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Environmental Surveillance Master Sampling Schedule

L. E. Bisping

February 1995

Prepared for the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
by Battelle Memorial Institute

PNL-10423

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ENVIRONMENTAL SURVEILLANCE
MASTER SAMPLING SCHEDULE

L. E. Bisping

February 1995

Prepared for
the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Richland, Washington 99352

MASTER

SUMMARY

Environmental surveillance of the Hanford Site and surrounding areas is conducted by the Pacific Northwest Laboratory (PNL)^(a) for the U.S. Department of Energy (DOE). This document contains the planned 1994 schedules for routine collection of samples for the Surface Environmental Surveillance Project (SESP), Drinking Water Project, and Ground-Water Surveillance Project.

Samples are routinely collected for the SESP and analyzed to determine the quality of air, surface water, soil, sediment, wildlife, vegetation, foodstuffs, and farm products at Hanford Site and surrounding communities. In some cases, the location name is in an abbreviated form. This is due to the fact that the location name is exactly as it appears in the SESP database.

The responsibility for monitoring onsite drinking water falls outside the scope of the SESP. The Hanford Environmental Health Foundation is responsible for monitoring the nonradiological parameters as defined in the National Drinking Water Standards while PNL conducts the radiological monitoring of the onsite drinking water. PNL conducts the drinking water monitoring project concurrent with the SESP to promote efficiency and consistency, utilize expertise developed over the years, and reduce costs associated with management, procedure development, data management, quality control, and reporting.

The ground-water sampling schedule identifies ground-water sampling events used by PNL for environmental surveillance of the Hanford Site. Sampling is indicated as annual, semi-annual, quarterly, or monthly in the sampling schedule. Some samples are collected and analyzed as part of ground-water monitoring and characterization programs at Hanford (e.g. Resources Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Operational). The number of samples planned by other programs are identified in the sampling schedule by a number in the analysis column and a project designation in the Cosample column. Well sampling events may be merged to avoid redundancy in cases where sampling is planned by both environmental surveillance and another program. Thus a designation for a particular constituent to be collected by

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environmental surveillance and by another program does not necessarily indicate that separate samples will be collected. The distribution of wells sampled by the different programs is shown in Section 2.0 of Part II, Well Distribution According to Program. The pocket at the end of the document includes a plate of the Monitoring Well Locations at the Hanford Site Washington. Additional detail on the rationale for ground-water sampling is presented in Ground-Water Sample Collection and Analysis Plan for the Hanford Site Ground-Water Surveillance Project, R. W. Bryce, J. C. Evans, and K. C. Olsen, 1991, PNL-7872, Pacific Northwest Laboratory, Richland, Washington.

This schedule is subject to modification during the year in response to changes in Site operations, program requirements, and the nature of the observed results. Operational limitations such as weather, mechanical failures, sample availability, etc., may also require schedule modifications. Changes will be documented in the respective project files, but this schedule will not be reissued and, therefore, may not be an accurate record of samples collected during the year.

The purpose of these monitoring projects is to evaluate levels of radioactive and nonradioactive pollutants in the Hanford environs, as required in DOE Order 5400.1, "General Environmental Protection Program," and DOE Order 5400.5, "Radiation Protection of the Public and the Environment." The sampling methods will be the same as those described in the Environmental Monitoring Plan, United States Department of Energy, Richland Field Office, DOE/RL 91-50, U.S. Department of Energy, Richland, Washington.

Environmental and ground-water samples that are split with the Washington State Department of Health are indicated in the schedule as are environmental samples that are split with the U.S. Food and Drug Administration.

Questions can be directed to Roger Dirkes, Manager, Surface Environmental Surveillance Project; Ernest Antonio, Manager, Drinking Water Monitoring Project; and Stuart Luttrell, Manager, Ground-Water Surveillance Project.

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ABBREVIATIONS

FREQUENCY SYMBOLS USED

A	annually
BA	biannually (every 2 years)
BM	bimonthly (every 2 months)
BW	biweekly (every 2 weeks)
M	monthly
M Comp	monthly composite
Q	quarterly
Q Comp	quarterly composite
SA	semiannually
W	weekly
Numbers	The numbers in the ground-water tables indicate the estimated number of samples to be collected by other projects.

ANALYSIS SYMBOLS USED

Generally, standard elements, chemical, and isotope designations are used to indicate the analyses performed. Other analysis designations used are:

Alk	alkalinity
Alpha	total alpha activity of sample
Anions	major anions-generally Cl, F, NO ₂ , NO ₃ , SO ₄
Beta	total beta activity of sample
Comp. Only	sample analyzed as part of composite only
DO	dissolved oxygen
DS	dissolved solids
Gamma Scan	analysis of photon energy spectrum for individual photon-emitting radionuclides, including ⁶⁰ Co, ⁶⁵ Zn, ¹⁰⁶ Ru, and ¹³⁷ Cs
HTO	tritiated water (³ H ¹ H ¹⁶ O)
ICP-f	major metals by inductively coupled plasma spectrometry - samples filtered in the field
ICP-u	major metals by inductively coupled plasma spectrometry - samples unfiltered
Isotopic uranium	²³⁴ U, ²³⁵ U, ²³⁸ U
Isotopic plutonium	²³⁸ Pu, ²³⁹⁻²⁴⁰ Pu
LEP	samples analyzed by Low Energy Photon System
Lo ³ H	analytical procedure includes electrolytic enrichment

ABBREVIATIONS (contd)

NRA	not routinely analyzed
SS	suspended solids
TOC	total organic carbon
U	natural uranium
VOA	volatile organic analytes generally including carbon tetrachloride, chloroform, tetrachloroethylene, trichloroethylene, dichloroethylene, vinylchloride, benzene & toluene, ethylbenzene, xylene
WQ	water quality - nonradiological

NOTES/ABBREVIATIONS USED

The Programs and Projects listed in the Cosample column of the Ground-Water Surveillance section are as follows:

<u>Cosample</u>	<u>Program</u>	<u>Project</u>
100-BC-5	CERCLA	100-BC-5
100-FR-3	CERCLA	100-FR-3
100-HR-3	CERCLA	100-HR-3
100-KR-4	CERCLA	100-KR-4
100-NR-2	CERCLA	100-NR-2
200-BP-5	CERCLA	200-BP-5
200-UP-1	CERCLA	200-UP-1
200-ZP-1	CERCLA	200-ZP-1
300-FF-5	CERCLA	300-FF-5
300-FIRE	CERCLA	300-Area Fire Station
ERDF	CERCLA	Environmental Restoration Disposal Facility
OPER:200-E	Operational	200-East Area
OPER:200-W	Operational	200-West Area
OPER:222-S	Operational	222-S Building
OPER:400	Operational	400 Area
OPER:600	Operational	600 Area
OPER:B-Plant	Operational	B-Plant
OPER:B-POND	Operational	B-Pond
OPER:Gable Mt.	Operational	Gable Mountain Pond
OPER:K	Operational	100-K Area
OPER:PUREX	Operational	PUREX Plant
OPER:U-14	Operational	U-14 Crib

ABBREVIATIONS (contd)

<u>Cosample</u>	<u>Program</u>	<u>Project</u>
OPER:U-Plant	Operational	U-Plant
OPER:U1/2	Operational	U-1/U-2 Cribs
OPER:U14	Operational	U-14 Crib
OPER:U17	Operational	U-17 Crib
100-D Pond	RCRA	100-D Pond
1301	RCRA	1301-N Liquid Waste Disposal Facility
1324	RCRA	1324-N/NA site
1325	RCRA	1325-N Liquid Waste Disposal Facility
183-H	RCRA	183-H Solar Evaporation Basins
2101-M POND	RCRA	2101-M Pond
216-A-10	RCRA	216-A-10 Crib
216-A-29	RCRA	216-A-29 Ditch
216-A-36B	RCRA	216-A-36B Crib
216-B-3	RCRA	216-B-3 Pond System
216-B-63	RCRA	216-B-63 Trench
216-S-10	RCRA	216-S-10 Pond and Ditch
216-U-12	RCRA	216-U-12 Crib
300-TRENCH	RCRA	300 Area Process Trenches
LERF	RCRA	200-East Area Liquid Effluent Retention Facility
LLWMA-1	RCRA	Low-Lever Waste Management Area 1
LLWMA-2	RCRA	Low-Lever Waste Management Area 2
LLWMA-3	RCRA	Low-Lever Waste Management Area 3
LLWMA-4	RCRA	Low-Lever Waste Management Area 4
LLWMA-5	RCRA	Low-Lever Waste Management Area 5
NRDWL	RCRA	Non-Radioactive Dangerous Waste Landfill
SST-A-AX	RCRA	Single Shell Tank Waste Management Area A-AX
SST-B-BY-BX	RCRA	Single Shell Tank Waste Management Area B-BY-BX
SST-C	RCRA	Single Shell Tank Waste Management Area C
SST-S-SX	RCRA	Single Shell Tank Waste Management Area S-SX
SST-T	RCRA	Single Shell Tank Waste Management Area T

ABBREVIATIONS (contd)

<u>Cosample</u>	<u>Program</u>	<u>Project</u>
SST-TX-TY	RCRA	Single Shell Tank Waste Management Area TX-TY
SST-U	RCRA	Single Shell Tank Waste Management Area U
SWL	RCRA	Solid Waste Landfill
DOH	Washington State Department of Health	

PORTABLE INSTRUMENT SYMBOLS USED

BICRON	Microrem meter
GM	Geiger-Müller counter
PIC	Pressurized Ionization Chamber

PART I. HANFORD SURFACE ENVIRONMENTAL SURVEILLANCE

1.0 AIR SURVEILLANCE

1.1 AIR - PARTICULATE FILTER

Location	Individual Samples			Composite Group	Composited Sample		
	Location Number (a)	Frequency	Analyses		Frequency	Analyses	
<u>Onsite</u>							
100 K Area	1	BW	Beta, Alpha	100 Areas	Q	Gamma Scan	
100 N-1325 Crib	2	BW	Beta, Alpha		A	90Sr, Pu(b)	
100 D Area	3	BW	Beta, Alpha				
N of 200 E	4	BW	Beta	N of 200-E	A	Gamma Scan	
E of 200 E	5	BW	Beta, Alpha	E of 200-E	Q	Gamma Scan	
					SA	90Sr, Pu(b), U(c)	
200 ESE	6	BW	Beta, Alpha	200 ESE	Q	Gamma Scan	
					SA	90Sr, Pu(b), U(c), 241Am	
S of 200-E	7	BW	Beta, Alpha	S of 200-E	Q	Gamma Scan	
					SA	90Sr, Pu(b), U(c)	
B Pond	8	BW	Beta, Alpha	B Pond	Q	Gamma Scan	
B Pond	8	BW	Comp. Only		SA	90Sr, Pu(b), U(c)	
Army Loop Camp	9	BW	Beta, Alpha	200 W South and East	Q	Gamma Scan	
200 Tel. Exchange	10	BW	Beta, Alpha		A	90Sr, Pu(b), U(c)	
200 W SE	11	BW	Beta, Alpha	200 West	Q	Gamma Scan	
200 W SE	11	BW	Comp. Only		A	90Sr, Pu(b), U(c)	
300 Water Intake	12	BW	Beta	300 Area	Q	Gamma Scan	
300 South Gate	13	BW	Beta, Alpha		A	90Sr, Pu(b), U(c)	
300 Trench	14	BW	Beta, Alpha	300 NE	Q	Gamma Scan	
300 NE	15	BW	Beta, Alpha		A	90Sr, Pu(b), U(c)	
400 E	16	BW	Beta, Alpha	400 Area	Q	Gamma Scan	
400 W	17	BW	Beta, Alpha		A	90Sr, Pu(b)	
400 S	18	BW	Beta, Alpha				
400 N	19	BW	Beta, Alpha				
Wye Barricade	20	BW	Beta, Alpha	Wye Barricade	Q	Gamma Scan	
Wye Barricade	20	BW	Comp. Only		A	90Sr, Pu(b), U(c), 241Am	
<u>Perimeter</u>							
Ringold Met Tower	21	BW	Beta, Alpha	Ringold Met Tower	Q	Gamma Scan	
					A	90Sr, Pu(b)	
W End of Fir Rd	22	BW	Beta, Alpha	W End of Fir Road	Q	Gamma Scan	
W End of Fir Rd	22	BW	Comp. Only		A	90Sr, Pu(b), U(c), 241Am	
Dogwood Met Tower	23	BW	Beta, Alpha	Dogwood Met Tower	Q	Gamma Scan	
Dogwood Met Tower	23	BW	Comp. Only		A	90Sr, Pu(b), U(c), 241Am	

