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Environmental Surveillance Master Sampling Schedule

L. E. Bisping

February 1996

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

Pacific Northwest National Laboratory
Operated for the U.S. Department of Energy
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PNNL-10950

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ENVIRONMENTAL SURVEILLANCE
MASTER SAMPLING SCHEDULE

L. E. Bisping

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Pacific Northwest Laboratory
Richland, Washington 99352

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SUMMARY

Environmental surveillance of the Hanford Site and surrounding areas is conducted by the Pacific Northwest National Laboratory (PNNL)^(a) for the U.S. Department of Energy (DOE). This document contains the planned 1996 schedules for routine collection of samples for the Surface Environmental Surveillance Project (SESP), Drinking Water Project, and Ground-Water Surveillance Project.

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 Operations Office, DOE/RL91-50, Rev. 1, U.S. Department of Energy, Richland, Washington.

SESP SAMPLING

Samples of environmental media are routinely collected for the SESP and analyzed to determine the quality of air, surface water, sediment, wildlife, foodstuffs, and farm products at locations on the Hanford Site and in the surrounding communities (a moratorium is in effect for soil and vegetation sampling). Data from these samples is compiled in the SESP database. In some cases, the location names in this document have been abbreviated. These abbreviated names are exactly like the names used in the SESP database.

DRINKING WATER MONITORING PROJECT SAMPLING

The responsibility for monitoring onsite drinking water falls outside the scope of the SESP. The operators of the onsite drinking water systems are responsible for monitoring the drinking water quality as defined in the National Drinking Water Standards. PNNL conducts radiological monitoring of the onsite drinking water for the onsite operator. PNNL conducts the drinking water monitoring project concurrent with the SESP to promote efficiency and

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consistency, utilize expertise developed over the years, and reduce costs associated with management, procedure development, data management, quality control, and reporting.

GROUND-WATER SURVEILLANCE PROJECT SAMPLING

The ground-water sampling section of this schedule identifies ground-water sampling events used by PNNL for environmental surveillance of the Hanford Site. Sampling is indicated as annual, semi-annual, quarterly, or monthly by the number of samples identified in the white portion of each analysis column.

Some samples are also collected and analyzed as part of other 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 ground-water samples planned by these programs are identified in this sampling schedule by a number in the shaded area of the analysis column and a project designation in the Cosample column. Sampling activities for many of these other projects are currently under review and this schedule presents only the proposed analyses.

Well sampling events may be merged to avoid redundancy in cases where sampling is planned by both PNNL environmental surveillance and another program. Thus a designation for a particular analysis to be collected by PNNL 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 Part II, Figure 2.1, Well Distribution According to Program. The pocket on the back cover of this document includes a plate of the Monitoring Well Locations at the Hanford Site. 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.

SCHEDULE CHANGES

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 impact scheduled sampling.

Therefore, this document may not be an accurate record of samples collected during the year.

SPLIT SAMPLES

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.

ADDITIONAL INFORMATION

Questions relating to the content of this document can be directed to Roger Dirkes, Manager, Surface Environmental Surveillance Project; Roger Dirkes, Manager, Drinking Water Monitoring Project; and Stuart Luttrell, Manager, Ground-Water Surveillance Project.

CONTENTS

SUMMARY	iii
FIGURES	ix
ABBREVIATIONS	x
PART I. HANFORD SURFACE ENVIRONMENTAL SURVEILLANCE	
1.0 AIR SURVEILLANCE	1
1.1 AIR - PARTICULATE FILTER	1
1.2 AIR - GASES AND VAPOR	3
2.0 SURFACE-WATER SURVEILLANCE	5
2.1 WATER - COLUMBIA RIVER	5
2.2 RIVERBANK SPRINGS	6
2.3 ONSITE PONDS	6
2.4 OFFSITE WATER SYSTEMS	7
2.5 ONSITE DRINKING WATER	7
3.0 FOODSTUFFS AND FARM PRODUCTS	9
3.1 WHOLE MILK	9
3.2 LEAFY VEGETABLES	9
3.3 VEGETABLES	9
3.4 FRUIT	10
3.5 WINE	10
3.6 ALFALFA	10
4.0 WILDLIFE	12
4.1 AQUATIC BIOTA	12
4.2 GAME BIRDS	13
4.3 DEER	13
5.0 SEDIMENT	15

CONTENTS (contd)

6.0	EXTERNAL RADIATION	17
6.1	THERMOLUMINESCENT DOSIMETERS (TLDs)	17
6.1.1	Terrestrial Locations	17
6.1.2	Columbia River Shoreline Locations	20
6.2	COLUMBIA RIVER SHORELINE RADIATION SURVEYS	21
PART II. HANFORD GROUND-WATER SURVEILLANCE		
1.0	HANFORD SITE WELLS	25
2.0	WELL DISTRIBUTION ACCORDING TO PROGRAM	46

FIGURES

PART I. HANFORD SURFACE ENVIRONMENTAL SURVEILLANCE

Figure 1.1	Air Sampling Locations	4
Figure 2.1	Surface Water and Drinking Water Sampling Locations .	8
Figure 3.1	Food and Farm Product Sampling Locations	11
Figure 4.1	Wildlife Sampling Areas	14
Figure 5.1	Sediment Sampling Locations	16
Figure 6.1	Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site	18
Figure 6.2	Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites	19
Figure 6.3	Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River	22

PART II. HANFORD GROUND-WATER SURVEILLANCE

Figure 2.1	Distribution of Wells Sampled by the Ground-Water Surveillance, CERCLA, and RCRA/Operational Monitoring Programs	46
Plate 1.	Monitoring Well Locations at the Hanford Site, Washington	

ABBREVIATIONS

FREQUENCY SYMBOLS USED

A	annually
BE	biennial (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
TE	triennial (occurring every 3rd year)
W	weekly
Numbers	The numbers in the white portion of the ground-water tables indicate the number of samples to be collected each year by the Ground-Water Surveillance Project. The number of samples to be collected by other projects are indicated in the shaded part of the columns.

ANALYSIS SYMBOLS USED

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

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
DOC	dissolved organic carbon
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, ICP-3	major metals by inductively coupled plasma spectrometry - samples unfiltered

ABBREVIATIONS (contd)

Isotopic uranium	^{234}U , ^{235}U , ^{238}U
Isotopic plutonium	^{238}Pu , $^{239-240}\text{Pu}$
LEP	samples analyzed by Low Energy Photon System
Lo ^3H	analytical procedure includes electrolytic enrichment
NRA	not routinely analyzed
SS	suspended solids
TPH	total petroleum hydrocarbons
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-UP-1	CERCLA	200-UP-1
200-ZP-1	CERCLA	200-ZP-1
300-FF-2	CERCLA	300-FF-2
300-FF-5	CERCLA	300-FF-5
OPER:EAST	Operational	200-East Area
OPER:WEST	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:Gable Mt.	Operational	Gable Mountain Pond

ABBREVIATIONS (contd)

<u>Cosample</u>	<u>Program</u>	<u>Project</u>
OPER:100-K	Operational	100-K Area
OPER:PUREX	Operational	PUREX Plant
OPER:U-14	Operational	U-14 Crib
OPER:A-37-1	Operational	216-A-37-1
OPER:U-PLT	Operational	U-Plant
OPER:U-1/2	Operational	U-1/U-2 Cribs
OPER:U-14	Operational	U-14 Crib
OPER:U-17	Operational	U-17 Crib
100 D Pond	RCRA	100 D Pond
1301-N	RCRA	1301-N Liquid Waste Disposal Facility
1324-N	RCRA	1324-N/NA site
1325-N	RCRA	1325-N Liquid Waste Disposal Facility
183-H	RCRA	183-H Solar Evaporation Basins
216-A-10	RCRA	216-A-10 Crib
216-A-29	RCRA	216-A-29 Ditch
216-A-36B	RCRA	216-A-36B Crib
B-POND	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
C018-H	RCRA	C018-H Liquid Waste Disposal Facility
LERF	RCRA	200-East Area Liquid Effluent Retention Facility
LLBG-1	RCRA	Low-Lever Waste Management Area 1
LLBG-2	RCRA	Low-Lever Waste Management Area 2
LLBG-3	RCRA	Low-Lever Waste Management Area 3
LLBG-4	RCRA	Low-Lever Waste Management Area 4
LLBG-5	RCRA	Low-Lever Waste Management Area 5
NRDWL	RCRA	Non-Radioactive Dangerous Waste Landfill
SST-A	RCRA	Single Shell Tank Waste Management Area A
SST-B	RCRA	Single Shell Tank Waste Management Area B

