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

SEP 12 1996

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Dear Mr. Sherwood:

HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORMS #M-15-96-06 AND #M-15-96-07

Attached for your information are copies of the Hanford Federal Facility Agreement and Consent Order Change Control Forms #M-15-96-06, Modifications to the Groundwater Sampling and Analysis Schedules for the 100-FR-3 Operable Unit (OU) Groundwater Sampling Project (Attachment 1); and #M-15-96-07 Modifications to the Groundwater Sampling and Analysis Schedules for the 100-BC-5 OU Groundwater Sampling Project (Attachment 2). The Change Control Forms have been signed by the Project Managers for the U.S. Environmental Protection Agency, the lead regulatory agency for these OUs, and the U.S. Department of Energy, Richland Operations Office.

If you have any questions, please contact me at 373-9631.

Sincerely,

Arlene C. Tortoso

Arlene C. Tortoso, Project Manager
Groundwater Project

RP:ACT

George H. Sanders, Administrator
Hanford Tri-Party Agreement

Attachments: As stated

cc w/o attachs:
R. Chatman, BHI
G. Henckel, BHI
A. Knepp, BHI
R. Rayner, BHI

cc w/attachs:
D. Faulk, EPA
P. Innis, EPA
R. Morrison, WHC (w/orig attachs)
W. Soper, Ecology

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Change Number	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date
M-15-96-06		7/31/96

Originator
A. C. Tortoso

Phone
373-9631

Class of Change

[ ] I - Signatories [ ] II - Executive Manager [X] III - Project Manager

Change Title

Modifications to the Groundwater Sampling and Analysis Schedules fo· the 100-FR-3 Operable Unit Groundwater Sampling Project

Description/Justification of Change

Four modifications to the previous groundwater sampling and analysis schedule for the 100-FR-3 Operable Unit (100 NPL Agreement/Change Control #39, December 1992) are being made:

1. Sampling frequency for most wells is reduced from semiannual to annual. Annual sampling will be conducted to coincide with seasonal low river conditions that typically occur during the period September through November.

2. Sampling locations are selected on the basis of proximity to the Columbia River, historical trends in each well, and contaminant plume locations.

3. More frequent sampling of wells with contaminant levels that exceed ARARs or that show increasing trends is conducted using cost-effective methods (e.g., field instruments, Mobile Lab, and no purging of the well).

4. Data validation, as performed during the limited field investigation, is not performed for all new data. Modified data verification and validation steps are adopted that improve cost-effectiveness without compromising data quality. Data evaluation activities are expanded to enhance the quality of information derived from sampling and analysis activities.

The attached Tables 1 and 2 summarize the changes to the sampling program. Minor modifications to the list of specific wells used and constituents analyzed may occur to meet changing field conditions, IRM operational requirements, and the results of data evaluation.

Impact of Change

The changes in sampling result in a more integrated and cost-effective program. The impact of this change includes increased efficiency in obtaining data that can be applied to data quality objectives for multiple programs (e.g., CERCLA remediation activities and DOE Order 5400 surveillance). Sample collection efforts are integrated to the fullest extent possible under a consolidated schedule. Where reductions in number of samples, analytes, and frequency of sampling occur, a minimal or negligible loss of relevant information is expected.

Affected Documents

1) Remedial Investigation/Feasibility Study Work Plan for the 100-FR-3 Operable Unit, Hanford Site, Richland, WA; DOE/RL-91-53, September 1992. Appendix A includes a Quality Assurance Project Plan (QAPjP) as required by EPA guidance. 2) 100 NPL Agreement/ Change Control Form #39, "100-FR-3 Operable Unit Groundwater Monitoring Network," EPA approval December 1992.