1.1 AIR - PARTICULATE FILTER (contd)

Location	Individual Samples			Composited Sample		
	Location Number (a)	Frequency	Analyses	Composite Group	Frequency	Analyses
<u>Perimeter</u>						
Byers Landing	24	BW	Beta, Alpha	Byers Landing	Q A	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Battelle Complex	25	BW	Beta	Battelle Complex	A	Gamma Scan
Horn Rapids Substa	26	BW	Beta, Alpha	Prosser Barricade	Q	Gamma Scan 90Sr, Pu(b), U(c)
Prosser Barricade	27	BW	Comp. Only		A	
Yakima Barricade	28	BW	Beta, Alpha	Yakima Barricade	Q	Gamma Scan 90Sr, Pu(b)
Yakima Barricade	28	BW	Comp. Only		A	
Wahluke Slope	29	BW	Beta, Alpha	Wahluke Slope	Q	Gamma Scan 90Sr, Pu(b)
Wahluke Slope	29	BW	Comp. Only		A	
<u>Community</u>						
Basin City School(d)	30	BW	Beta, Alpha	Basin City School	Q	Gamma Scan 90Sr, Pu(b), U(c)
Basin City School(d)	30	BW	Comp. Only		A	
Leslie Groves-Rchlnd(d)	31	BW	Beta, Alpha	Leslie Groves-Richland	Q	Gamma Scan 90Sr, Pu(b), U(c)
Leslie Groves-Rchlnd(d)	31	BW	Comp. Only		A	
Pasco(d)	32	BW	Beta	Tri-Cities	Q	Gamma Scan 90Sr, Pu(b)
Kennewick-Ely Street(d)	33	BW	Beta, Alpha		A	
Benton City	34	BW	Beta	Benton City	A	Gamma Scan
Edwin Markham School(d)	35	BW	Beta, Alpha	Edwin Markham School	Q A	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Mattawa	36	BW	Beta	Mattawa	A	Gamma Scan
Othello	37	BW	Beta	Othello	A	Gamma Scan
<u>Distant</u>						
Sunnyside	38	BW	Beta, Alpha	Sunnyside	Q	Gamma Scan 90Sr, Pu(b), U(c)
Sunnyside	38	BW	Comp. Only		A	
Yakima	39	BW	Beta, Alpha	Yakima	Q A	Gamma Scan 90Sr, Pu(b), U(c), 241Am

(a) Refer to Figure 1.1, Air Sampling Locations.

(b) Isotopic plutonium.

(c) Isotopic uranium.

(d) Community-Operated Environmental Surveillance Station.

1.2 AIR - GASES AND VAPOR

<u>Location</u>	<u>Location Number^(a)</u>	<u>Fre- quency</u>	<u>Analyses</u>	<u>Fre- quency^(b)</u>	<u>Analyses</u>	<u>Fre- quency</u>	<u>Analyses</u>
<u>Onsite</u>							
100 K Area	1					M	³ H (as HT0)
100 N-1325 Crib	2					M	³ H (as HT0)
200 ESE	6			Q Comp	129 _I	M	³ H (as HT0)
200 Tel. Exchange	10					M	³ H (as HT0)
300 South Gate	13					M	³ H (as HT0)
300 Trench ^(c)	14					M	³ H (as HT0)
300 NE	15					M	³ H (as HT0)
400 E	16					M	³ H (as HT0)
<u>Perimeter</u>							
Ringold Met Tower	22	BW	131 _I	Q Comp	129 _I	M	³ H (as HT0)
Dogwood Met Tower	24					M	³ H (as HT0)
Byers Landing	25	BW	131 _I	Q Comp	129 _I	M	³ H (as HT0)
Prosser Barricade	28					M	³ H (as HT0)
Wahlake Slope	30					M	³ H (as HT0)
<u>Community</u>							
Basin City School ^(d)	31					M	³ H (as HT0)
Leslie Groves-Rchld ^(d)	32					M	³ H (as HT0)
Edwin Markham School ^(d)	36	BW	131 _I			M	³ H (as HT0)
<u>Distant</u>							
Sunnyside	38					M	³ H (as HT0)
Yakima	39	BW	131 _I	Q Comp	129 _I	M	³ H (as HT0)

(a) Refer to Figure 1.1, Air Sampling locations.

(b) Samples are collected monthly and composited for quarterly analyses.

(c) Two Silica Gel samples are collected from this location. One is submitted to the analytical lab on the date it is collected and the second is archived for one month and then submitted to the analytical lab.

(d) Community-Operated Environmental Surveillance Station.

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Figure 1.1. Air Sampling Locations

2.0 SURFACE-WATER SURVEILLANCE

2.1 WATER - COLUMBIA RIVER

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
Priest Rapids Dam	Cumulative	M Comp ^(b)	Alpha, Beta, Lo ³ H, Gamma Scan, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c) , DOH ^(d)
	Particulate (filter)	M Comp ^(e) Q Comp	Gamma Scan Pu ^(f)
	Soluble (resin)	M Comp ^(e) Q Comp	Gamma Scan ¹²⁹ I, Pu ^(f)
Vernita	Grab	Q	WQ-NASQAN ^(g) : Temp, DO, Turbidity, pH, Fecal Coliform, SS, DS, Cond, Hardness as CaCO ₃ , P, Cr, N-Kjeldahl, TOC, Fe, NH ₃ -N
	Grab (Transect) ^(h)	Q	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
100 N	Grab (Transect) ⁽ⁱ⁾	A	Alpha, Beta, Lo ³ H, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c) , Gamma Scan, Volatile Organics, ICP-u, Anions, DOH ^(j)
100 F	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
Hanford Townsite	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c) , Volatile Organics, ICP-u, Anions
300 Area	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
Richland Pump house	Cumulative	W	Alpha, Beta
	Cumulative	M Comp ^(b)	Alpha, Beta, Lo ³ H, Gamma Scan, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c)
	Particulate (filter)	M Comp ^(e) Q Comp	Gamma Scan Pu ^(f)
	Soluble (resin)	M Comp ^(e) Q Comp	Gamma Scan ¹²⁹ I, Pu ^(f)
	Grab (Transect) ⁽ⁱ⁾	Q	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
	Grab	Q	WQ-NASQAN ^(g) : Temp, DO, Turbidity, pH, Fecal Coliform, SS, DS, Cond, Hardness as CaCO ₃ , P, Cr, N-Kjeldahl, TOC, Fe, NH ₃ -N

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Composite of weekly samples.

(c) Isotopic uranium.

(d) Duplicate samples with the Washington State Department of Health (January and June only).

(e) Composite of biweekly sample.

(f) Isotopic plutonium.

(g) Numerous water quality (WQ) analyses are performed by the United States Geological Survey (USGS) in conjunction with the National Stream Quality Accounting Network (NASQAN) Program.

(h) 4 samples collected along cross-section.

(i) 10 samples collected along cross-section.

(j) Duplicate samples with the Washington State Department of Health collected at three sample sites along transect.

2.2 RIVERBANK SPRINGS

Location ^(a)	Sample Type	Frequency	Analyses
100-B Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-K Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-N Spring 8-13	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions, DOH ^(d)
100-D Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-H Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-F Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
Hanford Spring 28-2	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, ^{129}I , Gamma Scan, Volatile Organics, ICP-u, Anions
300 Area Spring 42-2	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, ^{129}I , Gamma Scan, Volatile Organics, ICP-u, Anions, DOH ^(d)

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Collected twice a year during low river flow season.

(c) Isotopic uranium.

(d) Duplicate sample with the Washington State Department of Health.

2.3 ONSITE PONDS

Location ^(a)	Sample Type	Frequency	Analyses
West Lake	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(b)}$, Gamma Scan
B Pond Extension	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , Gamma Scan
FFTF Pond	Grab	Q	Alpha, Beta, ^3H , Gamma Scan

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Isotopic uranium.

2.4 OFFSITE WATER SYSTEMS

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
Ringold Hatchery	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan
Mathews Corner	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan
White Bluffs-Shallow	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan, DOH ^(c)
White Bluffs-Deep	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan, DOH ^(c)
Alexander Farm	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan, DOH ^(c)
Riverview Canal	Grab	3 (May-Sept)	Alpha, Beta, ^3H , ^{90}Sr , $\text{U}^{(b)}$, Gamma Scan

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Isotopic uranium.

(c) Duplicate samples with the Washington State Department of Health.

2.5 ONSITE DRINKING WATER

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
100-B Area-River	Grab	Q	Alpha, Beta, Lo ^3H , ^{90}Sr , Gamma Scan
100-D Area-River	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan, DOH ^(b)
Yakima Barricade	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
FFTF	Grab	M	^3H
		Q	Alpha, Beta, ^{90}Sr , Gamma Scan, DOH ^(b)
		A	^{129}I
300 Area	Cumulative	Q Comp ^(c)	Alpha, Beta, Lo ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan
Firing Range	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
ALE Hdqtrs	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Duplicate sample collected 2nd quarter with Washington State Department of Health.

(c) Composite of monthly cumulative samples.

(d) Isotopic uranium.

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Figure 2.1. Surface Water and Drinking Water Sampling Locations

3.0 FOODSTUFFS AND FARM PRODUCTS

3.1 WHOLE MILK

<u>Location^(a)</u>	<u>Frequency</u>	<u>Analyses</u>
East Wahluke Area ^(b)	Q SA	^3H , ^{90}Sr , Gamma Scan ^{129}I
Sagemoor Composite ^(b)	M Q SA	^3H , Gamma Scan ^{90}Sr ^{129}I
Sunnyside Area	Q SA	^3H , ^{90}Sr , Gamma Scan ^{129}I

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.
(b) Sample composited from three sources in each area.

3.2 POULTRY AND EGGS

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
Sagemoor Area	Chicken	A	^{90}Sr , Gamma Scan, DOH ^(b)
	Eggs	A	^{90}Sr , Gamma Scan, DOH ^(b)
Sunnyside Area	Chicken	A	^{90}Sr , Gamma Scan, DOH ^(b)
	Eggs	A	^{90}Sr , Gamma Scan, DOH ^(b)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.
(b) Duplicate samples with the Washington State Department of Health.

3.3 BEEF

<u>Location^(a)</u>	<u>Frequency</u>	<u>Analyses</u>
Sagemoor Area	A	^{90}Sr , Gamma Scan
Riverview Area	A	^{90}Sr , Gamma Scan, DOH ^(b)
Sunnyside Area	A	^{90}Sr , Gamma Scan, DOH ^(b)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.
(b) Duplicate samples with the Washington State Department of Health.

3.4 LEAFY VEGETABLES

<u>Location^(a)</u>	<u>Frequency^(b)</u>	<u>Analyses</u>
East Wahluke Area	BA ^(c)	⁹⁰ Sr, Gamma Scan
Sagemoor Area	A	⁹⁰ Sr, Gamma Scan, ¹²⁹ I-LEP
Riverview Area	A	⁹⁰ Sr, ⁹⁹ Tc, Gamma Scan, FDA ^(d) , DOH ^(e)
Sunnyside Area	A	⁹⁰ Sr, Gamma Scan, FDA ^(d) , DOH ^(e)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.

(b) Three samples collected within each area.

(c) Biannual samples will next be collected in 1996.

(d) Duplicate samples sent to U.S. Food and Drug Administration.

(e) Duplicate samples with the Washington State Department of Health.

3.5 VEGETABLES

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency^(b)</u>	<u>Analyses</u>
Riverview Area	Potatoes	A	⁹⁰ Sr, Gamma Scan, FDA ^(c)
	Tomatoes	A	³ H, ⁹⁰ Sr, Gamma Scan, DOH ^(d)
	Carrots	A	⁹⁰ Sr, Gamma Scan
Horn Rapids Area	Potatoes	A	⁹⁰ Sr, ⁹⁹ Tc, Pu ^(e) , U ^(f) , Gamma Scan, DOH ^(d)
Sagemoor Area	Potatoes	A	⁹⁰ Sr, Pu ^(e) , Gamma Scan, FDA ^(c)
Sunnyside Area	Potatoes	A	⁹⁰ Sr, Pu ^(e) , U ^(f) , ⁹⁹ Tc, Gamma Scan, FDA ^(c)
Harrah/Wapato Area	Potatoes	A	⁹⁰ Sr, Pu ^(e) , Gamma Scan, DOH ^(g)
	Tomatoes	A	³ H, ⁹⁰ Sr, Gamma Scan, DOH ^(g)
East Wahluke Area	Potatoes	BA ^(h)	⁹⁰ Sr, Gamma Scan

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.

(b) Three samples of each type collected within each area.

(c) Duplicate samples sent to U.S. Food and Drug Administration.