ABBREVIATIONS (contd)

<u>Cosample</u>	<u>Program</u>	<u>Project</u>
SST-C	RCRA	Single Shell Tank Waste Management Area C
SST-S	RCRA	Single Shell Tank Waste Management Area S
SST-T	RCRA	Single Shell Tank Waste Management Area T
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
W049-H	RCRA	W049-H Liquid Waste Disposal Facility
DOH	Washington State Department of Health	
Near Field	Near Field	100-N Area Monitoring
Performance	Performance	100-N Area Performance Monitoring
Liquid Effluent	Liquid Effluent	100-N Area Liquid Effluent Monitoring

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			Composited Sample		
	Location Number (a)	Frequency	Analyses	Composite Group	Frequency	Analyses
<u>Onsite</u>						
100 K Area	1	BW	Beta, Alpha	100 Areas	Q	Gamma Scan 90Sr, Pu(b)
100 N-1325 Crib	2	BW	Beta, Alpha		A	
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	200 E Area	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
200-ESE	6	BW	Beta, Alpha		A	
S of 200 E	7	BW	Beta, Alpha			
B Pond	8	BW	Beta, Alpha	B Pond	Q	Gamma Scan 90Sr, Pu(b), U(c)
B Pond	8	BW	Comp. Only		A	
Army Loop Camp	9	BW	Beta, Alpha	200 W South and East	Q	Gamma Scan 90Sr, Pu(b), U(c)
200 Tel. Exchange	10	BW	Beta, Alpha		A	
200 W SE	11	BW	Beta, Alpha	200 West	Q	Gamma Scan 90Sr, Pu(b), U(c)
200 W SE	11	BW	Comp. Only		A	
300 Water Intake	12	BW	Beta	300 Area	Q	Gamma Scan 90Sr, Pu(b), U(c)
300 South Gate	13	BW	Beta, Alpha		A	
300 Trench	14	BW	Beta, Alpha	300 NE	Q	Gamma Scan 90Sr, Pu(b), U(c)
300 NE	15	BW	Beta, Alpha		A	
400 E	16	BW	Beta, Alpha	400 Area	Q	Gamma Scan 90Sr, Pu(b)
400 W	17	BW	Beta, Alpha		A	
400 S	18	BW	Beta, Alpha			
400 N	19	BW	Beta, Alpha			
Wye Barricade	20	BW	Beta, Alpha	Wye Barricade	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Wye Barricade	20	BW	Comp. Only		A	
<u>Perimeter</u>						
Ringold Met Tower	21	BW	Beta, Alpha	Ringold Met Tower	Q	Gamma Scan 90Sr, Pu(b)
W End of Fir Rd	22	BW	Beta, Alpha	W End of Fir Road	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
W End of Fir Rd	22	BW	Comp. Only		A	
Dogwood Met Tower	23	BW	Beta, Alpha	Dogwood Met Tower	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Dogwood Met Tower	23	BW	Comp. Only		A	
Byers Landing	24	BW	Beta, Alpha	Byers Landing	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Battelle Complex	25	BW	Beta	Battelle Complex	A	Gamma Scan

1.1 AIR - PARTICULATE FILTER (contd)

Location	Individual Samples			Composited Sample		
	Location Number ^(a)	Frequency	Analyses	Composite Group	Frequency	Analyses
<u>Perimeter</u>						
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^(d)</u>						
Basin City School	30	BW	Beta, Alpha	Basin City School	Q	Gamma Scan 90Sr, Pu ^(b) , U ^(c)
Basin City School	30	BW	Comp. Only		A	
Leslie Groves-Rchld	31	BW	Beta, Alpha	Leslie Groves-Richland	Q	Gamma Scan 90Sr, Pu ^(b) , U ^(c)
Leslie Groves-Rchld	31	BW	Comp. Only		A	
Pasco	32	BW	Beta	Tri-Cities	Q	Gamma Scan 90Sr, Pu ^(b)
Kennewick-Ely Street	33	BW	Beta, Alpha		A	
Benton City	34	BW	Beta	Benton City	A	Gamma Scan
Edwin Markham School	35	BW	Beta, Alpha	Edwin Markham School	Q	Gamma Scan 90Sr, Pu ^(b) , U ^(c) , 241Am
					A	
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	Gamma Scan 90Sr, Pu ^(b) , U ^(c) , 241Am
				A		
Toppenish ^(d)	40	BW	Beta, Alpha	Toppenish	Q	Gamma Scan 90Sr, Pu ^(b) , U ^(c)
				A		

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

(b) Isotopic plutonium.

(c) Isotopic uranium.

(d) Community-Operated Environmental Surveillance Stations.

1.2 AIR - GASES AND VAPOR

<u>Location</u>	<u>Location Number^(a)</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 HTO)
100 N-1325 Crib	2			M	³ H (as HTO)
200 ESE	6	Q Comp	129 _I	M	³ H (as HTO)
200 Tel. Exchange	10			M	³ H (as HTO)
300 South Gate	13			M	³ H (as HTO)
300 Trench ^(c)	14			M	³ H (as HTO)
300 NE	15			M	³ H (as HTO)
400 E	16			M	³ H (as HTO)
<u>Perimeter</u>					
Ringold Met Tower	21	Q Comp	129 _I	M	³ H (as HTO)
Dogwood Met Tower	23			M	³ H (as HTO)
Byers Landing	24	Q Comp	129 _I	M	³ H (as HTO)
Prosser Barricade	27			M	³ H (as HTO)
Wahlake Slope	29			M	³ H (as HTO)
<u>Community^(d)</u>					
Basin City School	30			M	³ H (as HTO)
Leslie Groves-Rchld	31			M	³ H (as HTO)
Edwin Markham School	35			M	³ H (as HTO)
<u>Distant</u>					
Sunnyside	38			M	³ H (as HTO)
Yakima	39	Q Comp	129 _I	M	³ H (as HTO)
Toppenish ^(d)	40			M	³ H (as HTO)

(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 Stations.

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Figure 1.1. Air Sampling Locations

2.0 SURFACE-WATER SURVEILLANCE

2.1 WATER - COLUMBIA RIVER

Location ^(a)	Sample Type	Frequency	Analyses
Priest Rapids Dam	Cumulative	M Comp ^(b)	Alpha, Beta, Lo ³ H, Gamma Scan, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c) , DOH ^(d)
		Q Comp ^(b)	¹²⁹ I
	Particulate (filter)	Q Comp ^(e)	Pu ^(f) , Gamma Scan
	Soluble (resin)	Q Comp ^(e)	Pu ^(f) , Gamma Scan
Vernita	Grab	Q	WQ-NASQAN ^(g) : Temp, DO, Turbidity, pH, SS, DS, Cond, Hardness as CaCO ₃ , P, Cr, N-Kjeldahl, DOC, Fe, NH ₄ -N, NO ₃ +NO ₂ , Cl
	Grab (Transect) ^(h)	Q A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-3, Anions Cyanide, Mercury
100 N	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-3, Anions, DOH ^(j)
100 F	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-3, Anions, Mercury, DOH ^(j)
Hanford Townsite	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-3, Anions
300 Area	Cumulative	Q Comp ^(k)	Alpha, Beta, Lo ³ H, ⁹⁰ Sr, ⁹⁹ Tc, U ^(d) , Gamma Scan
	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-3, Anions, DOH ^(j)
Richland Pump house	Cumulative	W	Alpha, Beta
	Cumulative	M Comp ^(b)	Alpha, Beta, Lo ³ H, Gamma Scan, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c)
		Q Comp ^(b)	¹²⁹ I
	Particulate (filter)	Q Comp ^(e)	Pu ^(f) , Gamma Scan
	Soluble (resin)	Q Comp ^(e)	Pu ^(f) , Gamma Scan
	Grab (Transect) ⁽ⁱ⁾	Q	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-3, Anions
		A	Cyanide, Mercury
	Grab	Q	WQ-NASQAN ^(g) : Temp, DO, Turbidity, pH, SS, DS, Cond, Hardness as CaCO ₃ , P, Cr, N-Kjeldahl, DOC, Fe, NH ₄ -N, NO ₃ +NO ₂ , Cl

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

(b) Composite of weekly samples.

(c) Isotopic uranium.

(d) Duplicate sampling 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 sampling with the Washington State Department of Health collected at five sample sites along transect.

