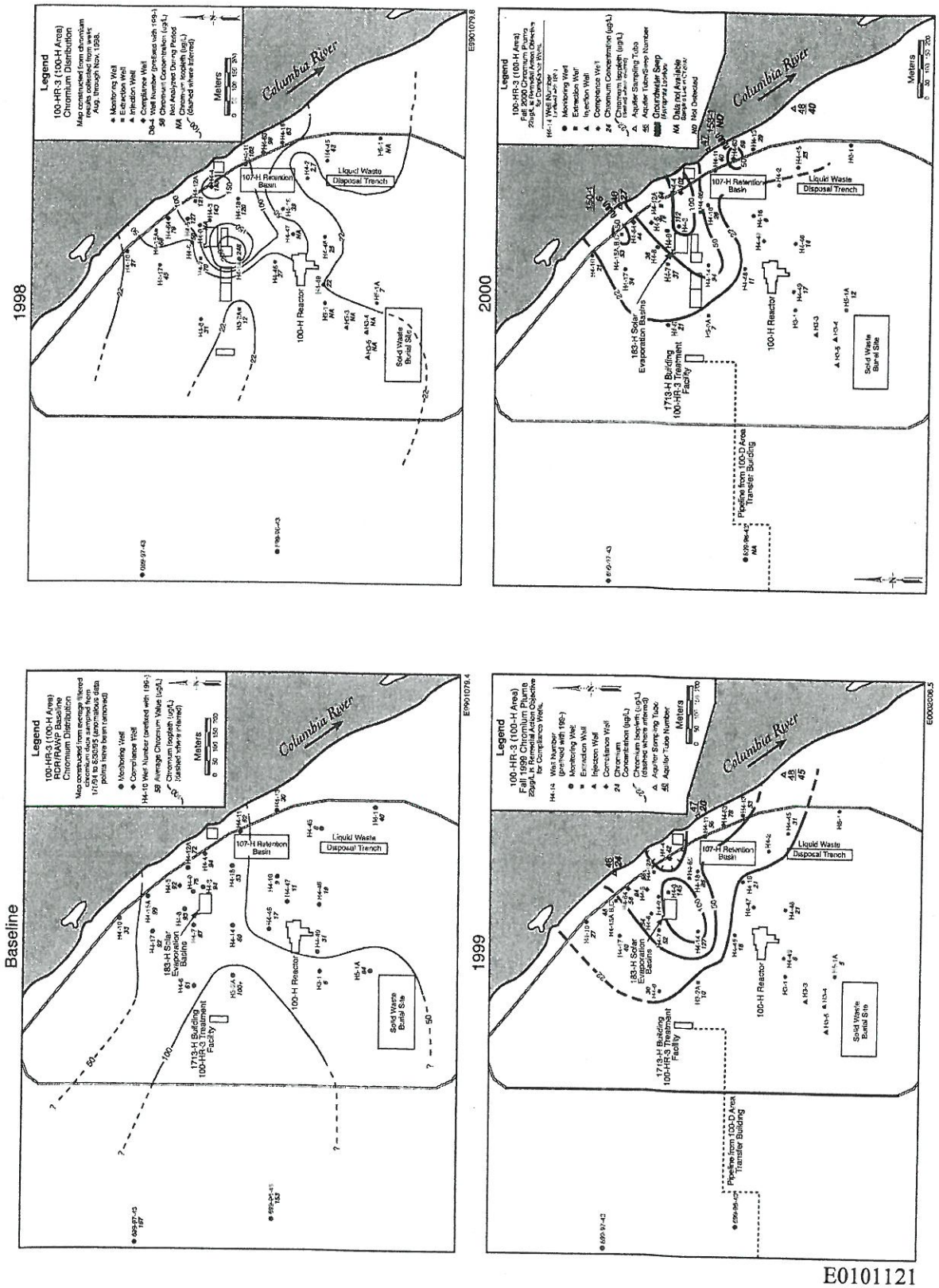


Table 3.1. Sampling and Analysis Schedule for 183-H Solar Evaporation Basins RCRA Corrective Action & CERCLA Remedial Investigation Monitoring