(d) Duplicate samples with the Washington State Department of Health.

(e) Isotopic plutonium.

(f) Isotopic uranium.

(g) Samples provided to PNL by Washington State Department of Health.

(h) Biannual samples will next be collected in 1996.

3.6 FRUIT

Location ^(a)	Sample Type	Frequency ^(b)	Collection Period	Analyses
Sagemoor Area	Apples	A	September	^3H , ^{90}Sr , $\text{Pu}^{(c)}$, Gamma Scan, FDA ^(d)
	Cherries	A	June	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	A	September	^3H , ^{90}Sr , Gamma Scan, ^{129}I -LEP
Cold Creek Area	Apples	BA ^(f)	September	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	BA ^(f)	September	^3H , ^{90}Sr , Gamma Scan
Sunnyside Area	Apples	A	September	^3H , ^{90}Sr , $\text{Pu}^{(c)}$, Gamma Scan
	Cherries	A	June	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	A	September	^3H , ^{90}Sr , Gamma Scan, ^{129}I -LEP
Riverview Area	Apples	A	September	^3H , ^{90}Sr , Gamma Scan, FDA ^(d)
	Concord Grapes ^(e)	A	September	^3H , ^{90}Sr , Gamma Scan, DOH ^(g)
	Melons	A	August	^3H , ^{90}Sr , Gamma Scan, DOH ^(g)
Ringold Area	Apples	A	September	^3H , ^{90}Sr , $\text{Pu}^{(c)}$, Gamma Scan
	Cherries	A	June	^3H , ^{90}Sr , Gamma Scan
Mattawa Area	Apples	BA ^(f)	September	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	BA ^(f)	September	^3H , ^{90}Sr , Gamma Scan
Harrah/Wapato Area	Concord Grapes ^(e)	A	September	^3H , ^{90}Sr , Gamma Scan, ^{129}I -LEP, DOH ^(h)
	Melons	A	August	^3H , ^{90}Sr , Gamma Scan, DOH ^(h)
East Wahluke Area	Apples	BA ^(f)	September	^3H , ^{90}Sr , Gamma Scan, FDA ^(d)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.

(b) Three samples of each type collected within each area.

(c) Isotopic plutonium.

(d) Duplicate samples sent to the U.S. Food and Drug Administration.

(e) Concord grapes preferred; table grapes acceptable if concord grapes are unavailable.

(f) Biannual samples will next be collected in 1996.

(g) Duplicate samples with the Washington State Department of Health.

(h) Samples provided to PNL by Washington State Department of Health.

3.7 WINE

Location ^(a)	Sample Type	Frequency ^(b)	Collection Period	Analyses
Columbia Basin	White	A	December	^3H , Gamma Scan, DOH ^(c)
	Red	A	December	^3H , Gamma Scan, DOH ^(c)
Yakima Valley	White	A	December	^3H , Gamma Scan, DOH ^(c)
	Red	A	December	^3H , Gamma Scan, DOH ^(c)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.

(b) Three samples of each type collected within each area.

(c) Duplicate samples with the Washington State Department of Health.

3.8 WHEAT AND ALFALFA

Location ^(a)	Sample Type	Frequency ^(b)	Collection Period	Analyses
East Wahluke Area	Wheat	BA ^(c)	July	⁹⁰ Sr, Gamma Scan
	Alfalfa	BA ^(c)	May	⁹⁰ Sr, Gamma Scan
Sagemoor Area	Wheat	A	July	⁹⁰ Sr, Pu ^(d) , Gamma Scan
	Alfalfa	A	July	⁹⁰ Sr, Gamma Scan, FDA ^(e)
Riverview Area	Wheat	A	July	⁹⁰ Sr, Gamma Scan
	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan, FDA ^(e)
Benton City Area	Wheat	A	July	⁹⁰ Sr, Gamma Scan
	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan
Sunnyside Area	Wheat	A	July	⁹⁰ Sr, Pu ^(d) , Gamma Scan
	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan, DOH ^(f)
Battelle Field	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan, DOH ^(f)
Horn Rapids Area	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan, FDA ^(e)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.

(b) Three samples of each type collected within each area.

(c) Biannual samples will next be collected in 1996.

(d) Isotopic plutonium.

(e) Duplicate samples sent to the U.S. Food and Drug Administration.

(f) Duplicate samples with the Washington State Department of Health.

Figure 3.1. Food and Farm Product Sampling Locations

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4.0 WILDLIFE

4.1 AQUATIC BIOTA

Location(a)	Species/ Sample	Number of Samples	Fre- quency	Collection Period	Analyses
100 N Area to 100 D Area	Whitefish				
	Fillet	10	1/2 yr	January	^{90}Sr , Gamma Scan, $\text{U}^{(b)}$
	Carcass	10	1/2 yr	January	^{90}Sr , $\text{U}^{(b)}$
	Carp				
	Fillet	5	1/2 yr ^(c)	June	^{90}Sr , Gamma Scan, $\text{U}^{(b)}$
	Carcass	5	1/2 yr ^(c)	June	^{90}Sr , $\text{U}^{(b)}$
100 F Slough	Bass				
	Fillet	5	1/3 yr ^(c)	May-June	^{90}Sr , Gamma Scan, $\text{U}^{(b)}$
	Carcass	5	1/3 yr ^(c)	May-June	^{90}Sr , $\text{U}^{(b)}$
Hanford Slough	Bass				
	Fillet	5	1/3 yr ^(c)	May-June	^{90}Sr , Gamma Scan, $\text{U}^{(b)}$
	Carcass	5	1/3 yr ^(c)	May-June	^{90}Sr , $\text{U}^{(b)}$
300 Area	Whitefish				
	Fillet	10	A	November	^{90}Sr , $\text{U}^{(b)}$, ^{99}Tc , Gamma Scan, DOH ^(d)
	Carcass	10	A	November	^{90}Sr , $\text{U}^{(b)}$
	Carp				
	Fillet	5	1/2 yr ^(c)	June	^{90}Sr , Gamma Scan, $\text{U}^{(b)}$
	Carcass	5	1/2 yr ^(c)	June	^{90}Sr , $\text{U}^{(b)}$
	Clam				
	Whole Body	1	A	Aug-Sept	^{90}Sr , $\text{U}^{(b)}$, ^{99}Tc , Gamma Scan, DOH ^(d)
	Shell	1	A	Aug-Sept	^{90}Sr
Rocky Reach	Whitefish				
	Fillet	10	1/2 yr	November	^{90}Sr , $\text{U}^{(b)}$, ^{99}Tc , Gamma Scan, DOH ^(d)
	Carcass	10	1/2 yr	November	^{90}Sr , $\text{U}^{(b)}$
Vantage	Bass				
	Fillet	10	1/3 yr ^(c)	June	^{90}Sr , $\text{U}^{(b)}$, Gamma Scan
	Carcass	10	1/3 yr ^(c)	June	^{90}Sr , $\text{U}^{(b)}$
	Carp				
	Fillet	10	1/2 yr ^(c)	June	^{90}Sr , $\text{U}^{(b)}$, Gamma Scan
	Carcass	10	1/2 yr ^(c)	June	^{90}Sr , $\text{U}^{(b)}$

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Isotopic uranium.

(c) Specified samples are collected once every 2 or 3 years with collection occurring in 1996, unless otherwise stated.

(d) Duplicate samples with the Washington State Department of Health.

4.2 GEESE

<u>Location^(a)</u>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area to 100 D Area	Western Canadian Goose			
	Muscle	5	August	⁹⁰ Sr, Gamma Scan
	Bone	5	August	⁹⁰ Sr
Hanford Townsite	Western Canadian Goose			
	Muscle	5	August	⁹⁰ Sr, Gamma Scan
	Bone	5	August	⁹⁰ Sr
Vantage ^(b)	Western Canadian Goose			
	Muscle	10	August	⁹⁰ Sr, U ^(c) , ⁹⁹ Tc, Gamma Scan
	Bone	10	August	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) As available.

(c) Isotopic uranium.

4.3 GAME BIRDS

<u>Location^(a)</u>	<u>Species/^(b) Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
Near 100-N	Pheasant			
	Muscle	3	January	⁹⁰ Sr, Gamma Scan
	Liver	3	January	NRA ^(c)
	Bone	3	January	⁹⁰ Sr
100 D Area to 100 H Area	Pheasant			
	Muscle	4	January	Gamma Scan
	Liver	4	January	NRA ^(c)
	Bone	4	January	⁹⁰ Sr
100 H Area to 100 F Area	Pheasant			
	Muscle	6	January	Gamma Scan, DOH ^(d)
	Liver	6	January	NRA ^(c)
	Bone	6	January	⁹⁰ Sr
Harrah/Wapato Area	Pheasant			
	Muscle	1	January	Gamma Scan, DOH ^(e)
	Bone	1	January	⁹⁰ Sr, DOH ^(e)
Yakima County ^(f)	Pheasant			
	Muscle	10	September	⁹⁰ Sr, U ^(g) , Gamma Scan
	Liver	10	September	Pu ^(h)
	Bone	10	September	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Pheasant preferred; chukar or quail acceptable if pheasant is unavailable.

(c) Not Routinely Analyzed (NRA) - Retain liver and bone to be analyzed for isotopic plutonium and ⁹⁰Sr, respectively, if ¹³⁷Cs exceeds 100 pCi/g (wet weight) in muscle.

(d) Duplicate samples with the Washington State Department of Health.

(e) Samples provided to PNL by Washington State Department of Health.

(f) Background samples to be collected at least every 5 years and will next be collected in 1999.

(g) Isotopic uranium.

(h) Isotopic plutonium.

4.4 DEER

<u>Location^(a)</u>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area	Mule			
	Muscle	2	December	Gamma Scan
	Liver	2	December	Pu ^(b)
	Bone	2	December	⁹⁰ Sr
200 Ponds	Mule			
	Muscle	2	December	Gamma Scan
	Liver	2	December	Pu ^(b)
	Bone	2	December	⁹⁰ Sr
Road Kill at Onsite Locations ^(c)	Mule			
	Muscle	6	Annual	Gamma Scan
	Liver	6	Annual	Pu ^(b)
Background ^(c) ,	Mule			
	Muscle	2 ^(d)	October	Gamma Scan
	Liver	2 ^(d)	October	Pu ^(b)
	Bone	2 ^(d)	October	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Isotopic plutonium.

(c) As available, according to location.

(d) One west side deer will be provided to PNL by Washington State Department of Health.

4.5 RABBITS

<u>Location^(a)</u>	<u>Type/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area	Cottontail			
	Muscle	4	April	Gamma Scan, DOH ^(b)
	Liver	4	April	Pu ^(c)
	Bone	4	April	⁹⁰ Sr
200 E Area	Jack Rabbit			
	Muscle	4	April	Gamma Scan
	Liver	4	April	Pu ^(c)
	Bone	4	April	⁹⁰ Sr
200 West	Jack Rabbit			
	Muscle	4	April	Gamma Scan
	Liver	4	April	Pu ^(c)
	Bone	4	April	⁹⁰ Sr
North 300 Area	Cottontail			
	Muscle	4	April	Gamma Scan
	Liver	4	April	Pu ^(c)
	Bone	4	April	⁹⁰ Sr

4.5 RABBITS (contd)

<u>Location</u> ^(a)	<u>Type/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
Boardman, Oregon ^(d)	Jack Rabbit			
	Muscle	10	April	Gamma Scan, DOH ^(b)
	Liver	10	April	Pu ^(c)
	Bone	10	April	⁹⁰ Sr
Boardman, Oregon ^(d)	Cottontail			
	Muscle	10	April	Gamma Scan, DOH ^(b)
	Liver	10	April	Pu ^(c)
	Bone	10	April	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Duplicate samples with the Washington State Department of Health.

(c) Isotopic plutonium.

(d) Background samples to be collected at least every 5 years and will next be collected in 1995.

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Figure 4.1. Wildlife Sampling Areas

5.0 SOIL AND VEGETATION

5.1 SOIL

Location ^(a)	Frequency	Collection Period	Analyses
100 K Area	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
NE of 100 N Area	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
E of 100 N Area	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), DOH ^(d)
100N Shore Above HGP	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
100N Spring Shoreline	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Above 100D Pumphouse	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
100 Area Fire Stat	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
200 ENC	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
E of 200 E	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
200 ESE	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ²⁴¹ Am
S of 200 E	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
SW of B/C Cribs	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ²⁴¹ Am
E of 200 W Gate	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ²⁴¹ Am, DOH ^(d)
S of 200 W	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Rattlesnake Springs	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Yakima Barricade	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
400 E	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
SE Side of FFTF	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
North 300 Area	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
South 300 Area	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Hanford Townsite	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Wye Barricade	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Prosser Barricade	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
ALE Field Lab	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
N End Vernita Bridge	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Wahluke Slope	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Berg Ranch	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Ringold Area	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
W End of Fir Road	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Taylor Flats No. 2	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Sagemoor Farm	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ²⁴¹ Am, DOH ^(d)
Byers Landing	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Riverview-Harris	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), DOH ^(d)
Benton City	1/3 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Sunnyside	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ²⁴¹ Am
Mc Nary Dam	1/5 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Walla Walla	1/5 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Wash Tucna	1/5 yr ^(e)	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)
Yakima	A	July	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c)

(a) Refer to Figure 5.1, Soil and Vegetation Sampling Locations.