(k) composite of monthly cumulative samples (location previously referred to as Drinking Water).

2.2 RIVERBANK SPRINGS

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

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

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

(c) Isotopic uranium.

2.3 ONSITE PONDS

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
West Lake	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , U ^(b) , Gamma Scan
B Pond Extension	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , 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

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

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

(b) Samples collected by PNNL and provided to Washington State Department of Health.

(c) Isotopic uranium.

2.5 ONSITE DRINKING WATER

Location ^(a)	Sample Type	Frequency	Analyses
100 B Area-River	Grab	Q	Alpha, Beta, Lo ^3H , ^{90}Sr , DOH ^(b)
100 D Area-River	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr
Yakima Barricade	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr
FFTF	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , DOH ^(c)
300 Area	Cumulative	Q Comp ^(d)	Alpha, Beta, Lo ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(e)}$, Gamma Scan
Firing Range	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr

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

(b) Duplicate sampling during 2nd quarter with Washington State Department of Health.

(c) Duplicate sampling twice a year with Washington State Department of Health.

(d) Composite of monthly cumulative samples.

(e) Isotopic uranium.

SG96010114.9

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	⁹⁰ Sr, Gamma Scan ¹²⁹ I
Sagemoor Composite ^(b)	Q SA	⁹⁰ Sr, Gamma Scan ¹²⁹ I
Sunnyside Area	Q SA	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 LEAFY VEGETABLES

<u>Location^(a)</u>	<u>Frequency^(b)</u>	<u>Analyses</u>
East Wahluke Area	BE (1996)	⁹⁰ Sr, Gamma Scan, DOH ^(c)
Sagemoor Area	BE (1997)	⁹⁰ Sr, Gamma Scan
Riverview Area	A	⁹⁰ Sr, Gamma Scan, FDA ^(d) , DOH ^(c)
Sunnyside Area	A	⁹⁰ Sr, Gamma Scan, FDA ^(d) , DOH ^(c)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.
(b) Two samples collected within each area.
(c) Duplicate sampling with the Washington State Department of Health.
(d) Duplicate samples sent to U.S. Food and Drug Administration.

3.3 VEGETABLES

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency^(b)</u>	<u>Analyses</u>
Riverview Area	Potatoes	A	⁹⁰ Sr, Gamma Scan
Sunnyside Area	Potatoes	A	⁹⁰ Sr, Gamma Scan, FDA ^(c)
Horn Rapids Area	Potatoes	TE (1996)	⁹⁰ Sr, Gamma Scan, FDA ^(c)
Sagemoor Area	Potatoes	TE (1997)	⁹⁰ Sr, Gamma Scan, FDA ^(c)
East Wahluke Area	Potatoes	TE (1998)	⁹⁰ Sr, Gamma Scan

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.
(b) Two samples of each type collected within each area.
(c) Duplicate samples sent to U.S. Food and Drug Administration.

3.4 FRUIT

<u>Location</u> ^(a)	<u>Sample Type</u>	<u>Fre- quency</u> ^(b)	<u>Collection Period</u>	<u>Analyses</u>
Sage Moor Area	Cherries	TE (1996)	June	⁹⁰ Sr, Gamma Scan, FDA ^(c)
	Apples	TE (1997)	September	⁹⁰ Sr, Gamma Scan, FDA ^(c)
	Concord Grapes ^(d)	TE (1998)	September	⁹⁰ Sr, Gamma Scan
Sunnyside Area	Cherries	TE (1996)	June	⁹⁰ Sr, Gamma Scan, FDA ^(c)
	Apples	TE (1997)	September	⁹⁰ Sr, Gamma Scan
	Concord Grapes ^(d)	TE (1998)	September	⁹⁰ Sr, Gamma Scan
Riverview Area	Cherries	TE (1996)	June	⁹⁰ Sr, Gamma Scan
	Apples	TE (1997)	September	⁹⁰ Sr, Gamma Scan, FDA ^(c)
	Concord Grapes ^(d)	TE (1998)	September	⁹⁰ Sr, Gamma Scan
East Wahluke Area	Cherries	TE (1996)	June	⁹⁰ Sr, Gamma Scan
Mattawa Area	Apples	TE (1997)	September	⁹⁰ Sr, Gamma Scan
Cold Creek Area	Concord Grapes ^(d)	TE (1998)	September	⁹⁰ Sr, Gamma Scan

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

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

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

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

3.5 WINE

<u>Location</u> ^(a)	<u>Sample Type</u>	<u>Fre- quency</u> ^(b)	<u>Collection Period</u>	<u>Analyses</u>
Columbia Basin	White	A	December	³ H, Gamma Scan, DOH ^(c)
	Red	A	December	³ H, Gamma Scan, DOH ^(c)
Yakima Valley	White	A	December	³ H, Gamma Scan, DOH ^(c)
	Red	A	December	³ H, Gamma Scan, DOH ^(c)

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

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

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

3.6 ALFALFA

<u>Location</u> ^(a)	<u>Sample Type</u>	<u>Fre- quency</u> ^(b)	<u>Collection Period</u>	<u>Analyses</u>
Sage Moor Area	Alfalfa	BE (1997)	May	⁹⁰ Sr, Gamma Scan, FDA ^(c)
Riverview Area	Alfalfa	BE (1997)	May	⁹⁰ Sr, Gamma Scan, FDA ^(c)
Sunnyside Area	Alfalfa	BE (1997)	May	⁹⁰ Sr, Gamma Scan, FDA ^(c)
Horn Rapids Area	Alfalfa	BE (1997)	May	⁹⁰ Sr, Gamma Scan, FDA ^(c)

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

(b) Two samples collected within each area.

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

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Figure 3.1. Food and Farm Product Sampling Locations

4.0 WILDLIFE

4.1 AQUATIC BIOTA

<u>Location</u> ^(a)	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Fre- quency</u>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area to 100 D Area	Carp				
	Fillet	5	BE (1996)	June	⁹⁰ Sr, Gamma Scan
	Carcass	5	BE (1996)	June	⁹⁰ Sr, U ^(b)
	Squawfish ^(c)	1	A (1996)	June	⁹⁰ Sr, Gamma Scan, DOH
100 F Slough	Bass				
	Fillet	5	TE (1996)	May-June	⁹⁰ Sr, Gamma Scan
	Carcass	5	TE (1996)	May-June	⁹⁰ Sr, U ^(b)
	Squawfish ^(c)	1	A (1996)	June	⁹⁰ Sr, Gamma Scan, DOH
Hanford Slough	Bass				
	Fillet	5	TE (1996)	May-June	⁹⁰ Sr, Gamma Scan
	Carcass	5	TE (1996)	May-June	⁹⁰ Sr, U ^(b)
	Squawfish ^(c)	1	A (1996)	June	⁹⁰ Sr, Gamma Scan, DOH
300 Area	Carp				
	Fillet	5	BE (1996)	June	⁹⁰ Sr, Gamma Scan
	Carcass	5	BE (1996)	June	⁹⁰ Sr, U ^(b)
	Squawfish ^(c)	1	A (1996)	June	⁹⁰ Sr, Gamma Scan, DOH
Vantage	Bass				
	Fillet	10	TE (1996)	June	⁹⁰ Sr, Gamma Scan
	Carcass	10	TE (1996)	June	⁹⁰ Sr, U ^(b)
	Squawfish ^(c)	1	A (1996)	June	⁹⁰ Sr, Gamma Scan, DOH
	Carp				
	Fillet	10	BE (1996)	June	⁹⁰ Sr, Gamma Scan
	Carcass	10	BE (1996)	June	⁹⁰ Sr, U ^(b)

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

(b) Isotopic uranium.

(c) Sample collected by PNNL and provided to Washington State Department of Health.

4.2 GAME BIRDS

<u>Location^(a)</u>	<u>Species/ Sample^(b)</u>	<u>Number of Samples</u>	<u>Fre- quency</u>	<u>Collection Period</u>	<u>Analyses</u>
100 D Area to 100 H Area	Pheasant				
	Muscle	4	A	January	Gamma Scan, DOH ^(c)
	Liver	4	A	January	NRA ^(d)
	Bone	4	A	January	⁹⁰ Sr, DOH ^(c)
100 H Area to 100 F Area	Pheasant				
	Muscle	6	A	January	Gamma Scan, DOH ^(c)
	Liver	6	A	January	NRA ^(d)
	Bone	6	A	January	⁹⁰ Sr, DOH ^(c)

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

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

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

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

4.3 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
	Bone	2	December	⁹⁰ Sr
200 Ponds	Mule			
	Muscle	2	December	Gamma Scan, DOH ^(b)
	Bone	2	December	⁹⁰ Sr, DOH ^(b)
Road Kill at Onsite Locations ^(c)	Mule			
	Muscle	6	A	Gamma Scan
Background ^(c)	Mule			
	Muscle	2 (1999) ^(d)	October	Gamma Scan
	Bone	2 (1999) ^(e)	October	⁹⁰ Sr

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

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

(c) As available, according to location.