Well/Location Identifier	Facility Monitored/Purpose	RCRA:		CERCLA Remediation Activities:		
		183-H: Compliance (Pre-IRM[1])	183-H: Corrective Action [2]	RI/FS[3] Round 11: FY 97	Outlook[3] Round 12: FY 98	IRM Monitor Plan[4]
199-H3-1	Reactor building				BA(98)-2	
199-H3-2A	D-plume migration/ IRM extraction well	SA-1		A-2	A-2	SA-3 Q-Cr
199-H3-2C (deep conditions)	D-plume migration/ vertical distribution				BA(98)-2	
199-H4-3	183-H basins/IRM performance	SA-1	A-1	BA(97)-2		SA-Cr
199-H4-4	183-H basins/IRM compliance	SA-1		A-2	A-2	M-Cr
199-H4-5	183-H basins/IRM compliance				BA(98)-2	M-Cr
199-H4-6	D-plume migration/ IRM performance	SA-1		BA(97)-2		SA-Cr
199-H4-8	183-H basins/IRM extraction		A-1			SA-3 Q-Cr
199-H4-8	183-H basins/IRM performance			BA(97)-2		SA-Cr
199-H4-9	183-H basins	SA-1			BA(98)-2	
199-H4-10	D-plume migration/ IRM performance			A-2	A-2	SA-Cr
199-H4-11	Retention basins/ IRM extraction					SA-3 Q-Cr
199-H4-12A	183-H basins/ IRM extraction	SA-1	A-1			SA-3 Q-Cr
199-H4-12B	183-H basins/ IRM performance					SA-Cr
199-H4-12C (deep conditions)	183-H basins/ IRM performance	SA-1	A-1	A-2	A-2	SA-Cr
199-H4-13	Retention basins/ IRM performance			A-2	A-2	SA-Cr
199-H4-14	190-H coolant prep/ IRM performance			BA(97)-2		SA-Cr
199-H4-15A	D-plume migration/ IRM extraction					SA-3 Q-Cr
199-H4-15B	D-plume migration/ IRM performance					SA-Cr
199-H4-15CS (deep conditions)	D-plume migration/ IRM performance					SA-Cr
199-H4-16	Reactor building/ IRM performance			BA(97)-2		SA-Cr
199-H4-17	D-plume migration/ IRM performance			BA(97)-2		SA-Cr

Well/Location Identifier	Facility Monitored/Purpose	RCRA:		CERCLA Remediation Activities:		
		183-H: Compliance (Pre-IRM[1])	183-H: Corrective Action [2]	RI/FS[3] Round 11: FY 97	Outlook[3] Round 12: FY 98	IRM Monitor Plan[4]
199-H4-18	183-H basins/ IRM performance	SA-1		A-2	A-2	SA-Cr
199-H4-45	Liquid waste disposal trench/ IRM performance			A-2	A-2	SA-Cr
199-H4-46	Reactor building/ IRM performance			BA(97)-2		SA-Cr
199-H4-47	Reactor building				BA(98)-2	
199-H4-48	Reactor building/ IRM performance				BA(98)-2	SA-Cr
199-H4-49	Reactor building/ IRM compliance				BA(98)-2	SA-Cr
199-H4-84	183-H basins/IRM compliance	SA-1		A-2	A-2	M-Cr
199-H5-1A	118-H-1 solid waste burial/IRM performance				BA(98)-2	SA-Cr
199-H6-1	Liquid waste disposal trench			A-2	A-2	
199-H4-63 (new well FY97)	IRM compliance					M-Cr
199-H4-64 (new well FY97)	IRM compliance					M-Cr
699-96-43	D-plume migration/ background			BA(97)-2		
699-97-43	D-plume migration/ background				BA(98)-2	

Sampling code abbreviations: 'BA' = biennial (next year), 'A' = annual, 'SA' = semiannual, 'Q' = quarterly, and 'M' = monthly. The '-1, -2, -3' suffixes define the analysis suite (Table 3.2). 'Q-Cr' indicates quarterly screening for chromium, Sr-90, etc. '(+Tc-99) ' indicates constituent added to basic suite listed in Table 3.2.