(b) ²³⁵U-LEP, ²³⁸U-LEP.

(c) Isotopic plutonium.

(d) Duplicate samples with the Washington State Department of Health.

(e) Specified samples are collected once every 3 or 5 years, respectively. The next samples for 1/3-year and 1/5-year locations will be 1996 and 1995, respectively.

5.2 VEGETATION

<u>Location(a)</u>	<u>Fre- quency</u>	<u>Collection Period</u>	<u>Analyses</u>
100 K Area	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)
NE of 100 N Area	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)
E of 100 N Area	A	July	Gamma Scan, ^{90}Sr , U, Pu(b), DOH(c)
100N Spring Shoreline	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)
E of 200 W Gate	A	July	Gamma Scan, ^{90}Sr , U, Pu(b), DOH(c)
300 Area Shoreline	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)
Hanford Townsite	1/3 yr(d)	July	Gamma Scan, ^{90}Sr , U, Pu(b)
Hanfrd Twnsite HRM28	A	July	Gamma Scan, ^{90}Sr , U, Pu(b), ^{99}Tc
Ringold	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)
Sagemoor Farm	A	July	Gamma Scan, ^{90}Sr , U, Pu(b), DOH(c)
Byers Landing	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)
Riverview-Harris	A	July	Gamma Scan, ^{90}Sr , U, Pu(b), DOH(c)
Sunnyside	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)
Yakima	A	July	Gamma Scan, ^{90}Sr , U, Pu(b)

(a) Refer to Figure 5.1, Soil and Vegetation Sampling Locations.

(b) Isotopic plutonium.

(c) Duplicate samples with the Washington State Department of Wildlife.

(d) Specified samples are collected once every 3 years and will next be collected in 1996.

Figure 5.1. Soil and Vegetation Sampling Locations

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6.0 SEDIMENT

<u>Location</u> ^(a)	<u>Frequency</u>	<u>Analyses</u>
<u>River</u>		
Mc Nary Dam		
McNary Oregon Shore	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
McNary-1/3 OR. Shore	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
McNary-2/3 OR. Shore	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
McNary-Wash. Shore	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
Priest Rapids Dam		
PRD-Grant County	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
PRD-1/3 Grant Shore	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
PRD-2/3 Grant Shore	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
PRD-Yakima Cnty Shor	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
White Bluffs Slough	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u
100 F Slough	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u
Hanford Slough	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u
Richland	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u
<u>Springs</u>		
100-B Spring	A	Gamma Scan, ⁹⁰ Sr, U(b), ICP-u
100 N Spring 8-13	A	Gamma Scan, ⁹⁰ Sr, U(b), ICP-u
Hanford Spring 28-2	A	Gamma Scan, ⁹⁰ Sr, U(b), ICP-u
300 Area Spring 42-2	A	Gamma Scan, ⁹⁰ Sr, U(b), ICP-u

(a) Refer to Figure 6.1, Sediment Sampling Locations.

(b) ²³⁵U-LEP, ²³⁸U-LEP.

(c) Isotopic plutonium.

(d) Duplicate samples with the Washington State Department of Health.

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Figure 6.1. Sediment Sampling Locations

7.0 EXTERNAL RADIATION

7.1 THERMOLUMINESCENT DOSIMETERS (TLDs)

7.1.1 Terrestrial Locations

<u>Location</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
<u>Onsite^(a)</u>				
100 K Area ^(b)	1	Q	Ambient Dose	
100 N-WPPSS Area	2	Q	Ambient Dose	
100 D Area ^(b)	3	Q	Ambient Dose	
N of 200 E ^(b)	4	Q	Ambient Dose, DOH ^(c)	
200 Tel. Exchange ^(b)	5	Q	Ambient Dose, DOH ^(c)	
200 W SE ^(b)	6	Q	Ambient Dose	
S of 200 E ^(b)	7	Q	Ambient Dose, DOH ^(c)	
B Pond ^(b)	8	Q	Ambient Dose	
E of 200 E ^(b)	9	Q	Ambient Dose, DOH ^(c)	
200 ESE ^(b)	10	Q	Ambient Dose, DOH ^(c)	
3705 Bldg. 300 Area	11	Q	Ambient Dose	
300 Water Intake ^(b)	12	Q	Ambient Dose	
300 Southwest Gate	13	Q	Ambient Dose	
300 South Gate ^(b)	14	Q	Ambient Dose	
300 Trench ^(b)	15	Q	Ambient Dose	
300 NE ^(b)	16	Q	Ambient Dose	
400 E ^(b)	17	Q	Ambient Dose	
400 W ^(b)	18	Q	Ambient Dose	
400 S ^(b)	19	Q	Ambient Dose	
400 N ^(b)	20	Q	Ambient Dose	
Wye Barricade ^(b)	21	Q	Ambient Dose, DOH ^(c)	
US Ecology NE Corner	22	Q	Ambient Dose, DOH ^(c)	
US Ecology SE Corner	23	Q	Ambient Dose, DOH ^(c)	
US Ecology NW Corner	24	Q	Ambient Dose, DOH ^(c)	
US Ecology SW Corner	25	Q	Ambient Dose, DOH ^(c)	
WPPSS 1; S of WNP 2	26	Q	Ambient Dose, DOH ^(c)	
<u>Perimeter^(d)</u>				
Ringold Met Tower ^(b)	1	Q	Ambient Dose	
Byers Landing ^(b)	2	Q	Ambient Dose	
Battelle Complex ^(b)	3	Q	Ambient Dose	
WPPSS 4; WPS Warehse	4	Q	Ambient Dose, DOH ^(c)	
WPPSS 8; Fir Road	5	Q	Ambient Dose, DOH ^(c)	
<u>Community^(d)</u>				
Basin City School ^{(b)(e)}	6	Q	Ambient Dose	PIC
Pasco ^{(b)(e)}	7	Q	Ambient Dose	
Kennewick-Ely Street ^{(b)(e)}	8	Q	Ambient Dose	
Benton City ^(b)	9	Q	Ambient Dose	
Mattawa ^(b)	10	Q	Ambient Dose	
Othello ^(b)	11	Q	Ambient Dose	
Edwin Markham School ^{(b)(e)}	12	Q	Ambient Dose	PIC
Leslie Groves Rchld ^{(b)(e)}	13	Q	Ambient Dose	PIC

7.1.1 Terrestrial Locations (contd)

<u>Location</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
<u>Distant</u> ^(d)				
Sunnyside ^(b)	14	Q	Ambient Dose, DOH ^(c)	
Yakima ^(b)	15	Q	Ambient Dose, DOH ^(c)	

(a) Refer to Figure 7.1, Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site.

(b) Located at air sampling station.

(c) Washington State Department of Health TLDs also at these locations.

(d) Refer to Figure 7.2, Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites.

(e) Community-Operated Environmental Surveillance Station.

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Figure 7.1. Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site

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Figure 7.2. Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites

7.1.2 Columbia River Shoreline Locations

<u>Location^(a)</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>
Above 100 B Area	1	Q	Ambient Dose
Below 100 B Ret Basin	2	Q	Ambient Dose
Above 1K Boat Ramp	3	Q	Ambient Dose
Below 100N Outfall	4	M	Ambient Dose
Below 100N Stack	5	M	Ambient Dose
Above Tip 100N Berm	6	M	Ambient Dose
100 N Trench Spring	7	M	Ambient Dose
Below 100 D Area	8	Q	Ambient Dose
Below Opp 100 D	9	Q	Ambient Dose
Lo End Locke Isl	10	Q	Ambient Dose
White Bluffs Fy Lnd.	11	Q	Ambient Dose
White Bluffs Slough	12	Q	Ambient Dose
100 F Floodplain	13	Q	Ambient Dose
Below 100 F	14	Q	Ambient Dose
Hanford Slough	15	Q	Ambient Dose
Hanf Powerline Xing	16	Q	Ambient Dose
Hanford Ferry Lnd	17	Q	Ambient Dose
Hanford RR Track	18	Q	Ambient Dose
Savage Isl Slough	19	Q	Ambient Dose
Ringold Island	20	Q	Ambient Dose
Powerline Crossing	21	Q	Ambient Dose
N End Wooded Island	22	Q	Ambient Dose
S End Wooded Island	23	Q	Ambient Dose
Island Near 300 Area	24	Q	Ambient Dose
Isl DS Bateman Isl	25	Q	Ambient Dose
Port of Benton-River	26	Q	Ambient Dose
100-D Island	27	Q	Ambient Dose
Islnd Above 300 Area	28	Q	Ambient Dose

(a) Refer to Figure 7.3, Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

7.2 COLUMBIA RIVER SHORELINE RADIATION SURVEYS

<u>Location (a)</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
Above 1K Boat Ramp	3	Q	Exposure, Surface contamination	BICRON, GM
Below 100N Outfall	4	M	Exposure, Surface contamination	BICRON, GM
Below 100N Stack	5	M	Exposure, Surface contamination	BICRON, GM
Above Tip 100N Berm	6	M	Exposure, Surface contamination	BICRON, GM
100 N Trench Springs	7	M	Exposure, Surface contamination	BICRON, GM
Below Opp 100 D	9	Q	Exposure, Surface contamination	BICRON, GM
Lo End Locke Isl	10	Q	Exposure, Surface contamination	BICRON, GM
White Bluffs Fy Lnd.	11	Q	Exposure, Surface contamination	BICRON, GM
Below 100 F	14	Q	Exposure, Surface contamination	BICRON, GM
Hanf Powerline Xing	16	Q	Exposure, Surface contamination	BICRON, GM
Hanford Ferry Lnd.	17	Q	Exposure, Surface contamination	BICRON, GM
Hanford RR Track	18	Q	Exposure, Surface contamination	BICRON, GM
Ringold Island	20	Q	Exposure, Surface contamination	BICRON, GM
Powerline Crossing	21	Q	Exposure, Surface contamination	BICRON, GM
100-D Island	27	Q	Exposure, Surface contamination	BICRON, GM
Isl Above 300 Area	28	Q	Exposure, Surface contamination	BICRON, GM

(a) Refer to Figure 7.3, Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

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Figure 7.3. Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River

PART II. HANFORD GROUND-WATER SURVEILLANCE

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP _T	ICP _u	I-129	Pu (a)	Sr-90	Tc-99	H ₃	Lo H ₃	U	U (b)	VOA	Cosample
1199-34-15A			A										A		A				
1199-38-16			A												A				
1199-39-15			A												A				
1199-39-16C			A												A				
1199-39-16D			A												A				
1199-39-16E			A												A				
1199-40-15			A												A				
1199-40-16B	A		A	A			A	A							A	A			
1199-40-16C			A												A				
199-B2-12		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B2-13		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B3-1		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B3-2P	A		A					A							A	A			
199-B3-2Q	A		A					A							A	A			
199-B3-46	A	2	A	2	2	2		A	2	2	2	2	2	2	2	A		A	100-BC-5
199-B3-47		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B4-1		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B4-2							A								A				
199-B4-4		2	2	2	2	2		2	2	2	2	2	2	2	2			A	100-BC-5
199-B4-5		2	2	2	2	2		2	2	2	2	2	2	2	2			A	100-BC-5
199-B4-7		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B4-8		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B4-9		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B5-1		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B5-2		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B8-6		2	2	2	2	2		2	2	2	2	2	2	2	2			A	100-BC-5
199-B9-1		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-B9-2	A	2	A	2	2	2		A	2	2	2	2	2	2	2			A	100-BC-5
199-B9-3		2	2	2	2	2		2	2	2	2	2	2	2	2				100-BC-5
199-D2-5	A		A				A	A							A				
199-D2-6		2	2	2	2			2	2	2			2						100-HR-3
199-D5-12		2	2	2	2			2	2	2			2						100-HR-3
199-D5-13	2	2	2	2	2			2	2				2		4				100-D Pond
199-D5-14		2	2	2	2			2	2	2			2		2				100-HR-3
199-D5-15		2	2	2	2			2	2	2			2		2				100-HR-3
199-D5-16		2	2	2	2			2	2	2			2		2				100-HR-3
199-D5-17		2	2	2	2			2	2	2			2		2				100-HR-3
199-D5-18		2	2	2	2			2	2	2			2		2				100-HR-3
199-D5-19		2	2	2	2			2	2	2			2		2				100-HR-3
199-D5-20		2	2	2	2			2	2	2			2		2				100-HR-3
199-D8-3		2	2	2	2			2	2	2			2		2				100-D Pond
199-D8-4	2	2	2	2	2			2	2				2		4				100-D Pond
199-D8-5	2	2	2	2	2			2	2				2		4				100-D Pond
199-D8-53		2	2	2	2			2	2	2			2		2				100-HR-3