(d) One deer from the west side of the state will be provided to PNNL by Washington State Department of Health in 1996.

SG96010114.1

Figure 4.1. Wildlife Sampling Areas

5.0 SEDIMENT

<u>Location</u> ^(a)	<u>Frequency</u>	<u>Analyses</u>
<u>River</u>		
McNary 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, DOH(d)
100 F Slough	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
Hanford Slough	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
Richland	A	Gamma Scan, ⁹⁰ Sr, U(b), Pu(c), ICP-u, DOH(d)
<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
100-K Spring	A	Gamma Scan, ⁹⁰ Sr, U(b), ICP-u
100-F Spring	A	Gamma Scan, ⁹⁰ Sr, U(b), ICP-u

(a) Refer to Figure 5.1, Sediment Sampling Locations.

(b) ²³⁵U-LEP, ²³⁸U-LEP.

(c) Isotopic plutonium.

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

Figure 5.1. Sediment Sampling Locations

6.0 EXTERNAL RADIATION

6.1 THERMOLUMINESCENT DOSIMETERS (TLDs)

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

(a) Refer to Figure 6.1, 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 6.2, Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites.

(e) Community-Operated Environmental Surveillance Stations.

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Figure 6.1. Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site

SG96010114.3

Figure 6.2. Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites

6.1.2 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	Q	Ambient Dose
Below 100N Stack	5	Q	Ambient Dose
Above Tip 100N Berm	6	Q	Ambient Dose
100 N Trench Spring	7	Q	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 6.3, Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

6.2 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	Q	Exposure, Surface contamination	BICRON, GM
Below 100N Stack	5	Q	Exposure, Surface contamination	BICRON, GM
Above Tip 100N Berm	6	Q	Exposure, Surface contamination	BICRON, GM
100 N Trench Springs	7	Q	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 6.3, Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

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Figure 6.3. Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River

PART II. HANFORD GROUND-WATER SURVEILLANCE

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
1199-34-15A		1	1												1						
1199-39-15															1						
1199-39-16D	1		1					1							1			1			
1199-39-16E															1						
1199-40-16B	1	1	1	1				1							1						
199-B3-2P	1		1	1				1				1									
199-B3-2Q												1									
199-B3-46	1	1	1	1	1			1	1	1		1	1	1	1			1			100-BC-5
199-B4-2							1					1	1	1	1						
199-B9-2		1	1	1	1				1	1			1	1	1			1			100-BC-5
199-D2-5		2	1	2	2	2		1	2	2		2		1	2						100-HR-3
199-D5-13	2	2	2	2	2			2	2					2	2						100D-Pond
199-D8-4	2	2	2	2	2			2	2					2	2						100D-Pond
199-D8-5	2	2	2	2	2			2	2					2	2						100D-Pond
199-D8-6	2	2	2	2	2			2	2					2	2						100D-Pond
199-F5-1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1		DOH/100-FR-3
199-F5-3	1		1				1	1				1		1				1			
199-F5-46		1	1	1	1	1			1	1		1	1	1	1	1			1		100-FR-3
199-F5-47		1	1	1	1	1	1		1	1		1	1	1	1	1		1	1		100-FR-3
199-F5-6		1	1	1	1	1			1	1		1	1	1	1	1			1		100-FR-3
199-F7-1		1	1	1	1	1			1	1		1	1	1	1	1		1	1		100-FR-3
199-F7-3		1	1	1	1	1			1	1		1	1	1	1	1		1	1		100-FR-3
199-F8-1		1	1	1	1	1	1		1	1		1	1	1	1	1			1		100-FR-3
199-F8-2		1	1	1	1	1	1		1	1		1	1	1	1	1			1		100-FR-3
199-F8-3		1	1	1	1	1	1		1	1		1	1	1	1	1		1	1		100-FR-3
199-H3-2A	1	8	1	8				1	8	1				8	1		8				183-H
199-H3-2B	1		1					1	1				1	1			1				
199-H3-2C	2		2					2	2				2	2			1				
199-H4-11	1		1					1	1			1	1	1		1	1				
199-H4-12A	1	8	1	8				1	8					8	1						183-H
199-H4-12B	1		1					1	1				1	1		1	1				

Shaded area indicates number of samples to be collected by other programs

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample	
199-H4-12C	1	8	1	8				1	8	1			1	8	1	1	8	1				183-H
199-H4-15-CR	1		1					1	1				1	1		1	1					
199-H4-15A			2	2	2			2	2			2		2								100-HR-3
199-H4-15B	1		1					1	1				1	1		1	1					
199-H4-15CP	1		1					1	1				1	1		1	1					
199-H4-15CQ	1		1					1	1				1	1		1	1					
199-H4-18		8		8				8					8			8						183-H
199-H4-2	1		1					1	1			1	1	1			1					
199-H4-3	8		8					8					8			8						DOH/183-H
199-H4-4	8	1	1	8	1		1	1	8	1	1		1	8	1		8	1	1			183-H
199-H4-46			2	2	2	2		2	2			2		2	2			1				100-HR-3
199-H4-47			2	2	2	2		2	2			2		2	2		1	1				100-HR-3
199-H4-48			2	2	2	2		2	2			2		2	2		1	1				100-HR-3
199-H4-49			2	2	2	2		2	2			2		2	2		1	1				100-HR-3
199-H4-6	8		8					8					8			8						183-H
199-H4-9	8		8					8					8			8						183-H
199-K-106A		5	1	5	5	1	1	1	1	1	1	1	1	1	13			1	1			Oper:100K/100-KR-4
199-K-107A		5	5	5	5	1		1	1	1		1		5				1				Oper:100K/100-KR-4
199-K-108A		5	5	5	5	1		1	1	1		1		5				1				Oper:100K/100-KR-4
199-K-109A	1	5	1	5	1	1	1	1	1	1	1	1	1	1	13		1	1	1			DOH/Oper:100K/100-KR-4
199-K-110A		5	5	5	5	1		1	1	1		1		5				1				Oper:100K/100-KR-4
199-K-111A		1	1	1	1	1	1	1	1	1				1				1				100-KR-4
199-K-18		1	1	1	1	1	1	1	1	1				1				1				100-KR-4
199-K-27	2	5	2	5	2	5	1	2	1	1	1	1	1	1	2	13	1	1	1			DOH/Oper:100K/100-KR-4
199-K-28		4	4	4	4		1								4							Oper:100K
199-K-29		4	4	4	4		1								4							Oper:100K
199-K-30		5	1	5	1	1	1	1	1	1		1	1	13				1				Oper:100K/100-KR-4
199-K-32A		5	5	5	5	1		1	1	1				5				1				Oper:100K/100-KR-4
199-K-33		1	1	1	1	1	1	1	1	1		1		1		1		1	1			100-KR-4
199-K-34		5	5	5	5	1	1	1	1	1			1		5			1	1			Oper:100K/100-KR-4
199-K-36		1	1	1	1	1	1	1	1	1		1		1		1		1	1			100-KR-4

Shaded area indicates number of samples to be collected by other programs

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
199-N-14		2	2	2			2					2									DOH/100-NR-2
199-N-16			1	1				1				1								1	100-NR-2
199-N-17																			1	1	100-NR-2
199-N-18			1											1					1	1	100-NR-2
199-N-19			1									1									1301-N/100-NR-2
199-N-2	1		1	1				1				1									1325-N
199-N-26			1									1									DOH/1301-N/100-NR-2/Perf.
199-N-28	1	1						1				1							4		Performance Monitoring
199-N-3	1	1	1	1				1	1			4		1							1325-N/100-NR-2
199-N-31												4									DOH
199-N-32	1		1					1				1									1301-N
199-N-33							1	1	1												1325-N
199-N-34	1		1					1				1									Performance/Liquid Effluent
199-N-41	1		1					1				1									Near Field
199-N-46							4					4									Near Field
199-N-47							4														Near Field
199-N-48							4														
199-N-5			1									1									100-NR-2
199-N-50																					100-NR-2
199-N-51												1									100-NR-2
199-N-52												1									1301-N
199-N-54												1									1324-N
199-N-57	1		1	1				1				1									100-NR-2/Performance
199-N-59	1		1	1				1				1									1324-N
199-N-64			1	1				1				1									1324-N
199-N-67	1		1	1				1				1									1324-N
199-N-69												1									1324-N
199-N-71	1		1	1				1				1									1324-N
199-N-72	1		1	1				1													1324-N
199-N-73	1		1	1				1													1324-N
199-N-74	1		1	1				1				1									1325-N