Footnotes (References):

1. *183-H Compliance* (183-H compliance groundwater monitoring plan - Hartman and Chou, 1995)
2. *183-H Corrective Action* (183-H corrective action groundwater monitoring plan - Hartman, 1997)
3. *RI/FS Round #11 and #12 Outlook* reflect Tri-Party Agreement Change Control Form #107, November 1996
4. *IRM Monitoring Plan* is for post-July 1997 (IRM Monitoring Plan [DOE-RL 1997])

1

Table 3.2. Analysis Suite Codes for 183-H RCRA Corrective Action & CERCLA Remedial Investigation Monitoring

Analysis/ Parameter	Constituent Code #1 (RCRA: FY97/98)[1]	Constituent Code #2 (RI Round 11&12--FY97/98)[2]	Constituent Code #3 (IRM--FY97/98)[3]
Metals by routine ICP (SW 846 6010B/C, SW 846 6020, or EPA/600/R-94/111, 200.8 - Target Analyte List Note: Filtered and unfiltered samples for all metal analyses, except ROM collects filtered samples only	Aluminum, Iron Antimony, Magnesium Barium, Manganese Beryllium, Nickel Cadmium, Potassium Calcium, Silver Chromium, Sodium Cobalt, Vanadium Copper, Zinc	Aluminum, Iron Antimony, Magnesium Barium, Manganese Beryllium, Nickel Cadmium, Potassium Calcium, Silver Chromium, Sodium Cobalt, Vanadium Copper, Zinc	
Metals: Other (Chromium, hexavalent: SW-846 7196A; ; Laboratory Specific Uranium Method)	Uranium		Chromium, hexavalent Uranium
Anions by IC (EPA/600/R-93/100, 300.0)	Chloride Fluoride Nitrate Sulfate	Chloride Fluoride Nitrate Sulfate	Nitrate
Radionuclide screening: (Laboratory Specific Methods)	Activity scan[4]	Gross alpha Gross beta Activity scan[4]	
Specific radionuclides: (Laboratory Specific Methods)	Technetium-99	Tritium	Strontium-89/90 Technetium-99 Tritium
Miscellaneous parameters: (Standard Methods 2320; EPA/600/4-79/020, 310.1 & 310.2)	Alkalinity		
Field parameters:	pH Specific conductance Temperature Turbidity	pH Specific conductance Temperature Turbidity	pH Specific conductance Temperature Turbidity

Footnotes (References):

1. Code #1 is based on 183-H compliance groundwater monitoring plan (Hartman and Chou, 1995); constituents in bold are dangerous waste constituents used for evaluations under WAC-173-303-645(10).
2. Code #2 is based on Tri-Party Agreement Change Control Form #107, November 1996
3. Code #3 is from IRM Monitoring Plan (DOE-RL 1997)
4. Selected wells only

Abbreviations: ICP = inductively coupled plasma; IC = ion chromatography

Table 3.3. CERCLA Interim Remedial Measure Groundwater Well Network:

Well Number	Intended Use	Operations Period-- July 1997 to end of IRM:			
		Hourly Water Levels[1]	Steel Tape Measure[2]	Hexavalent Chromium[3]	Co-contaminants[4]
199-H3-2A	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-8	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-11	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-12A	Extraction well	Transducer	Monthly	Quarterly	Semiannual
199-H4-15A	Extraction well	Transducer	Monthly	Quarterly	Semiannual
~~199-H3-3~~	~~Injection well~~	~~Transducer~~	~~Monthly~~		
199-H3-4	Injection well	Transducer	Monthly		
199-H3-5	Injection well	Transducer	Monthly		
199-H4-3	Performance monitoring		Quarterly	Semiannual	
199-H4-6	Performance monitoring		Quarterly	Semiannual	
199-H4-8	Performance monitoring	Transducer	Monthly	Semiannual	
199-H4-10	Performance monitoring	Transducer	Monthly	Semiannual	
199-H4-12B	Performance monitoring	Transducer	Monthly	Semiannual	
199-H4-12C	Performance monitoring		Quarterly	Semiannual	
199-H4-13	Performance monitoring		Quarterly	Semiannual	
199-H4-14	Performance monitoring		Quarterly	Semiannual	
199-H4-15B	Performance monitoring	Transducer	Monthly	Semiannual	
199-H4-15CS	Performance monitoring		Quarterly	Semiannual	
199-H4-16	Performance monitoring		Quarterly	Semiannual	
199-H4-17	Performance monitoring		Quarterly	Semiannual	
199-H4-18	Performance monitoring		Quarterly	Semiannual	
199-H4-45	Performance monitoring		Quarterly	Semiannual	
199-H4-46	Performance monitoring		Quarterly	Semiannual	
199-H4-48	Performance monitoring		Quarterly	Semiannual	
199-H4-49	Performance monitoring		Quarterly	Semiannual	
199-H5-1A	Performance monitoring		Quarterly	Semiannual	
199-H4-4	Compliance monitoring	Transducer	Monthly	Monthly	Annual
199-H4-5	Compliance monitoring	Transducer	Monthly	Monthly	Annual
199-H4-63	Compliance monitoring	Transducer	Monthly	Monthly	Annual
199-H4-64	Compliance monitoring	Transducer	Monthly	Monthly	Annual