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Antons	Beta	C-14	Cyanide	Gamma Scan	ICP _f	ICP _u	I-129	Pu (a)	Sr-90	Tc-99	H ₃	Lo H ₃	U	U (b)	VOA	Cosample
199-D8-54A	A	2 A	2	2				A	2 A	2		A	2	A	2	A			100-HR-3
199-D8-54B	A	2 A	2	2				A	2 A	2		A	2	A	2	A			100-HR-3
199-D8-55		2	2	2				2	2	2					2				100-HR-3
199-D8-6	2	2	2	2					2						4				100-D Pond
199-F1-2		2	2	2											2				2 100-FR-3
199-F5-1		2 A	2	2								A	2	A	2				2 100-FR-3
199-F5-3	A	A						A				A		A					
199-F5-4		2	2	2								2	2		2				2 100-FR-3
199-F5-42		2	2	2								2	2		2				2 100-FR-3
199-F5-43A		2	2	2								2	2		2				2 100-FR-3
199-F5-44		2	2	2								2	2		2				2 100-FR-3
199-F5-45		2	2	2								2	2		2				2 100-FR-3
199-F5-46		2	2	2								2	2		2				2 100-FR-3
199-F5-47		2 A	2	2								2	2	A	2	A		A	2 100-FR-3
199-F5-48		2	2	2								2	2		2				2 100-FR-3
199-F5-6		A												A		A		A	
199-F6-1		2 A	2	2								2	2	A	2				2 100-FR-3
199-F7-1	A	2 A	2	2				A				2	2	A	2	A		A	2 100-FR-3
199-F7-2		2	2	2								2	2		2				2 100-FR-3
199-F7-3		2 A	2	2				A				2 A		A	2			A	2 100-FR-3
199-F8-1	A	A						A						A		A		A	
199-F8-2		2 A	2	2				A				2	2	A	2	A		A	2 100-FR-3
199-F8-3	A	2 A	2	2				A				2	2	A	2	A		A	2 100-FR-3
199-F8-4		2 A	2	2								2	2	A	2			A	2 100-FR-3
199-H3-1	A	A						A	A					A					
199-H3-2A	4	4	4	4				4				3	3	3	3			3	183-H
199-H3-2B	A	A						A	A				A	A		A			
199-H3-2C	4	4	4	4				4				3	3	3	3			3	183-H
199-H4-10		A						A						A					
199-H4-11	4	4 A	4	4				A	4 A			A	A	A	A	A			183-H
199-H4-12A	A	4 A	4	4				A	4 A			4 A	4 A	4	4		4		183-H
199-H4-12B	A	A						A	A				A	A		A			
199-H4-12C	A	4 A	4	4				A	4 A			4 A	4 A	4	4		4		183-H
199-H4-13		A						A				A	A	A				A	
199-H4-14	4	4	4	4				4				4	4	4	4		4		183-H
199-H4-15A		A						A						A					
199-H4-15B		A						A						A					
199-H4-16		A						A				A		A					
199-H4-17		A						A						A					
199-H4-18	4	4	4	4				4					4	4	4		4		183-H
199-H4-2		A						A				A		A					
199-H4-3	4	4	4	4				4				4	4	4	4		4		183-H
199-H4-4	A	4 SA	4 SA	4 SA	4		SA	A	4	A		4	SA	4 SA	4	SA	SA	4 A	DOH/183-H

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
199-H4-45		2	2	2				2	2			2	2	2			2		100-HR-3
199-H4-46		2	2	2				2	2			2	2	2			2		100-HR-3
199-H4-47		2	2	2				2	2			2	2	2			2		100-HR-3
199-H4-48		2	2	2				2	2			2	2	2			2		100-HR-3
199-H4-49		2	2	2				2	2			2	2	2			2		100-HR-3
199-H4-5	4	4	4	4				4				4	4	4			4		183-H
199-H4-6	4	4	4	4				4				4	4	4			4		183-H
199-H4-7	4	4	4	4				4				4	4	4			4		183-H
199-H4-8	4	4	4	4				4				4	4	4			4		183-H
199-H4-9	4	4	4	4				4				4	4	4			4		183-H
199-H5-1A		2	2	2				2	2			2	2	2			2		100-HR-3
199-H6-1		2	2	2				2	2			2	2	2			2		100-HR-3
199-K-106A	A	4A	4A	4A			A	A			A			A			A		OPERK
199-K-107A		4	4	4										4					OPERK
199-K-108A		4	4	4										4					OPERK
199-K-109A	A	4A	4A	4A			A	A		A		A	4	A	4		A		OPERK
199-K-11		2		2		2		2	2					2			2		100-KR-4
199-K-110A		4	4	4										4					OPERK
199-K-111A	A	4A	4	4			A	A			A			A	4				OPERK
199-K-13		2		2		2		2	2					2			2		100-KR-4
199-K-18	A	2A	A	2		2	A	A	2	2		A		A	2				OPERK/100-KR-4
199-K-19		2		2		2		2	2					2			2		100-KR-4
199-K-20		2		2		2		2	2					2			2		100-KR-4
199-K-21		2		2		2		2	2					2			2		100-KR-4
199-K-22		2		2		2		2	2					2			2		100-KR-4
199-K-23		2		2		2		2	2					2			2		100-KR-4
199-K-27	A	Q	6Q	4Q	6	2	Q	A	2A	2A	A	Q	A	Q	6		Q	2A	DOH/OPERK/100-KR-4
199-K-28	A	4A	4	4			A	A				A	A	A	4				OPERK
199-K-29	A	4A	4	4			A	A				A	A	A	4				OPERK/100-KR-4
199-K-30	A	6A	4A	6	2	2	A	A	2	2		A	A	A	6			2	100-KR-4
199-K-31		2		2		2		2	2					2			2		OPERK/100-KR-4
199-K-32A		6	4	6	2	2		2	2					6			2		100-KR-4
199-K-32B		2		2		2		2	2					2			2		100-KR-4
199-K-33		2		2		2		2	2			A		2			2	2A	100-KR-4
199-K-34		6A	4	6	2	2	A	2	2			A		A	6		A	2A	OPERK/100-KR-4
199-K-35		2		2		2		2	2					2			2		100-KR-4
199-K-36		2A		2		2		2	2			A		A	2		2A		100-KR-4
199-K-37		2		2		2		2	2					2			2		100-KR-4
199-N-14	A	2SA	2SA	2SA			SA	SA	2A	A		SA	2A	SA			SA	A	DOH/1301/100-NR-2
199-N-16		2	2	2				2	2			2		2					100-NR-2
199-N-17		2	2	2				2	2			2		2					100-NR-2
199-N-18																			100-NR-2
199-N-19																			100-NR-2
199-N-2	2	2A	2	2			A	A	2			A		A					1301

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
199-N-20																			100-NR-2
199-N-21		2	2	2			2	2	2			2		2					100-NR-2
199-N-22																			
199-N-23																			
199-N-24																			
199-N-25		2	2	2			2	2	2			2		2					100-NR-2
199-N-26		2	2	2			2	2	2			2		2					100-NR-2
199-N-27	2	2	A	2	2		A	A	2			A	2	A					1325/100-NR-2
199-N-28			A				A	A				A		A					
199-N-29	2	2	2	2	2				2			2							1325/100-NR-2
199-N-3	A	2	SA	4	SA	4	SA	2	4	2	A	SA	2	A	SA	2		A	DOH/1301/100-NR-2
199-N-31																			
199-N-32	2	4	4	4			A	2	4	2		A	2	A	2			A	1325/100-NR-2
199-N-33																			
199-N-34	2	3	3	3			1	3	1			3		1					1301/100-NR-2
199-N-36																			
199-N-41	2	2	2	2				2				2							1325/100-NR-2
199-N-43	2	2	2	2				2				2							1325/100-NR-2
199-N-49																			100-NR-2
199-N-5			A									A		A					
199-N-50		2	2	2			2	2	2			2		2					100-NR-2
199-N-51		2	2	2			2	2	2			2		2					100-NR-2
199-N-52			A									A		A					
199-N-54		2	2	2			2	2	2			2		2					100-NR-2
199-N-57	2	3	3	3			1	3	1			1		1					1301
199-N-59	4	4	4	4				4											4 1324
199-N-64		2	2	2			2	2	2			2		2					100-NR-2
199-N-66																			100-NR-2
199-N-67	A	2	4	A	4	A	4	2	A	2		A	2	A	A	2		A	1301/100-NR-2
199-N-69	A	2	2	A	2	2	A	A	2	A		A		A				A	1301
199-N-70	2	4	4	4	4		2	4	2			2		2					1325/100-NR-2
199-N-71	4	6	6	6	6		2	6	2			2		2					4 1324/100-NR-2
199-N-72	4	4	4	4	4			4											4 1324
199-N-73	4	6	6	6	6		2	6	2			2		2					4 1324/100-NR-2
199-N-74	2	4	4	4	4		2	4	2			2		2					1325/100-NR-2
199-N-75	2	4	4	4	4		2	4	2			2		2					1301/100-NR-2
199-N-76	A	2	SA	4	SA	4	SA	2	A	4	A	2	SA	2	SA	SA	2	A	DOH/1301/100-NR-2
199-N-77	4	6	6	6	6		2	6	2			2		2					4 1324/100-NR-2
199-N-80	A	2	A	2	2		A	2	A	2	2	A	2	A	2			A	100-NR-2
199-N-81	2	2	2	2	2		A	2	2			A		A				A	1325
299-E13-14	A		A				A	A		A		A	A	A		A		A	
299-E13-5			A				A			A		A	A	A		A		A	
299-E16-1		1	1	1										1					OPER:200-E
299-E16-2		1	1	1										1		1			OPER:PUREX

[illegible]

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Si-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
299-E25-25			A							A				A					
299-E25-26	4	4	4	4				4	4	A				A	4				216-A-29
299-E25-28	4	4	4	4				4	4	A				A	4				216-A-29
299-E25-29P			A							A				A					
299-E25-3			A							A				A					
299-E25-30P																			
299-E25-31	4		4					4	4	A				A					216-A-29
299-E25-32P	4	4	4	4				4	4						4				216-A-29
299-E25-33		1	1	1										1					OPER:200-E
299-E25-34	4	4	4	4				4	4	A				A	4				216-A-29
299-E25-35	4	4	4	4				4	4	A				A	4				216-A-29
299-E25-36	7	1	7	1				7	4	A					1				216-A-29,A-10,A-36B
299-E25-37		1	1	1						A					1				OPER:200-E
299-E25-38																			
299-E25-39		1	1	1						A				A	1				OPER:200-E
299-E25-40	1	2	1	2				1		2				2	2		1		SST-A-AX
299-E25-41	1	3	2	3				1		2				2	3		1		SST-A-AX/OPER:200-E
299-E25-42	4	4	4	4				4	4	A				A	4				216-A-29
299-E25-43	4	4	4	4				4	4	A				A	4				216-A-29
299-E25-44			A							A				A					
299-E25-45			A							A				A					
299-E25-46	1	2	1	2				1		2				2	2		1		SST-A-AX
299-E25-47	4	4	4	4				4	4	A					4				216-A-29
299-E25-48	4	4	4	4				4	4	A					4				216-A-29
299-E25-49																			
299-E25-50																			
299-E25-6		1	1	1						A					1		1		OPER:PUREX
299-E25-9		1	1	1						A					1		1		OPER:PUREX
299-E26-10	1	2	1	2				1		A					1				1 LERF/OPER:B-Pond
299-E26-11	1	3	2	3				1		A					1				1 LERF:200-E
299-E26-12	4	4	4	4				4	4	A					4				216-A-29
299-E26-13	4	4	4	4				4	4	A					4				216-A-29
299-E26-2		1	1	1											1				OPER:200-E
299-E26-4			A							A				A					
299-E26-6		1	1	1						A					1				OPER:PUREX
299-E26-8	A	1	A	1	1									A	1				OPER:200-E
299-E26-9	1	3	2	3				1							1				1 LERF/OPER:200-E
299-E27-10	2	2	2	2				2		A					2				LLWMA-2
299-E27-11	3	4	3	4				3		A					2				216-B-63/LLWMA-2
299-E27-12	1	2	1	2				1		2				2	2				SST-C
299-E27-13	1	2	1	2				1		2				2	2				SST-C
299-E27-14	1	3	2	3				1		2				2	3				SST-C/OPER:200-E
299-E27-15	1	3	2	3				1		2				2	3				SST-C/OPER:200-E
299-E27-16	1	2	1	2				1											216-B-63