Shaded area indicates number of samples to be collected by other programs

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso	VOA	TPH	Oil & Grease	Cosample
199-N-75			1	1				1	1			1			1						100-NR-2/Performance
199-N-76		1	1	1			1	1	1			1		1	1						DOH/100-NR-2
199-N-80												1		1							
199-N-81	1		1	1				1	1			1		1	1						1325-N/100-NR/2
199-N-92A												1									Performance
199-N-96A												1								1	Performance
199-N-99A												4									Performance
199-N-103A												12									Performance
199-N-105A												12									Performance
199-N-106A												12									Performance
299-E13-14		1	1	1	1		1	1	1	1	1	1	1	1	1	1					
299-E13-5			1	1	1		1	1	1	1		1		1	1						
299-E16-1		1	1	1						1				1	1						OPER:East
299-E16-2		1	1	1											1						OPER:PUREX
299-E17-1	1	2	1	2				1	1	1				2	2						216-A-10
299-E17-12		1	1	1							1			1	1						OPER:PUREX
299-E17-13		1	1	1							1				1						OPER:PUREX
299-E17-14	1	2	1	2				1	1	1		1		2	2						216-A-36B
299-E17-15	1	2	1	2				1	1		1			2	2						216-A-36B
299-E17-16	1	2	1	2				1	1					2	2						216-A-36B
299-E17-17	1	2	1	2				1	1	1				2	2						216-A-36B
299-E17-18	1	2	1	2				1	1	1				2	2						216-A-36B
299-E17-19	1	2	1	2				1	1					2	2						216-A-10
299-E17-2	1	1	1	1						1				1	1						
299-E17-20	1	2	1	2				1	1	1				2	2						216-A-10
299-E17-6														1							
299-E17-8		1	1							1		1		1	1						
299-E17-9	1	2	1	2				1	1	1				1	2						216-A-36B
299-E18-1	4	4	4	4				2	2	1				1	1						B-Pond
299-E23-1		1	1	1						1					1						OPER:East
299-E24-1			1							1				1	1						

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
299-E24-11			1							1				1							
299-E24-12			1							1				1							
299-E24-16	1	2	1	2				1	1	1		1			2						216-A-10
299-E24-17	1	2	1	2				1	1	1				2							216-A-10
299-E24-18	2	4	2	4				2	2	1				4		1					216-A-10/216-A-36B
299-E24-19	1	3	2	3				1	1	2				2	3						OPER:East/SST-A
299-E24-20	1	2	1	2				1	1	2				2	2						SST-A
299-E24-4		1	1	1						1					1						OPER:East
299-E24-5		1	1	1											1						OPER:East
299-E24-7		1	1	1											1						OPER:East
299-E24-8			1							1				1							
299-E25-11		1	1	1						1					1	1					OPER:PUREX
299-E25-17		1	1	1											1						OPER:East
299-E25-18	2		2					2	2	1					2						OPER-A-37-1
299-E25-19	2		2					2	2						2						OPER-A-37-1
299-E25-20	2		2					2	2						2						OPER-A-37-1
299-E25-22		1	1	1											1	1					OPER:PUREX
299-E25-23			1							1				1							
299-E25-24		1	1	1											1	1					OPER:PUREX
299-E25-25			1							1				1							
299-E25-26	1		1					1	1						1						216-A-29
299-E25-28	1		1					1	1	1					1						216-A-29
299-E25-29P			1							1				1							
299-E25-29Q			1							1				1							
299-E25-3			1							1				1							
299-E25-32	1		1					1	1						1						216-A-29
299-E25-32Q			1											1							
299-E25-33		1	1	1											1						OPER:East
299-E25-34	1		1					1	1	1					1						216-A-29
299-E25-35	1		1					1	1						1						216-A-29
299-E25-36	2	4	2	4				2	2						4						216-A-10/216-A-36B

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
299-E25-37	1	1	2	1				1						2							OPER/East/216-A-29
299-E25-39		1	1	1						1				1							OPER/East
299-E25-40	1	2	1	2				1		2			2	2							SST-A
299-E25-41	1	3	2	3				1		2			2	3							OPER/East/SST-A
299-E25-42	1		1				1	1	1	1			1	1							216-A-29
299-E25-43	1		1					1	1	1			1	1							216-A-29
299-E25-44		1							1	1			1	1							
299-E25-45		1	1						1	1			1	1							SST-A
299-E25-46	1	2	1	2				1	1	2			2	2							216-A-29
299-E25-47	1		1					1	1	1			1	1							216-A-29
299-E25-48	1		1				1	1	1	1			1	1							216-A-29
299-E25-6		1	1	1										1							OPER/PUREX
299-E25-9		1	1	1					1	1				1							OPER/PUREX
299-E26-10	1	3	2	3				1	1	1				1					2		LBG-2
299-E26-11	1	3	2	3				1	1	1				1					2		LBG-2/216-B-63
299-E26-12	1		1											1							SST-C
299-E26-13	1		1						1					1							SST-C
299-E26-2		1	1	1										1							OPER/East
299-E26-4		1	1											1							OPER/East
299-E26-8		1	1	1										1	1						OPER/East/LERF
299-E26-9	1	3	2	3				1						1				2			OPER/East/LERF
299-E27-10	2	2	2	2				2		1				2							LBG-2
299-E27-11	3	4	3	4				3						2							LBG-2/216-B-63
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							OPER/East/SST-C
299-E27-15	1	3	2	3				1		2			2	3							OPER/East/SST-C
299-E27-16	1	2	1	2				1													216-B-63
299-E27-17	3	4	3	4				3						2							LBG-2/216-B-63
299-E27-18	1	2	1	2				1		1				1							216-B-63
299-E27-19	1	2	1	2				1													216-B-63

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
299-E27-7	1	2	1	2				1			2		2	2							SST-C
299-E27-8	3	4	3	4				3						2							LBG-2/216-B-63
299-E27-9	3	4	3	4				3						2							LBG-2/216-B-63
299-E28-1		1	1	1										1							OPER:East
299-E28-12		1	1	1										1							OPER:East
299-E28-13		1	1	1						1				1							
299-E28-17		1	1	1						1				1							
299-E28-18		1	1	1										1							OPER:B-Plant
299-E28-2	1	1	1	1				1			1	1		1							OPER:East
299-E28-21		1	1	1										1							OPER:B-Plant
299-E28-23		1	1	1							1	1		1							
299-E28-24											1	1									
299-E28-25		1									1	1									
299-E28-26	2	2	2	2				2			1			2							LBG-1
299-E28-27	2	2	2	2				2			1			2							LBG-1
299-E28-28	2	2	2	2				2						2							LBG-1
299-E28-5		1	1	1										1							OPER:East
299-E28-6		1	1	1										1							OPER:East
299-E28-9		1	1	1										1							OPER:East
299-E32-10	2	2	2	2				2						2							LBG-1
299-E32-2	2	2	2	2				2						2							LBG-1
299-E32-3	2	2	2	2				2						2							LBG-1
299-E32-4	6	6	6	6				4			1			2							LBG-1/B-Pond
299-E32-5	2	3	3	3				2						3							OPER:East/LBG-1
299-E32-6	2	2	2	2				2						2							LBG-1
299-E32-7	2	2	2	2				2						2							LBG-1
299-E32-8	2	2	2	2				2			1			2							LBG-1
299-E32-9	2	2	2	2				2						2							LBG-1
299-E33-10											1			1							
299-E33-13		1				1					1			1							
299-E33-1A										1				1							