Approvals

Arlene C. Tortoso DOE	8/15/96 Date	✓ Approved ___ Disapproved
Pamela S. Innis EPA	08/15/96 Date	✓ Approved ___ Disapproved
N/A Ecology	___ Date	___ Approved ___ Disapproved

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Table 1. Sampling and Analysis Schedule for the 100-FR-3 Groundwater Project (Page 1 of 2)

Well Number	Facility Monitored/Purpose	RI/FS Round 8 (FY 96)	Proposed Round 9 (FY 97)	Sitewide Surveillance[1] (1996)
199-F1-2	"Lewis" canal/near river	SA-1	A-2	
199-F5-1	Retention basin/near river	SA-1	A-2 Q (Sr-90)	A*
199-F5-2 (analog: F5-3)	Retention basin/near river			
199-F5-3	Retention basin/near river		A-2 Q (Sr-90)	A
199-F5-4	Reactor building effluent disposal	SA-1	BA-2(97)	
199-F5-5 (analog: F5-6)	Animal farm liquid effluent			
199-F5-6	Laboratory effluent	SA-1	A-2	A*
199-F5-7 (analog: F5-48)	Reactor building effluent			
199-F5-42	Retention basin/near river	SA-1	A-2	
199-F5-43A	Retention basin/near river	SA-1	A-2	
199-F5-43B (deep well)	Retention basin/near river	SA-1	A-2	
199-F5-44	Laboratory effluent/near river	SA-1	A-2	
199-F5-45	Reactor building effluent	SA-1	BA-2(97) Q (NO3)	
199-F5-46	Reactor building effluent	SA-1	~~B~~A-2(98) Q (Cr+6)	A*
199-F5-47	Reactor building effluent	SA-1	BA-2(98)	A*
199-F5-48	Reactor building effluent	SA-1	BA-2(98)	
199-F6-1	Liquid waste disposal trench/near river	SA-1	A-2	
199-F7-1	Background/TCE plume	SA-1	BA-2(98)	A*
199-F7-2	"Lewis" canal	SA-1	BA-2(98)	

Notes: BA = biennial, A = annual, SA = semiannual, and Q = quarterly. The suffix "__-#" attached to the sampling frequency is a code for the constituent list (see Table 2). Numbers in parentheses refer to the first year of biennial sampling. An "*" indicates co-sampling between programs.

[1] Sitewide surveillance schedule (PNNL-10950) is included for informational purposes.

Table 1. Sampling and Analysis Schedule for the 100-FR-3 Groundwater Project (Page 2 of 2)

Well Number	Facility Monitored/Purpose	RI/FS Round 8 (FY 96)	Proposed Round 9 (FY 97)	Sitewide Surveillance[1] (1996)
199-F7-3	Background/TCE plume	SA-1	BA*-2(97)	A*
199-F8-1	Reactor building effluent	SA-1	BA*-2(97)	A*
199-F8-2	Reactor building effluent	SA-1	BA*-2(98)	A*
199-F8-3	Background/solid waste disposal	SA-1	BA*-2(97)	A*
199-F8-4	Area/downgradient of facilities	SA-1	A-2	
699-71-30	Background/downgradient	SA-1	BA-2(97)	
699-74-44	Background/TCE plume			
699-77-36	Background/TCE plume	SA-1	BA-2(98)	A*
699-80-43s	Background/TCE plume			
699-81-38	Background/TCE plume	SA-1	BA-2(97)	
699-82-32	Background			
699-82-34	Background			
699-83-36	Background			
699-83-47	Background	SA-1	BA-2(98)	A*
699-84-35A	Background		BA-2(97)	A
699-84-35A-(piezometers)	Background			
Seep 187-1	Area/shoreline exposure		A-2	
Seep 190-4	Area/shoreline exposure		A-2	
Seep 207-1 (alternate: 211-1)	Area/shoreline exposure		A-2	

Notes: BA = biennial, A = annual, SA = semiannual, and Q = quarterly. The suffix "__-#" attached to the sampling frequency is a code for the constituent list (see Table 2). Numbers in parentheses refer to the first year of biennial sampling. An "*" indicates co-sampling between programs.

[1] Sitewide surveillance schedule (PNNL-10950) is included for informational purposes.