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
299-E27-17	3	4	3	4				3						2					216-B-63/LLWMA-2
299-E27-18	1	2	1	2				1		A				A					216-B-63
299-E27-19	1	2	1	2				1						1					216-B-63/OPER:B-Pond
299-E27-7	1	2	1	2				1		2			2	2					SST-C
299-E27-8	3	4	3	4				3						2					216-B-63/LLWMA-2
299-E27-9	3	4	3	4				3						2					216-B-63/LLWMA-2
299-E28-1		1	A	1	1		A			A	A			A	1				OPER:200-E
299-E28-10																			
299-E28-12		1	1	1										1					OPER:200-E
299-E28-13			A							A				A					
299-E28-17			A	A			A			A	A	A		A		A			
299-E28-18		1	1	1										1		1			OPER:B-Plant
299-E28-2		1	1	1			A			A	A			A	1				OPER:200-E
299-E28-21			1	1	1					A				1		1			OPER:B-Plant
299-E28-23			A				A			A	A	A		A		A			
299-E28-24																			
299-E28-25			A				A			A	A	A		A		A			
299-E28-26	2	2	2	2				2		A				2		2			LLWMA-1
299-E28-27	2	2	2	2				2		A			A	2		2			LLWMA-1
299-E28-28	2	2	2	2				2						2		2			LLWMA-1
299-E28-5		1	1	1						A				A	1				OPER:200-E
299-E28-6		1	1	1						A				1					OPER:200-E
299-E28-7			A				A	2		A	A	2	A	2					200-BP-5
299-E28-8																			
299-E28-9		1	1	1										1					OPER:200-E
299-E32-10	2	2	2	2				2		A				2		2			LLWMA-1
299-E32-2	2	2	2	2				2	2	A			2	2		2			LLWMA-1/200-BP-5
299-E32-3	2	2	2	2				2						2		2			LLWMA-1
299-E32-4	6	6	6	6				4		A				2		2			LLWMA-1
299-E32-5	2	3	3	3				2		A				3		2			LLWMA-1/OPER:200-E
299-E32-6	2	2	2	2				2						2		2			LLWMA-1
299-E32-7	2	2	2	2				2						2		2			LLWMA-1
299-E32-8	2	2	2	2				2		A				2		2			LLWMA-1
299-E32-9	2	2	2	2				2						2		2			LLWMA-1
299-E33-10			A							A			A	A					
299-E33-12	2	2	2				2	2	2	2	2	2	2	2	2		2		200-BP-5
299-E33-13	2	2	2				2	2	2	2	A	2	2	2	2		2		200-BP-5
299-E33-14	2	2	2				2	2	2	2		2	2	2	2		2		200-BP-5
299-E33-15	2	2	2				2	2	2	2		2	2	2	2		2		200-BP-5
299-E33-18																			200-BP-5
299-E33-1A			A							A				A					
299-E33-26	2	2	2				2	2	2	2	A	2	2	2	2		2		200-BP-5
299-E33-28	2	2	2	2				2	2	A				2	2		2		LLWMA-1/200-BP-5
299-E33-29	2	2	2	2				2	2	A				2	2		2		LLWMA-1/200-BP-5

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
299-E33-3			A	A			A			A			A	A					
299-E33-30	2	2	2	2			2	2		A			2	2		2			LLWMA-1/200-BP-5
299-E33-31	1	2	1	2				1		2			2	2		1			SST-B-BY-BX/200-BP-5
299-E33-32	1	2	1	2				1		2			2	2		1			SST-B-BY-BX/200-BP-5
299-E33-33	2	4	2	4				2		2			2	3		1			216-B-63/SST-B-BY-BX/B
299-E33-34	2	2	2	2			2	2		A			2	2		2			LLWMA-1/200-BP-5
299-E33-35	2	2	2	2			2	2		A			2	2		2			LLWMA-1/200-BP-5
299-E33-36	2	4	2	4				2		2			2	2		1			216-B-63/SST-B-BY-BX
299-E33-37	1	3	2	3				1						1					216-B-63/OPER:200-E
299-E33-38	2	2	2			2	2	2	2	A	2	2	2	2		2			200-BP-5
299-E33-39	2	2	2			2	2	2	2	A	2	2	2	2		2			200-BP-5
299-E33-40	2	2	2			2	2	2	2		2	2	2	2		2			200-BP-5
299-E33-41	1	2	1	2				1		2			2	2		1			SST-B-BY-BX
299-E33-42	1	2	1	2				1		2			2	2		1			SST-B-BY-BX
299-E33-43	1	2	1	2				1		2			2	2		1			SST-B-BY-BX
299-E33-5										A									
299-E33-7																			
299-E34-10	3	4	3	4				3		A					2				216-B-63/LLWMA-2
299-E34-11	2	2	2	2				2		A			A		2				LLWMA-2
299-E34-12	2	2	2	2				2						2					LLWMA-2
299-E34-2	2	2	2	2			2	2		A			2	2					LLWMA-2/200-BP-5
299-E34-3	2	2	2	2				2		A				2					LLWMA-2
299-E34-5	2	2	2	2			2	2		A			2	2					LLWMA-2/200-BP-5
299-E34-7	2	3	3	3				2		A				3					LLWMA-2/OPER:200-E
299-E34-8	1	3	2	3				1						1					216-B-63/OPER:200-E
299-E34-9	2	2	2	2				2		A				2					LLWMA-2
299-E35-2	1	2	1	2				1						1					1 LERF/OPER:B-Pond
299-W10-1	A		3 A	3	3			A		A				A	3				2 OPER:200-W/200-ZP-1
299-W10-13	2	2	2	2				2		A					2				4 LLWMA-3/200-ZP-1
299-W10-14	2	2	2	2				2						2					2 LLWMA-3
299-W10-15	4	4	4	4				4		A			4	4		4		SA	2 SST-T/200-ZP-1
299-W10-16	4	5	5	5				4					4	5		4			2 SST-T/OPER:200-W/200-ZP-1
299-W10-17	4	4	4	4			4	4		4			4	4				A	SST-TX-TY
299-W10-18	4	4	4	4			4	4		4			4	4				A	2 SST-TX-TY/200-ZP-1
299-W10-19	2	2	6	2			4	2		A			4	6				A	4 LLWMA-3/SST-T/200-ZP-1
299-W10-20	2	3	7	3			4	3	1				4	7					3 LLWMA-3/SST-T
299-W10-21	2	2	6	2			4	2					4	6					2 LLWMA-3/SST-T
299-W10-4		3	3	3										3					2 OPER:200-W/200-ZP-1
299-W10-5		3	3	3										3					2 OPER:200-W/200-ZP-1
299-W10-9			A					A					A	A				A	
299-W11-10		1 SA	1	1				A		A			A	SA	1	A		SA	OPER:200-W
299-W11-14		3 A	3	3				A		A				A	3	A		A	2 OPER:200-W/200-ZP-1
299-W11-18		1 A	1	1				A		A				A	1			A	OPER:200-W
299-W11-20			A							A				A					2 200-ZP-1

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
299-W11-23		1	1	1										1					OPER:200-W
299-W11-27	4	4	4	4				4					4	4		4		A	SST-T
299-W11-28	4	4	4	4				4					4	4		4		A	SST-T
299-W11-3		1	A	1	1			A		A				A	1			A	OPER:200-W
299-W11-30		2	A	2	2					A				2					2 200-ZP-1
299-W11-31	2	2	6	2				4	2	A			4	6					4 LLWMA-5/SST-T/200-ZP-1
299-W11-6		1	1	1				A						1					OPER:200-W
299-W11-7	A	3	A	3	3			A		A				A	3			A	2 OPER:200-W/200-ZP-1
299-W12-1		1	A	1	1			A		A			A	A	1			A	2 OPER:200-W/200-ZP-1
299-W14-12	4	4	4	4				4	4	4			4	4					SST-TX-TY
299-W14-2		1	A	1	1					A			A	A	1				OPER:200-W
299-W14-6		1	A	1	1					A			A	A	1			A	OPER:200-W
299-W14-9		2	2	2										2					2 200-ZP-1
299-W15-1		2	2	2										2					2 200-ZP-1
299-W15-10																			200-ZP-1
299-W15-11			A					A						A				A	200-ZP-1
299-W15-12		1	A	1	1					A			A	A	1			A	OPER:200-W
299-W15-15	2	4	4	4	4				2					4				A	4 LLWMA-4/200-ZP-1
299-W15-16	2	4	4	4	4				2					4					4 LLWMA-4/200-ZP-1
299-W15-17	2	4	4	4	4				2					4					4 LLWMA-4/200-ZP-1
299-W15-18	2	4	4	4	4				2					4					4 LLWMA-4/200-ZP-1
299-W15-19	2	3	3	3					2					3					2 LLWMA-4/OPER:200-W
299-W15-2		1	1	1										1					OPER:200-W
299-W15-20	2	2	2	2					2					2					2 LLWMA-4
299-W15-22	4	5	5	5				4	4	4			4	5					SST-TX-TY/OPER:200-W
299-W15-23	2	2	2	2					2					2					2 LLWMA-4
299-W15-24	2	3	3	3					2					3					2 LLWMA-4/OPER:200-W
299-W15-4		3	A	3	3					A			A	A	3				2 OPER:200-W/200-ZP-1
299-W15-6	A	2	A	2	2		A	A	A		A			A	2			A	2 200-ZP-1
299-W15-7		3	A	3	3		A	A						A	3			A	2 OPER:200-W/200-ZP-1
299-W18-1		2	2	2										2					2 200-ZP-1
299-W18-15	A	1	A	1	1			A	A					A	1	A		A	OPER:200-W
299-W18-17																			
299-W18-2		2	2	2										2					2 200-ZP-1
299-W18-20																			
299-W18-21	2	2	2	2					2					2					2 LLWMA-4
299-W18-22	2	3	3	3					2					3					2 LLWMA-4/OPER:200-W
299-W18-23	2	4	4	4					2					4					4 LLWMA-4/200-ZP-1
299-W18-24	2	4	4	4					2					4					4 LLWMA-4/200-ZP-1
299-W18-25	1	3	3	3					1				2	3		2			SST-U/OPER:200-W
299-W18-26	2	2	2	2					2					2					2 LLWMA-4
299-W18-27	2	2	2	2					2					2					2 LLWMA-4
299-W18-28	2	2	2	2					2					2					2 LLWMA-4
299-W18-29																			