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-F	ICP-U	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso	VOA	TPH	Oil & Grease	Cosample
299-E33-26										1											LLBG-1
299-E33-28	2	2	2	2	2			2	2					2	2	2					LLBG-1
299-E33-29	2	2	2	2	2			2	2					2	2	2					LLBG-1
299-E33-30	2	2	2	2	2			2	2	1				2	2	2					LLBG-1
299-E33-31	1	2	1	2	2			1	1					2	2						SST-B
299-E33-32	1	2	1	2	2			1	1					2	2						SST-B
299-E33-33	2	4	2	4	2			2	2					2	2						SST-B/216-B-63
299-E33-34	2	2	2	2	2			2	2	1				2	2	2					LLBG-1
299-E33-35	2	2	2	2	2			2	2					2	2	2					LLBG-1
299-E33-36	2	4	2	4	2			2	2					2	2						SST-B/216-B-63
299-E33-37	1	3	2	3	2			1	1					1	1						OPER:East
299-E33-38										1											
299-E33-39										1											
299-E33-41	1	2	1	2	2			1	1					2	2						SST-B
299-E33-42	1	2	1	2	2			1	1					2	2						SST-B
299-E33-43	1	2	1	2	2			1	1					2	2						SST-B
299-E34-10	3	4	3	4	2			3	3	1				2	2						LLBG-2/216-B-63
299-E34-11	2	2	2	2	2			2	2	1			1	2	2						LLBG-2
299-E34-12	2	2	2	2	2			2	2					2	2						LLBG-2
299-E34-2	2	2	2	2	2			2	2	1				2	2						LLBG-2
299-E34-3	2	2	2	2	2			2	2					2	2						LLBG-2
299-E34-5	2	2	2	2	2			2	2					2	2						LLBG-2
299-E34-7	2	3	3	3	3			2	2	1				3	3						OPER:East/LLBG-2
299-E34-8	1	3	2	3	3			1	1					1	1						OPER:East/216-B-63
299-E34-9	2	2	2	2	2			2	2					2	2						LLBG-2
299-E35-2	1	3	2	3	2			1	1					1	1				2		OPER:East/LERF
299-W10-1	1	1	1	1	1			1	1	1			1	1	1			1			OPER:West
299-W10-13	2	2	2	2	2			2	2					2	2				3		LLBG-3/200-ZP1
299-W10-14	2	2	2	2	2			2	2					2	2				2		LLBG-3
299-W10-15	4	4	4	4	4		1	4	4					4	4			1			SST-T
299-W10-16	4	5	5	5	5			4	4					4	5						OPER:West/SST-T

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-iso.	VOA	TPH	Oil & Grease	Cosample
299-W10-17	4	4	4	4	4		4	4	4	4				4	4						SST-TX-TY
299-W10-18	4	4	4	4	4		4	4	4	4				4	4						SST-TX-TY
299-W10-19	2	2	6	2	2		4	2	2					4	6			2			LLBG-3/SST-T
299-W10-20	2	2	6	2	2		4	2	2					4	6			2			LLBG-3/SST-T
299-W10-21	2	2	6	2	2		4	2	2					4	6			2			LLBG-3
299-W10-22		4	4	4	4									2	4						SST-T
299-W10-4		1	1	1	1										1						OPER:West
299-W10-5		1	1	1	1										1						OPER:West
299-W11-10		1	1	1	1					1					1	1		1	1		OPER:West/200-ZP1
299-W11-14		1	1	1	1		1			1		1			1	1		1			OPER:West
299-W11-18		1	1	1	1		1			1					1						OPER:West
299-W11-23		1	1	1	1										1						OPER:West
299-W11-27	4	4	4	4	4			4						4	4						SST-T
299-W11-28	4	4	4	4	4			4	4	1				4	4			1			SST-T
299-W11-3		1	1	1	1					1					1						OPER:West
299-W11-30		1	1	1	1					1					1			1			200-ZP1
299-W11-31	2	2	6	2	2		4	2	2	1				4	6			2			LLBG-5/SST-T
299-W11-37		2	2	2	2										2						OPER:West
299-W11-6		1	1	1	1					1					1			1			OPER:West
299-W11-7		1	1	1	1					1					1			1			OPER:West
299-W12-1		1	1	1	1					1					1			1			OPER:West/200-ZP1
299-W14-12	4	4	4	4	4		4	4	4	4				4	4						SST-TX-TY
299-W14-2		1	1	1	1					1			1		1						OPER:West
299-W14-6		1	1	1	1					1			1		1			1			OPER:West
299-W15-12		1	1	1	1										1						OPER:West
299-W15-15	2	2	2	2	2			2							2			4			LLBG-4/200-ZP1
299-W15-16	2	2	2	2	2			2							2			2			LLBG-4
299-W15-17	2	2	2	2	2			2							2			2			LLBG-4
299-W15-18	2	2	2	2	2			2							2			4			LLBG-4/200-ZP1
299-W15-19	2	3	3	3	3			2							3				2		OPER:West/LLBG-4
299-W15-2		1	1	1	1										1						OPER:West

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
299-W15-20	2	2	2	2				2						2				2			LLBG-4
299-W15-22	4	5	5	5			4	4		4			4	5							OPER:West/SST-TX-TY
299-W15-23	2	2	2	2				2						2				2			LLBG-4
299-W15-24	2	3	3	3				2						3				2			OPER:West/LLBG-4
299-W15-32			1			1	1	1		1	1			1				1			
299-W15-4		1	1	1									1	1							OPER:West
299-W15-7		1	1	1										1							OPER:West
299-W18-1			1											1				1			
299-W18-15		1	1	1										1		1		1			OPER:West
299-W18-21	2	2	2	2				2						2				2			LLBG-4
299-W18-22	2	3	3	3				2						3				2			OPER:West/LLBG-4
299-W18-23	2	2	2	2				2						2				2			LLBG-4
299-W18-24	2	2	2	2				2						2				4			LLBG-4/200-ZP1
299-W18-25	1	3	2	3				1					2	3							OPER:West/SST-U
299-W18-26	2	2	2	2				2						2				2			LLBG-4
299-W18-27	2	2	2	2				2						2				2			LLBG-4
299-W18-28	2	2	2	2				2						2				2			LLBG-4
299-W18-30	1	2	1	2				1					2	2							SST-U
299-W18-31	1	2	1	2				1					2	2							SST-U
299-W18-32	2	2	2	2				2						2				2			LLBG-4
299-W18-33		2	2	2				2						2		2					OPER:U-14
299-W19-11		1	1	1						1				1		1					OPER:U1/2
299-W19-12		1	1	1										1							OPER:West
299-W19-14			1							1			1	1		1		1			
299-W19-15		1	1	1						1			1	1		1		1			OPER:U1/2
299-W19-16		1	1	1										1		1					OPER:U1/2
299-W19-17		1	1	1										1		1					OPER:U1/2
299-W19-18		1	1	1						1				1		1		1			OPER:U1/2
299-W19-19		2	2	2						1				2		2		1			OPER:U-17
299-W19-2		1	1	1						1				1		1		1			OPER:U-8
299-W19-20		2	2	2									4	2		6		4			OPER:U-17/200-UP-1

Shaded area indicates number of samples to be collected by other programs

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
299-W19-21		2	2	2	2			2						2	2		2				OPER-U-14
299-W19-23		2	2	2	2								4	2		6		4			OPER-U-17/200-UP-1
299-W19-24		2	2	2	2								4	2		6		4			OPER-U-17/200-UP-1
299-W19-25		2	2	2	2								4	2		6		4			OPER-U-17/200-UP-1
299-W19-26		2	2	2	2									2	2	2					OPER-U-17
299-W19-27		2	2	2	2			2						2	2	2					OPER-U-14
299-W19-28										1			4			4		4			200-UP-1
299-W19-29		1	1	1	1			1					5	1		5		4			OPER-U-PLT/200-UP-1
299-W19-3		1	1	1	1			1		1			1	1		1					OPER-U-PLT
299-W19-31	1	3	2	3	3			1					2	3							SST-U
299-W19-32	1	4	3	4	4			3					2	4		2		1			OPER-West
299-W19-4		1	1	1	1					1			1	1		1		1			OPER-West
299-W19-9		1	1	1	1									1		1					OPER-U/12
299-W21-1		1	1							1			1	1		1		1			
299-W22-10		1	1					1		1	1	1	1	1				1			
299-W22-2		1	1					1				1	1	1				1			
299-W22-20	1	1	1	1	1			1		1			1	1	1	1		1			DOH/OPER-West
299-W22-21		1	1	1	1					1			1	1		1		1			OPER-West
299-W22-22		1	1							1			1	1		1					
299-W22-39	1	3	2	3	3			1					2	3							OPER-West
299-W22-40		5	5	5	5			4		4			4	5							OPER-West/216-U-12
299-W22-41		4	4	4	4			4		4			4	4							216-U-12
299-W22-42	4	4	4	4	4			4		4			4	4							216-U-12
299-W22-43	4	4	4	4	4			4		4			4	4							216-U-12
299-W22-44	1	2	1	2	2			1					2	2							SST-S
299-W22-45	1	2	1	2	2			1					2	2							SST-S
299-W22-46	1	2	1	2	2			1		1			2	2		1		1			SST-S
299-W22-9	1	1	1	1	1			1		1			1	1		1		1			OPER-West
299-W23-10		1											1			1		1			
299-W23-11		1	1	1	1								1	1							OPER-West
299-W23-13	1	2	1	2	2			1					2	2							SST-S