Footnotes:
[1] Hourly measurements using pressure transducers and data loggers
[2] Routine steel tape measurements; monthly measurements to calibrate pressure transducers
[3] Hexavalent chromium using Hach methodology, ERC Mobile Laboratory
[4] Co-contaminants: Nitrate, strontium-90, technetium-99, tritium, and uranium
[3 & 4] Field measurements for pH, specific conductance, temperature, and turbidity during all sampling

Source: DOE-RL 1997

ENCLOSURE 2

Outline of how compliance will be maintained in accordance with WAC-173-303-830(4)(e)(ii)(III)

Consisting of 3 pages, includes cover page

To support RL's request for a Temporary Authorization, this attachment contains an outline of how compliance will be maintained during the modification to the Post-Closure, Ground Water Monitoring. In accordance with WAC 173-303-830(4)(e)(ii)(B)(III), a Temporary Authorization request must contain:

> "Sufficient information to ensure compliance with the standards in WAC 173-303-280 through 173-303-395 and 173-303-600 through 173-303-680."

WAC 173-303-280 through 173-303-395 and 173-303-600 through 173-303-680	
Requirement	Implementation
173-303-280, General requirements for dangerous waste management facilities.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-281, Notice of intent.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-282, Siting criteria.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-283, Performance standards.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-290, Required notices.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-300, General waste analysis.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-310, Security	No changes are being made to the security protocol that is maintained to meet -310 requirements under the Hanford Dangerous Waste Permit.
173-303-320, General inspection.	No changes are being made to the general inspection protocol that is maintained to meet -320 requirements under the Hanford Dangerous Waste Permit.
173-303-330, Personnel training.	No changes are being made to the training program that is maintained to meet -330 requirements under the Hanford Dangerous Waste Permit.
173-303-335, Construction quality assurance program.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-340, Preparedness and prevention.	Required emergency equipment for the mixed waste and access to communication and alarms has been identified in the contingency plan under -350 in order to meet -340(1) and -340(2) respectively. Arrangements with local authorities under -340(4) are met at the site level.
173-303-350, Contingency plan and emergency procedures.	Contingency plan requirements are met through the Hanford Emergency Management Plan DOE/RL-94-02.
173-303-355, Superfund Amendments and Reauthorization Act Title III coordination.	Planning with off-site agencies for emergencies is performed at the site level.
173-303-360, Emergencies.	Emergency procedures for 183-H are described

WAC 173-303-280 through 173-303-395 and 173-303-600 through 173-303-680	
Requirement	Implementation
	in the contingency plan under -350.
173-303-370, Manifest system.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-380, Facility recordkeeping.	The records required by -380(2) are documented in the Part A Permit Application and maintained in the unit-specific portion of the Hanford Facility Operating Record. Records will be provided to Ecology upon request in accordance with -380(3).
173-303-390, Facility reporting.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-395, Other general requirements	This section does not apply based on the 183-H unit being under post-closure care.
173-303-600, Final facility standards.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-610, Closure and post-closure.	Certification of Closure for 183-H was accepted by Ecology on May 13, 1997. The unit is undergoing post-closure care in accordance with Part VI or the Hanford Facility Dangerous Waste Permit, Revision 8C.
173-303-620, Financial requirements.	As a federal facility, DOE is not subject to the financial assurance requirements.
173-303-630, Use and management of containers.	This section does not apply based on the 183-H unit being under post-closure care.
173-303-640 through -680	This mod changes the well monitoring network, and hence WAC 173-303-645(8)(a) and (c) may apply. The identified replacement well is expected to result in a better groundwater monitoring network, and hence would be compliant with the -645(8) requirements.