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
299-W18-30	1	2	2	2				1					2	2		2			SST-U
299-W18-31	1	2	2	2				1					2	2		2			SST-U
299-W18-32	2	2	2	2				2						2				2	LLWMA-4
299-W18-33		2	2	2				2						2		2			OPER:U-14
299-W18-4		2	2	2										2				2	200-ZP-1
299-W18-5		2	A 2	2		A				A			A	A 2				A 2	200-ZP-1
299-W19-1																			
299-W19-10		1	1	1									A	1		1			OPER:U1/2
299-W19-11		1	A 1	1			A 2			2		2	2	A 1		A 1	2	A	OPER:U1/2/200-UP-1
299-W19-12		3	3	3			2			A 2		2	A 2	1		A 2	2	2	200-UP-1/OPER:200-W
299-W19-13		2	A 2	2			2			2		2	2	A		A 2	2	A 2	200-UP-1
299-W19-14	A		A					A		A			A	A		A		A	
299-W19-15		1	1	1						A			A	A 1		A 1		A	OPER:U1/2
299-W19-16		1	A 1	1			2	A		2		2	2	A 1		A 1	2	A	OPER:U1/2/200-UP-1
299-W19-17		1	1	1											1		1		OPER:U1/2/U17
299-W19-18		1	A 1	1			2	A		A			2	1		A 1	2	A	OPER:U1/2/200-UP-1
299-W19-19		2	A 2	2			2			2		2	2	A 2		4	2	A	200-UP-1
299-W19-2		1	A 1	1			2			2		2	2	1		A 1	2	A	OPER:U8/200-UP-1
299-W19-20		2	2	2			2			2		2	2	2		4	2	2	OPER:U17/200-UP-1
299-W19-21		4	4	4			2	2		2		2	2	A 2		4	2	A 2	OPER:U14/200-UP-1
299-W19-23		2	2	2			2			A 2		2	A 2	2		4	2		OPER:U17/200-UP-1
299-W19-24		2	2	2						A			A		2	2			OPER:U17
299-W19-25		2	2	2										2		2			OPER:U17
299-W19-26		2	2	2										2		2			OPER:U17
299-W19-27		2	2	2				2		A			A	2		A 2			OPER:U14
299-W19-28	A	1	A 1	1			2	A 1		2		2	3	1		1	2		OPER:U-Plant/200-UP-1
299-W19-29		1	A 1	1			2	A 1		2		2	3	1		1	2		OPER:U-Plant/200-UP-1
299-W19-3	A	1	A 1	1			A	A 1		A			A	A 1		1			OPER:U-Plant
299-W19-30			A							A			A	A		A		A	
299-W19-31	1	5	5	5			2	1		2		2	4	3		4	2	2	SST-U/OPER:200-W/200-UP-1
299-W19-32	1	6	6	6			2	3		2		2	4	4		6	2	2	SST-U/200-UP-1/OPER:U14
299-W19-34A		2	2	2			2			2		2	2			2	2	2	200-UP-1
299-W19-34B		2	2	2			2			2		2	2			2	2	2	200-UP-1
299-W19-35		2	2	2			2			2		2	2			2	2	2	200-UP-1
299-W19-4	A	3	A 3	3			2	A		A 2		2	A 2	1		A 2	2	A 2	200-UP-1/OPER:200-W/200-ZP
299-W19-9		1	1	1			2			2		2	2	1		1	2		OPER:U1/2/200-UP-1
299-W19-91		2	2	2				2						2		2			OPER:U14
299-W19-92		2	2	2				2						2		2			OPER:U14
299-W19-93			A											A		A			
299-W21-1		2	A 2	2			2			A 2		2	A 2	A		2	2	A 2	200-UP-1
299-W22-10			A				A	A		A	A	A	A	A				A	
299-W22-12		1	A 1	1				A		A				A 1					OPER:200-W
299-W22-2			A					A		A	A			A				A	
299-W22-20	A	SA 1	SA 1	SA 1			SA	A		A			A	SA 1		SA		A	DOH

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
299-W22-21	A		1 A	1	1			A		A			A	A	1	A		A	OPER:200-W
299-W22-22			A							A			A	A		A			
299-W22-23		4	4	4	4			4		4			4	4					216-U-12
299-W22-39	1	3	2	3				1					2	3		1			SST-S-SX/OPER:200-W
299-W22-40		5	5	5			A	4		4			4	5				A	216-U-12/OPER:200-W
299-W22-41		4	4	4			A	4		4			4	4					216-U-12
299-W22-42	4	4	4	4				4	4	4			4	4		4		4	216-U-12/ERDF
299-W22-43	4	4	4	4				4		4			4	4					216-U-12
299-W22-44	1	2	1	2				1					2	2		1			SST-S-SX
299-W22-45	1	2	1	2				1					2	2		1			SST-S-SX
299-W22-46	1	2	1	2			A	1		A			A	2	2		1	A	SST-S-SX
299-W22-9	A		1 A	1	1 A			A		A			A	A	1	A		A	OPER:200-W
299-W23-10			A											A		A		A	
299-W23-11		1	1	1											1				OPER:200-W
299-W23-13	1	2	1	2				1					2	2		1		A	SST-S-SX
299-W23-14	1	3	2	3				1					2	3		1			SST-S-SX/OPER:200-W
299-W23-15	1	2	1	2				1					2	2		1		A	SST-S-SX
299-W23-2			A	A			A			A	A	A	A	A		A		A	
299-W23-3			A	A			A			A	A		A	A		A		A	
299-W23-4																			
299-W23-7			A				A						A	A		A			
299-W23-9		1	A	1	1					A			A		1	A		A	OPER:200-W
299-W26-10	1	2	1	2				1		A				A				A	216-S-10
299-W26-12	1	2	1	2				1											216-S-10
299-W26-6		1	1	1											1				OPER:200-W
299-W26-7	1	2	1	2				1						A				A	216-S-10
299-W26-8	1	2	1	2				1						A		A		A	216-S-10
299-W26-9	1	2	1	2				1		A				A		A			216-S-10
299-W27-1		4	A	4	4					A				A	4			A	OPER:222-S
299-W27-2	1	2	1	2				1						A		A			216-S-10
299-W6-1		1	A	1	1					A				A	1			A	OPER:200-W
299-W6-10	2	2	6	2			4	2		A			4	6				4	LLWMA-5/SST-T/200-ZP-1
299-W6-11	2	2	2	2				2						2				2	LLWMA-5
299-W6-12	2	2	2	2				2						2				2	LLWMA-5
299-W6-2	4	5	9	5			4	4					4	9				4	LLWMA-3,5/SST-T/OPER:200-
299-W6-3	2	2	2	2				2						2				2	LLWMA-5
299-W6-4	2	2	6	2			4	2					4	6				2	LLWMA-5/SST-T
299-W6-5	2	2	2	2				2		A			A	2				4	LLWMA-5/200-ZP-1
299-W6-6	2	2	2	2				2		A				2				2	LLWMA-5
299-W6-7	2	2	2	2				2		A				2				2	LLWMA-5
299-W6-8	2	2	2	2				2						2				2	LLWMA-5
299-W6-9	2	2	6	2			4	2		A			A	4	6			2	LLWMA-5/SST-T
299-W7-1	2	2	2	2				2						2				2	LLWMA-3
299-W7-10	4	4	4	4				4						4				4	LLWMA-3,5

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP _T	ICP _u	I-129	Pu (a)	Sr-90	Tc-99	H ₃	Lo H ₃	U	U (b)	VOA	Cosample
299-W7-11	2	2	2	2	2			2	2					2				2	2 LLWMA-3
299-W7-12	2	2	2	2	2			2	2					2				2	2 LLWMA-3
299-W7-2	2	2	2	2	2			2	2					2				2	2 LLWMA-3
299-W7-3	2	2	2	2	2			2	2					2				2	2 LLWMA-3
299-W7-4	2	2	2	2	2			2	2	A			A	2				2	2 LLWMA-3
299-W7-5	2	2	2	2	2			2	2					2				2	2 LLWMA-3/200-ZP-1
299-W7-6	2	3	3	3	3			2	2	A				3				2	2 LLWMA-3/OPER:200-W
299-W7-7	2	2	2	2	2			2	2					2				2	2 LLWMA-3
299-W7-8	2	2	2	2	2			2	2	A				2				2	2 LLWMA-3
299-W7-9	2	2	2	2	2			2	2					2				2	2 LLWMA-3
299-W8-1	2	2	2	2	2			2	2					2				2	2 LLWMA-3
299-W9-1	2	2	2	2	2			2	2					2				2	2 LLWMA-3
3099-42-16			A											SA 2	A	SA 2 A	A	A	
399-1-10A	A	2 A	2					A						A		A		A	2
399-1-10B	A	A						A						A		A		A	
399-1-11		2 A	2	2										2		2		2	2 300-TRENCH
399-1-12		2 A	2	2										2		2		2	2 300-TRENCH
399-1-13A	A	A						A						A		A		A	
399-1-13B	A	A						A						A		A		A	
399-1-14A		2 A	2	2										A		A		A	2 300-TRENCH
399-1-14B		A												A		A		A	
399-1-15		A												A		A		A	
399-1-16A	A	2 A	2	2				A						A		A		A	2 300-TRENCH
399-1-16B	A	2 A	2	2				A						A		A		A	2 300-TRENCH
399-1-16C	A	A						A						A		A		A	
399-1-17A	A	Q	4 Q	Q	4		Q	A	A	A			A	Q	4	Q	4 A	A	4 DOH/300-TRENCH
399-1-17B		2 A	2	2										A		A	2 A	A	2 300-TRENCH
399-1-18A		2 A	2	2										2		2		2	2 300-TRENCH
399-1-19		A												A		A		A	
399-1-2														A		A		A	
399-1-21A		A						A						A		A		A	
399-1-21B		A						A						A		A		A	
399-1-3														A		A		A	
399-1-4														A		A		A	
399-1-5														A		A		A	
399-1-6														A		A		A	
399-1-7														A		A		A	
399-1-8														A		A		A	
399-1-9														A		A		A	
399-2-1		2	2	2										2		2		2	2 300-TRENCH
399-2-2														A		A		A	
399-2-3														A		A		A	
399-3-1														A		A		A	
399-3-10		2	2	2										A	2	2		2	2 300-TRENCH

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
399-3-11			A				A							A		A 2	A	A	300-FF-5
399-3-12			A											A		A	A	A	
399-3-2			A												A	A		A	
399-3-3			A													A		A	
399-3-6			SA											SA		A		SA	
399-3-9			A											A		A		A	
399-4-1			A												SA	SA		A	
399-4-10			A											A		A 2		A	300-FF-5
399-4-11			A				A								A	A		A	
399-4-12			A				A								A	A 2		A	300-FF-5
399-4-7			A											A		A		A	
399-4-9			A											A		A		A	
399-5-1			A											A		A		A	
399-5-2	A		A					A							A	A			
399-8-1			A												A	A		A	
399-8-3			A											A		A			
399-8-5A	A		A					A						A		A	A	A	
399-8-5B	A		A					A						A		A	A	A	
399-8-5C	A		A					A						A		A	A	A	
499-S0-7			A							A				M				A	
499-S0-8			A											M				A	
499-S1-8A	A		A					A						A				A	
499-S1-8J	A	A	SA	A			A	A		A		A	A	M		A	A	A	
699-1-18			4 A	4	4									A	4				OPER:400
699-10-54A	A		A					A						A					
699-10-E12			A											A				A	
699-101-48B	A		A					A						A		A			
699-13-1C			A											A					
699-14-38			A											A					
699-17-5	A	A	A	A			A	A		A			A	A				A	DOH
699-17-70	A		A					A							A				
699-19-43			A											A					
699-19-58			A											A					
699-19-88	A		A					A						A					
699-2-3	A		4 A	4	4			A						A	4				OPER:400
699-2-7	A		4 A	4	4			A						A	4				OPER:400
699-20-20	A	SA	SA	SA			SA	A		SA			SA	SA				A	DOH
699-20-E12			A											A					
699-20-E12P			A											A					
699-20-E5A			A											A					
699-20-E5Q																			
699-21-6			A							A				A					
699-22-35		4	4	4	4				4	A				A	4				4 SWL
699-22-70	A		A					A						A		A			

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	H-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
699-23-34A	4	4	4	4				4		A				4				4	SWL
699-23-34B	4	4	4	4				4		A				4				4	SWL
699-24-1P			A											A					
699-24-33	4	4	4	4				4						4				4	SWL
699-24-34A	4	4	4	4				4						4				4	SWL
699-24-34B	4	4	4	4				4						4				4	SWL
699-24-34C	4	4	4	4				4						4				4	SWL
699-24-35	4	4	4	4				4						4				4	SWL
699-24-46			A											A					
699-25-33A	2	2	A	2	2			2		A				A	2			2	NRDWL
699-25-34A	2	2	2	2	2			2						2				2	NRDWL
699-25-34B	2	2	2	2	2			2		A				2				2	NRDWL
699-25-34C	4	4	4	4	4			4						4				4	SWL
699-25-34D	2	2	2	2	2			2		A			A	2				2	NRDWL
699-25-70	A		A	A				A						A					
699-26-15A			A							A				SA					
699-26-33	2	2	2	2				2						2				2	NRDWL
699-26-34A	2	2	2	2				2						2				2	NRDWL
699-26-34B	2	2	2	2				2						2				2	NRDWL
699-26-35A	6	6	6	6				6		A				A	6			6	NRDWL/SWL
699-26-35C	2	2	2	2				2		A				A	2			2	NRDWL
699-26-89			A											A					
699-27-8			A							A			A	SA					
699-28-40			A							A				A					
699-29-4			A											A					
699-29-78			A											A					
699-3-45			A											A					
699-31-31	A	Q	Q	Q			Q	A		A			A	Q				A	DOH
699-31-31P	A		A					A		A				A					
699-31-53B			A	A			A					A		A		A			
699-32-43	A	SA	SA	SA			SA	A	A	A		A	A	SA				A	DOH
699-32-62			1	A	1	1		A		A				A	1		A		OPER:600
699-32-70B	A		A				A	A		A				SA					
699-32-72A			A							A				A		A			
699-32-72B		4	4	4				4	4	4			4	4			4		ERDF
699-32-77		A	A	A			A			A			A	A				A	DOH
699-33-42			A							A				SA					
699-33-56			A				A					A		A		A			
699-34-41B			A											A					
699-34-42		1	A	1	1					A				A	1				OPER:600
699-34-51			A	A			A							A		A			
699-34-61		4	4	4				4	4	4			4	4			4		ERDF
699-34-88			A	A										A					
699-35-66A			A							A			A	SA					