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1.0 HANFORD SITE WELLS

36

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
299-W23-14	1	3	2	3				1					2	3							OPER:West/SST-S
299-W23-15	1	2	1	2				1					2	2		1		1			SST-S
299-W23-2			1	1			1					1	1	1				1			
299-W23-3				1			1						1	1		1		1			
299-W23-7			1				1						1	1		1					
299-W23-9		1	1	1									1	1		1		1			OPER:West
299-W26-10	2	2	1	2				1						1				1			216-S-10
299-W26-12	2	2	1	2				1													216-S-10
299-W26-6		1	1	1										1							OPER:West
299-W26-7	2	2	1	2				1													216-S-10
299-W26-8	2	2	1	2				1						1		1		1			216-S-10
299-W26-9	2	2	1	2				1													216-S-10
299-W27-1		4	4	4						1			1	1	4			1			OPER:222-S
299-W27-2	2	2	1	2				1						1		1		1			216-S-10
299-W6-1		1	1	1						1				1				1			OPER:West
299-W6-10	2	2	6	2			4	2		1				4	6				2		LLBG-5/SST-T
299-W6-11	2	2	2	2				2						2					2		LLBG-5
299-W6-12	2	2	2	2				2						2					2		LLBG-5
299-W6-2	2	3	7	3			4	2						4	7				2		OPER:West/LLBG-3/LLBG-5/S
299-W6-3	2	2	2	2				2						2					2		LLBG-5
299-W6-4	2	2	6	2			4	2						4	6				2		LLBNG-5/SST-T
299-W6-5	2	2	2	2				2		1			1	2					3		LLBG-5/200-ZP1
299-W6-6	2	2	2	2				2		1				2					2		LLBG-5
299-W6-7	2	2	2	2				2		1				2					2		LLBG-5
299-W6-8	2	2	2	2				2						2					2		LLBG-5
299-W6-9	2	2	6	2			4	2						4	6				2		LLBNG-5/SST-T
299-W7-1	2	2	2	2				2						2					2		LLBG-3
299-W7-10	4	4	4	4				4						4					4		LLBG-3/LLBG-5
299-W7-11	2	2	2	2				2						2					2		LLBG-3
299-W7-12	2	2	2	2				2						2					2		LLBG-3
299-W7-2	2	2	2	2				2						2					2		LLBG-3

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-I	ICP-U	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Co-sample
299-W7-3	2	2	2	2	2			2						2	2				2		LLBG-3
299-W7-4	2	2	2	2	2			2						2	2				2		LLBG-3
299-W7-5	2	2	2	2	2			2						2	2				3		LLBG-3/200-ZP1
299-W7-6	2	3	3	3	3			2						3	3				2		OPER:West/LLBG-3
299-W7-7	2	2	2	2	2			2						2	2				2		LLBG-3
299-W7-8	2	2	2	2	2			2						2	2				2		LLBG-3
299-W7-9	2	2	2	2	2			2						2	2				2		LLBG-3
299-W8-1	2	2	2	2	2			2						2	2				2		LLBG-3
299-W9-1	2	2	2	2	2			2						2	2				2		LLBG-3
3099-41-14C			1												1				1		
3099-42-16															1						
3099-47-18B															1						
399-1-1														1							
399-1-10A	1	1	1	1	1			8						1	1			8	8		300-Trench
399-1-10B								7							1			7	7		300-Trench
399-1-11	1	1	1	1	1			2	1					1	1			2	2		300-Trench/300-FF5
399-1-12	1	1	1	1	1			1						1	1			1	1		300-Trench
399-1-13A														1	1						
399-1-13B															1						
399-1-14A	1	1	1	1	1			1						1	1			1	1		300-Trench
399-1-14B															1						
399-1-15																					
399-1-16A	1	1	1	1	1			8						1	1			8	8		300-Trench
399-1-16B	1	1	1	1	1			8						1	1			8	8		300-Trench
399-1-16C																					
399-1-17A	1	1	1	1	1			1						1	1			1	1		DOH/300-Trench
399-1-17B	1	1	1	1	1			8						1	1			8	8		300-Trench
399-1-17C	1	1	1	1	1			1													
399-1-18A	1	1	1	1	1			8						1	1			8	8		300-Trench
399-1-18B								7										7	7		300-Trench
399-1-19																1					

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
399-1-2														1		1					
399-1-21A								1	1					1		1	1	1	1		300-FF5
399-1-21B															1	1					
399-2-1	1	1		1				2	1					1		2		2			300-Trench/300-FF5
399-2-3		1	1											1		1		1			
399-3-1		1	1											1		1		1			
399-3-10	1	1	1	1				2	1						1	2		2			300-Trench/300-FF5
399-3-11		1	1		1		1	1	1			1	1	1		1	1	1	1		300-FF5
399-3-12		1	1					1	1					1		1		1			300-FF5
399-3-2		1	1					1	1						1	1		1			300-FF5
399-3-3		1	1												1	1		1			
399-3-6		1	1												1	1		1			
399-4-1		1	1					1	1						2	1		1	1		300-FF5
399-4-10								1	1					1			1	1			300-FF5
399-4-11		1	1				1					1			1	1		1			
399-4-12		1	1				1	1	1						1	1	1	1			300-FF5
399-4-7														1		1		1			
399-5-1		1	1												1	1		1			
399-5-4B		1	1												1			2	2	2	
399-6-1		1	1												1			1			
399-6-2		1	1												1			2	2	2	
399-8-1		1	1												1	1		1			
399-8-3															1	1					
399-8-5A	1	1	1					1							1	1		1			
499-S0-7		1	1							1				12				1			
499-S1-8A	1	1	1					1						1				1			
499-S1-8J	1	2	1				1	1		1		1	1	12		1	1	1			DOH
699-1-18		4	4	4											4						OPER-400
699-10-E12														1				1			
699-101-48B		1	1					1						1							
699-14-38														1							

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
699-17-5	1	1	1	1			1	1	1	1	1	1	1		1			1			DOH
699-17-70			1												1						
699-18-21			1							1				1							
699-19-43			1											1							
699-19-58			1											1							
699-19-88	1		1				1	1						1							
699-2-3		4	4	4										4							OPER:400
699-2-7		4	4	4										4							OPER:400
699-20-20	1	1	1	1			1	1		1		1	1	1				1			DOH
699-20-E12														1							
699-20-E12P														1							
699-20-E5A			1											1							
699-21-6		1	1							1				1							
699-22-35	4	4	4	4				4						4					4		SWL
699-22-70	1		1				1	1						1							
699-23-34A	4	4	4	4				4						4					4		SWL
699-23-34B	4	4	4	4				4						4					4		SWL
699-24-1P														1							
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														1							
699-25-33A	2	2	2	2				2						2					2		NRDWL
699-25-34A	2	2	2	2				2						2					2		NRDWL
699-25-34B	2	2	2	2				2						2					2		NRDWL
699-25-34C	4	4	4	4				4						4					4		SWL
699-25-34D	2	2	2	2				2						2					2		NRDWL
699-25-70										1				1							
699-26-15A			1							1				1							