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Table 2. Analysis Suite Codes for the 100-FR-3 Groundwater Project

Analysis/ Parameter	Constituent Code #1 (Round 8–FY96)	Constituent Code #2 (Round 9–FY97/98)
Metals by ICP and AA (filtered and unfiltered)	Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc
Anions by IC	Chloride Fluoride Nitrite Nitrate Phosphate Sulfate	Chloride Fluoride Nitrate Nitrate Phosphate Sulfate
Volatile Organics	TCL (inc. TCE)	TCL (inc. TCE)
Radionuclide screening:	Gross alpha Gross beta Activity scan	Gross alpha Gross beta Activity scan
Specific radionuclides:	Carbon-14 Strontium-90 Tritium	Carbon-14 Strontium-90 Tritium
Miscellaneous parameters:	Specific conductance pH	Alkalinity
Field parameters:	pH Specific conductance Temperature	pH Specific conductance Temperature Turbidity

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Change Number	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date
M-15-96-07		7/31/96

Originator
A. C. Tortoso

Phone
373-9631

Class of Change

[ ] I - Signatories [ ] II - Executive Manager [X] III - Project Manager

Change Title

Modifications to the Groundwater Sampling and Analysis Schedules for the 100-BC-5 Operable Unit Groundwater Sampling Project

Description/Justification of Change

Four modifications to the previous groundwater sampling and analysis schedule for the 100-BC-5 Operable Unit (100 NPL Agreement/Change Control #14, July 1992) are being made:

1. Sampling frequency for most wells is reduced from semiannual to annual. Annual sampling will be conducted to coincide with seasonal low river conditions that typically occur during the period September through November.

2. Sampling locations are selected on the basis of proximity to the Columbia River, historical trends in each well, and contaminant plume locations.

3. More frequent sampling of wells with contaminant levels that exceed ARARs or that show increasing trends is conducted using cost-effective methods (e.g., field instruments, Mobile Lab, and no purging of the well).

4. Data validation, as performed during the limited field investigation, is not performed for all new data. Modified data verification and validation steps are adopted that improve cost-effectiveness without compromising data quality. Data evaluation activities are expanded to enhance the quality of information derived from sampling and analysis activities.

The attached Tables 1 and 2 summarize the changes to the sampling program. Minor modifications to the list of specific wells used and constituents analyzed may occur to meet changing field conditions, IRM operational requirements, and the results of data evaluation.

Impact of Change

The changes in sampling result in a more integrated and cost-effective program. The impact of this change includes increased efficiency in obtaining data that can be applied to data quality objectives for multiple programs (e.g., CERCLA remediation activities and DOE Order 5400 surveillance). Sample collection efforts are integrated to the fullest extent possible under a consolidated schedule. Where reductions in number of samples, analytes, and frequency of sampling occur, a minimal or negligible loss of relevant information is expected.

Affected Documents

1) Remedial Investigation/Feasibility Study Work Plan for the 100-BC-5 Operable Unit, Hanford Site, Richland, WA; DOE/RL-90-08, July 1992. Appendix A includes a Quality Assurance Project Plan (QAPjP) as required by EPA guidance. 2) 100 NPL Agreement/ Change Control Form #14, "100-BC-5 Operable Unit Groundwater Monitoring Network," EPA approval July 1992.

Approvals

Arlene C. Tortoso DOE	8/15/96 Date	✓ Approved ___ Disapproved
Dennis Faulk EPA	08/15/96 Date	X Approved ___ Disapproved
N/A Ecology	___ Date	___ Approved ___ Disapproved

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Table 1. Sampling and Analysis Schedule for 100-BC-5 Groundwater Project (Page 1 of 2)

Well Number	Facility Monitored/Purpose	RI/FS Round 9 (FY 96)	Proposed Round 10 (FY 97)	Sitewide Surveillance[1] (1996)
199-B2-12 (Deep well)	Retention basins/near river	SA-1	A-2	
199-B2-13	Retention basins/near river	SA-1	A-2	
199-B3-1	Retention basins/near river	SA-1	A-2 Q (Sr-90)	
199-B3-2 (Deep well)	Liquid waste disposal trench/ near river			
199-B3-2p (Deep piezometer)	Liquid waste disposal trench/ near river			A
199-B3-2q (Deep piezometer)	Liquid waste disposal trench/ near river			A
199-B3-46	Liquid waste disposal trench/ near river	SA-1	A-2 Q (Sr-90)	A*
199-B3-47	Retention basins/near river	SA-1	A-2 Q (Sr-90; Cr+6)	
199-B4-1	Liquid waste disposal crib	SA-1	BA-2(97)	
199-B4-2	Liquid waste disposal crib			A
199-B4-3	Liquid waste disposal crib			
199-B4-4	Reactor building effluent disposal	SA-1	BA-2(98)	
199-B4-5	In situ vitrification test	SA-1	BA-2(98)	
199-B4-6 (analog: B4-5)	In situ vitrification test			
199-B4-7	In situ vitrification test	SA-1	BA-2(98)	