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
699-35-70	A	SA 1	SA 1	SA 1			SA	A	A	A		A	A	SA 1		SA			DOH/OPER:600
699-35-78A			A	A			SA							A		A		A	
699-35-9			A							A			A	A					
699-36-46Q			A										A	A					
699-36-61A	A		1 A 1	1				A		A			A	A 1					OPER:600
699-36-61B			A											A					
699-36-70A		4	4	4	4			4	4	4				4	4		4	4	216-U-12/ERDF
699-36-93			A											A					
699-37-43			1 A 1	1						A				A 1					OPER:600
699-37-82A			1 A 1	1										A 1				A 2	OPER:600/200-ZP-1
699-37-E4			A	A									A	A					
699-38-15			A							SA			A	SA					
699-38-61			4	4	4			4	4	4				4	4		4	4	ERDF
699-38-65	A	SA	SA	SA			SA	A	A	A			SA	SA		A		A	DOH
699-38-68A			2	2	2			2			2		2	2			2	2	200-UP-1
699-38-70			3 A 1	3				2 A		A 2			2 A 2	A 1		A 2	A 2	A 2	OPER:600/200-UP-1/200-ZP-1
699-39-0														A					
699-39-39	A		A					A						A					
699-39-79	A		1 A 1	1				A						A 1				A 2	OPER:600/200-ZP-1
699-40-1																			
699-40-33A	A	A	A	A			A	A	A	A			A	A				A	DOH
699-40-36			A							A				A 1					OPER:B-Pond
699-40-39		4	4	4	4			2							1				216-B-3/OPER:B-Pond
699-40-40A		4	4	4	4			2							1				216-B-3/OPER:B-Pond
699-40-40B		4	4	4	4			2							1				216-B-3/OPER:B-Pond
699-40-62	A		1 SA 1	1				A		SA			A	SA 1					OPER:600
699-40-72																			
699-41-1	A	Q	Q	Q			Q	A	A	A		Q	Q	Q				A	DOH
699-41-23			A							A			A	SA					
699-41-35															1				OPER:B-Pond
699-41-40		4	4 A 4	4	4			A 2		A				A 1				A	216-B-3/OPER:B-Pond
699-41-42		4	4	4	4			2							1				216-B-3/OPER:B-Pond
699-42-12A			A					A		SA			A	SA					
699-42-2																			
699-42-37															1				OPER:B-Pond
699-42-39A		4	4 A 4	4	4			2		A			A	A 1					216-B-3/OPER:B-Pond
699-42-39B		4	4 A 4	4	4			A 2		A			A	A 1					216-B-3/OPER:B-Pond
699-42-40A		4	4	4	4			2							1				216-B-3/OPER:B-Pond
699-42-40C	A	4	4 A 4	4	4			A 2		A				A					216-B-3
699-42-41		4	4	4	4			2							1				216-B-3/OPER:B-Pond
699-42-42A			1	1	1										1				OPER:600
699-42-42B		4	4 A 4	4	4			2		A			A	A 1					216-B-3/OPER:B-Pond
699-42-E9B	A	SA	SA	SA			SA	A	A				SA		SA	SA	SA	A	DOH
699-43-3			A							A			A	A					

[illegible]

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
699-52-46A	A		1 A 1 A 1					A						A 1					OPER:600
699-52-48	A		A A					A						A					
699-52-54		2	2 A 2			A 2	A 2	2	2 A		2	2	2 A	2		2			200-BP-5
699-52-57		2	2	2		2	2	2	2		2	2	2	2		2			200-BP-5
699-53-47A			A A											A					
699-53-47B	A	A	A 1 A 1				A			A			1 A	A 1					DOH/OPER:Gable Mt.
699-53-48A			1 A 1 A 1			A								A 1					OPER:600
699-53-48B			1 1									1		1					OPER:Gable Mt.
699-53-50	A		1 A 1 1					A						1					OPER:600
699-53-55A		2	2	2		2	2	2	2		2	2	2	2		2			200-BP-5
699-53-55B		2	2	2		2	2	2	2		2	2	2	2		2			200-BP-5
699-53-55C		2	2	2		2	2	2	2		2	2	2	2		2			200-BP-5
699-54-34			A											A					
699-54-45B			1 1 1											1					OPER:600
699-54-48			1 A 1 A 1									A		A 1					OPER:600
699-54-49			1 1			A						A 1		1					OPER:Gable Mt.
699-54-57		2	2	2		2	2	2	2		2	2	2	2		2			200-BP-5
699-55-40			A											A					
699-55-50C			1 1									1		1					OPER:Gable Mt.
699-55-55		2	2	2		2	2	2	2		2	2	2	2		2			200-BP-5
699-55-57	A	2	2 A 2 A			A 2	A 2	A 2	2 A		2	2	A 2	A 2		2		A	200-BP-5
699-55-60A			1 A 1 A 1			A	A		A				A	A 1					OPER:600
699-55-76			A A				A							A					
699-55-89			A											A					
699-56-43			1 A 1 A 1											A 1					OPER:600
699-56-53	A		1 A 1 1			A	A	A		A			A	A 1					OPER:600
699-57-29A																			
699-57-59		2	2	2		2	2	2	2		2	2	2	2		2			200-BP-5
699-58-24			A											A					
699-58-48																			
699-59-55			1 1 1											1					OPER:600
699-59-58		2	3 3 1			2	2	2	2		2	2	2	3		2			200-BP-5/OPER:600
699-60-57		2	2	2		A 2	2	2	2 A		2	2	A 2	A 2		2			200-BP-5
699-60-60		2	2	2		2	2	2	2 A		2	2	2 A	2		2			200-BP-5
699-61-37																			
699-61-41			A											A					
699-61-62	A		SA SA			SA	SA	A		A			SA	SA					
699-61-66			A			A	A			A			A	A					
699-62-31			A											A					
699-62-43F	A		A					A						A				A	
699-63-25A			A											A					
699-63-55			A											A					
699-63-58			SA											SA					
699-63-90	A		A					A						A				A	

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
699-64-27			A											A				A	
699-64-62	A		SA					A					A	SA				A	
699-65-59A			A										A	A					
699-65-72	A		A				A	A					A	A					
699-65-83			A										A	A				A	
699-66-23			A											A				A	
699-66-38																			
699-66-39			A											A				A	
699-66-58	A		SA					A					A	SA					
699-66-64			A										A	A					
699-66-84																			
699-67-51			A										A	A					
699-67-86			A											A				A	
699-70-68		2		2					2	2		2	A		2		2		100-KR-4
699-71-30	A		A					A						A				A	
699-71-77			A					A					A	A				A	
699-72-73			A					A					A	A				A	
699-72-88			A											A				A	
699-72-92			A											A					
699-73-61		2		2					2	2		2			2		2		100-KR-4
699-74-44			A					A						A				A	
699-77-36	A		A					A						A		A		A	
699-77-54			A											A					
699-78-62		2		2					2	2		2			2		2		100-KR-4
699-8-17			A							A				A					
699-8-25			A							A				A					
699-81-58			A										A	A					
699-83-47	A		A					A						A				A	
699-84-35A			A					A	A					A				A	
699-87-55	A		A					A	A					A				A	
699-88-41																			
699-89-35			A					A						A					
699-90-34																			
699-90-45	A		SA					SA	SA					SA					
699-91-37																			
699-91-46A		2	2	2					2	2		2			2				100-HR-3
699-93-48A		2	2	2					2	2		2			2				100-HR-3
699-96-43	A	2	A	2	2			A	2	A	2	2		A	2				100-HR-3
699-96-49		2	2	2	2				2	2	2	2			2				100-HR-3
699-97-43	A	2	A	2	2			A	2	A	2	2		A	2	A			100-HR-3
699-97-51A		2	2	2	2				2	2		2			2				100-HR-3
699-ATH	A		A	A				A						A		A			
699-S11-E12A			SA											SA					
699-S11-E12AP	A		A					A							A	A			

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
699-S12-29			A											A					
699-S12-3			A											A					
699-S19-11	A	A	A	A			A	A							A				DOH
699-S19-E13	A	Q	Q	Q			Q	A		A			Q	Q		Q	Q	A	DOH
699-S19-E14			A											A					
699-S22-E9A			A										A	A					
699-S22-E9B			A											A					
699-S22-E9C			A											A					
699-S27-E14			SA												SA			A	300-FIRE
699-S27-E9A			A											A				A	
699-S27-E9B			A											A				A	
699-S27-E9C			A											A				A	
699-S28-E0			A												A			A	
699-S28-E12			A										A	A		A		A	
699-S29-E12			A	4						4				A				A	4 1100-EM-1
699-S29-E16A	A		SA					A							Q	A		A	
699-S29-E16B	A		SA					A							SA	A		A	
699-S29-E16C	A		SA					A							SA	A		A	
699-S3-25			A											A					
699-S3-E12			A							A			A	SA					
699-S30-E10A		A	A					A					A	A		A	A	A	
699-S30-E10B		A	A											A		A		A	
699-S30-E15A	A	A	A	A			A	A					A		A	A			
699-S31-1			A												A	A		A	
699-S31-E10A		A	A										A		A	A		A	
699-S31-E10B	A	SA	SA	A				A					SA		SA	SA		SA	
699-S31-E10C		A	A										A			A		A	
699-S31-E10D		A	A										A			A		A	
699-S31-E10E	A	SA	SA	A				A					A		A	SA		SA	
699-S31-E8A		A	A					A					A		A	A		A	
699-S32-E11																			
699-S32-E13A			A												SA			SA	
699-S32-E13B			A												A			A	
699-S32-E8			SA					A					A	SA		A		SA	
699-S34-E10		A	A											A				A	
699-S36-E13A			A												A			A	
699-S37-E11A			A												A			A	
699-S37-E14	A	Q	Q	Q			Q	A	A			Q	Q		Q	A	A	A	DOH
699-S38-E11			A											A				A	
699-S38-E12A	A		A					A						A				A	
699-S38-E12B	A		A					A						A				A	
699-S40-E14	A	A	A	A			A	A							SA	A		SA	
699-S41-E11A			A					A						A				A	
699-S41-E12								A						A				A	

1.0 HANFORD SITE WELLS

Well	Alk	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP_f	ICP_u	I-129	Pu (a)	Sr-90	Tc-99	H-3	Lo H-3	U	U (b)	VOA	Cosample
699-S41-E13A	A		A					A							A	A		A	
699-S41-E13B	A		A					A							A			A	
699-S41-E13C	A		A					A							A			A	
699-S43-E12			A												A			A	
699-S6-E14A			A											SA					
699-S6-E4B			A											SA					
699-S6-E4D	A	SA	SA	SA			SA	A	A	A		A	A	SA		SA		A	DOH
699-S8-19			A											A					

(a) Isotopic plutonium.

(b) Isotopic uranium.

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Figure 2.1. Distribution of Wells Sampled by the Ground-Water Surveillance, CERCLA, RCRA/Operational Monitoring Programs

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Monitoring Wells.

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400 Area Ground-Water Monitoring Wells.

Hanford Site Boundary

ver

200 WEST
AREA

200 EAST
AREA

42-37

41-35

40-36

40-33A

41-23

40-20

44-18

43-18

42-12A

43-9

42-10

41-11

40-12A,C

39

38-15

35-9

35-27

32-22A,B

31-11

27-8

28-15A,C

31-31,P,Q,R,S

28-52A

28-40,P,Q,R

25-55

24-46

28-34A

26-35A,C

25-34D

24-35

24-34B

28-34B

26-33

25-34A

25-33A

25-34B

25-34C

24-34C

24-33

24-34A

23-34A,B

22-35

20-41P,Q,R

20-39,P,Q,S,T

SWL &
NRDWL

20-20

21-17

19-47A

19-43

19-58

17-47

18-21

15-26

15-15C

15-15A,P,Q,R,S,T

14-38,P,Q,R

14-47

11-45A,B

10-54A

13-44

8-32

8-25

6-17

2-33A,AQ,AP,AQ,AR

S3-25

S7-34,P,Q

S12-29,P

S8-19

S14-20A,AP

S19-11

S23-25

S24-19

Yakima River

Snake Hills

Highway 240

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Plate1: Monitoring Wells At Th

The Hanford Site, Washington.

North Richland and 300 A

Area Ground-Water Monitoring Wells.

200-West Area G

●E13-12
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Area Ground-Water Monitoring Wells.

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