Notes: BA = biennial, A = annual, SA = semiannual, and Q = quarterly. The suffix "__-#" attached to the sampling frequency is a code for the constituent list (see Table 2). Numbers in parentheses refer to the first year of biennial sampling. An "*" indicates co-sampling between programs.

[1] Sitewide surveillance schedule (PNNL-10950) is included for informational purposes.

Table 1. Sampling and Analysis Schedule for 100-BC-5 Groundwater Project (Page 2 of 2)

Well Number	Facility Monitored/Purpose	RI/FS Round 9 (FY 96)	Proposed Round 10 (FY 97)	Sitewide Surveillance[1] (1996)
199-B4-8	Fuel storage basin cleanout percolation pit	SA-1	BA-2(97)	
199-B4-9	Reactor effluent ("pluto" crib)	SA-1	BA-2(97)	
199-B5-1	183-B water treatment plant/ Cr+6	SA-1	A-2 Q (Cr+6)	
199-B5-2	Liquid waste disposal crib	SA-1	A-2	
199-B8-6	Burial ground	SA-1	BA-2(98)	
199-B9-1	Reactor effluent ("pluto" crib)	SA-1	BA-2(97)	
199-B9-2	Reactor effluent ("pluto" crib)	SA-1	BA*-2(98)	A*
199-B9-3	Reactor effluent ("pluto" crib)	SA-1	BA-2(97)	
699-63-90	Background	SA-1		A
699-65-72 (alternate: 66-64)	Background/upgradient conditions	SA-1	BA*-2(97)	A*
699-65-83 (alternate: 67-86)	Background/upgradient conditions	SA-1	BA-2(98)	
699-66-64 (alternate: 65-72)	Background	SA-1	BA-2(97)	A*
699-67-86 (alternate: 65-83)	Background		BA-2(98)	
699-71-77	Background	SA-1	BA-2(97)	
699-72-73	Background	SA-1	A*-2	A*
699-72-88	Background			A
699-72-92	Background	SA-1	BA-2(98)	
Seep 037-1 (alternate 038-3)	Area/shoreline exposure		A-2	
Seep 039-2	Area/shoreline exposure		A-2	

Notes: BA = biennial, A = annual, SA = semiannual, and Q = quarterly. The suffix "__-#" attached to the sampling frequency is a code for the constituent list (see Table 2). Numbers in parentheses refer to the first year of biennial sampling. An "*" indicates co-sampling between programs.

[1] Sitewide surveillance schedule (PNNL-10950) is included for informational purposes.

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Table 2. Analysis Suite Codes for the 100-BC-5 Groundwater Project

Analysis/ Parameter	Constituent Code #1 (Round 9—FY96)		Constituent Code #2 (Round 10—FY97/98)	
Metals by ICP and AA (filtered and unfiltered)	Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead	Magnesium Manganese Mercury Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead	Magnesium Manganese Mercury Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc
Anions by IC	Fluoride Sulfate		Fluoride Nitrate Sulfate	
Radionuclide screening:	Gross alpha Gross beta Activity scan		Gross alpha Gross beta Activity scan	
Specific radionuclides:	Carbon-14 Strontium-90 Technetium-99 Tritium		Carbon-14 Strontium-90 Technetium-99 Tritium	
Miscellaneous parameters:	Specific conductance pH		Alkalinity	
Field parameters:	pH Specific conductance Temperature		pH Specific conductance Temperature Turbidity	