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Antions	Beta	C-14	Cyanide	Gamma Scan	ICP-F	ICP-U	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso	VOA	TPH	Oil & Grease	Cosample
699-26-33	2	2	2	2	2				2					2	2			2			NRDWL
699-26-34A	2	2	2	2	2				2					2	2			2			NRDWL
699-26-34B	2	2	2	2	2				2					2	2			2			NRDWL
699-26-35A	6	6	6	6	6				6	1				6	6			6			NRDWL/SWL
699-26-35C	2	2	2	2	2				2	1				2	2			2			NRDWL
699-26-89			1											1	1						
699-27-8										1				1	1						
699-28-40														1	1						
699-29-4										1				1	1						
699-29-78														1	1						
699-3-45			1											1	1						
699-31-11			1							1				1	1						
699-31-31	1	2	2	2			2	1		2				2	2						DOH
699-31-31P										1				1	1						
699-32-22A	1	1								1				1	1						
699-32-22B	1	1								1				1	1						
699-32-43	1	1	1	1			1	1		1			1	1	1						DOH
699-32-62		1	1	1						1				1	1						OPER:600
699-32-70B										1				1	1						
699-32-72A										1				1	1						
699-33-42		1								1				2	2						
699-33-56														1	1						
699-34-41B		1												1	1						
699-34-42	1	1	1	1						1				1	1						OPER:600
699-34-61										1				1	1						
699-34-88		1	1	1										1	1			1			200-ZP1
699-35-66A		1								2				2	2						
699-35-70	1	1	1	1	1		1	1	1	2		1	1	2	2	1	1				DOH/OPER:600
699-35-78A														1	1			1			
699-35-9							1			1				1	1						
699-36-46Q														1	1						

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1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
699-36-61A		1	1	1						1				1	1						OPER:600
699-36-70A	4	4	4	4				4					4	4							216-U-12
699-36-93			1											1							
699-37-43		1	1	1						1				1	1						OPER:600
699-37-82A		1	1	1											1			1	1		OPER:600/200-ZP1
699-37-E4										1				1							
699-38-15			1				1			1				1							
699-38-65	1	1	1	1			1	1		1			1	1		1	1	1	1		DOH
699-38-70		1	1	1	1					1			1	1	1	1	1	1	1		OPER:600/200-ZP1
699-39-39														1							
699-39-79		1	1	1										1	1		1		1	1	OPER:600/200-ZP1
699-40-1			1							1				1							
699-40-33A										1				1							
699-40-36	4	4	4	4		4	4	4	4	4	4	4		4		4		8			W049-H
699-40-40A	4	4	4	4				2													B-Pond
699-40-62		1	1	1	1					1			1	1	1						OPER:600
699-41-1	1	2	2	2			2	1		2			2	2							DOH
699-41-23			1				1			1				2							
699-41-35	4	4	4	4		4	4	4	4	4	4	4		4		4		8			W049-H
699-41-40	4	4	4	4				2		1				1							B-Pond
699-41-42	4	4	4	4				2													B-Pond
699-42-12A			1				1			1				2							
699-42-37	4	4	4	4		4	4	4	4	4	4	4		4		4		8			W049-H
699-42-39A										1				1							
699-42-39B	4	4	4	4				2		1				1							B-Pond
699-42-40C	1		1					1		1				1							
699-42-41	4	4	4	4				2													B-Pond
699-42-42B	4	4	4	4				2		1				1							B-Pond
699-42-E9B	1	1	1	1			1	1		1					1		1				DOH
699-43-3										1				1							
699-43-40	4	4	4	4				2		1				1							B-Pond

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Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso	VOA	TPH	Oil & Grease	Cosample
699-43-41E	4	4	4	4	4	1	1	2	3	1				1							B-Pond
699-43-41G	4	4	4	4	4	1	1	2	2												B-Pond
699-43-43	1		1	1	1	1	1	1	1	1				1	1						216-A-29
699-43-45	5	4	5	4	4	1	1	3	3	1				1	1						216-A-29/B-Pond
699-43-89			1											1				1			
699-44-39B	4	4	4	4	4	1	1	2	2												B-Pond
699-44-43B	4	4	4	4	4	1	1	2	2												B-Pond
699-44-64		1	1	1	1	1	1	1	1	1			1	1	1	1		1			OPER-600
699-45-42		1	1	1	1					1			1	1	1						OPER-600
699-45-69A		1	1	1	1					1			1	1	1			1			OPER-600
699-46-21B														1							
699-46-4										1				1							
699-47-35A							1			1				1							
699-47-5										1				1							
699-47-60														1							200-ZP1
699-48-71		1	1	1	1	1	1	1	1	1				1	1			1	1		OPER-600/200-ZP1
699-48-77A	4	4	4	4	4	4	4	4	4	4		4	4	1	4		4	1	8		C018-H
699-48-77C	4	4	4	4	4	4	4	4	4	4		4	4		4		4		8		C018-H
699-48-77D	4	4	4	4	4	4	4	4	4	4		4	4		4		4		8		C018-H
699-48-7A														1							
699-49-100C	1	1	1	1	1	1	1	1	1	1					1		1	1			DOH
699-49-13E			1							1				1							
699-49-28							1							1							
699-49-57A			1	1	1	1	1	1	1	1			1	1							
699-49-79		1	1	1	1									1				1			OPER-600
699-50-53A			1	1	1	1	1			1			1	1							
699-50-53B	1	1	1	1	1	1	1	1					1	1		1	1				
699-50-85			1											1							
699-51-46			1									1		1							
699-51-63			1	1			1			1				1					1		200-ZP1
699-51-75			1											1				1			

Shaded area indicates number of samples to be collected by other programs

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Cosample
699-52-19			1											1				1			
699-52-46A		1	1	1	1							1		1							OPER:600
699-52-54			1			1	1			1		1	1	1							
699-53-47A			1	1								1		1							
699-53-47B	1	1	1	1	1		1			1		1	1	1	1		1				DOH/OPER:Gable Mt.
699-53-48A		1	1	1	1	1						1		1							OPER:600
699-53-50		1	1	1	1									1							OPER:600
699-53-55A			1			1	1						1	1	1						
699-54-34														1							
699-54-48		1	1	1	1							1		1							OPER:600
699-54-49			1	1	1							1		1							OPER:Gable Mt.
699-55-50C			1	1	1							1		1							OPER:Gable Mt.
699-55-57		1	1			1	1			1			1	1							
699-55-60A		1	1	1	1									1							OPER:600
699-55-76			1	1											1						
699-55-89			1											1				1			
699-56-43		1	1	1	1									1							OPER:600
699-56-53		1	1	1	1	1	1					1	1	1	1						OPER:600
699-57-59			1							1			1	1							
699-58-24			1											1							
699-59-55		1	1	1	1									1							OPER:600
699-59-58		1	1	1	1									1							OPER:600
699-60-60										1				1							
699-61-62	1		2	1		1	1	1		2			2	2							
699-61-66			1			1	1			1			1	1							
699-62-43F															1						
699-63-58			1							1				1							
699-63-90	1	1	1	1	1	1	1	1	1	1		1	1	1	1			1			100-BC-5
699-64-27			1											1							
699-64-62			1							1			1	1							
699-65-50														1							

Shaded area indicates number of samples to be collected by other programs

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-f	ICP-u	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso	VOA	TPH	Oil & Grease	Cosample
699-65-72		1	1	1	1	1		1	1	1		1	1	1	1			1			100-BC-5
699-66-23			1											1							
699-66-39														1							
699-66-58			1										1	1	1						
699-66-64		1	1	1	1	1		1	1	1		1	1	1	1						100-BC-5
699-72-73		1	1	1	1	1		1	1	1		1	1	1	1			1			100-BC-5
699-72-88	1	1	1					1						1				1			
699-77-36		1	1	1	1	1		1	1	1		1	1	1	1			1	1		100-FR-3
699-8-17			1							1				1							
699-8-25										1				1							
699-81-58			1											1							
699-83-47		1	1	1	1	1		1	1	1		1	1	1	1			1			100-FR-3
699-84-35A								1						1							
699-87-55		1						1	1					1							
699-89-35		1	1					1						1							
699-9-E2	1	1	1	1			1							1				1			
699-90-45								1						1							
699-97-43		2	2	2	2	2		2	2	2		2	2	2	2	1					100-HR-3
699-ATH			1																		
699-S11-E12A		1	1	1									1	1	1	1		1			
699-S11-E12AP			1					1							1	1					
699-S12-29			1											1							
699-S12-3														1							
699-S19-11			1											1							
699-S19-E13	1	2	2				1						1	2							
699-S19-E14														1							
699-S22-E9A														1							
699-S22-E9B														1							
699-S27-E14		2													2	1		2			
699-S27-E9A			1												1			1			
699-S27-E9B			1												1			1			

Shaded area indicates number of samples to be collected by other programs

1.0 HANFORD SITE WELLS

Well	Alkalinity	Alpha	Anions	Beta	C-14	Cyanide	Gamma Scan	ICP-I	ICP-U	I-129	Pu-Isotopic	Sr-90	Tc-99	H-3	Lo H-3	Uranium	Uranium-Iso.	VOA	TPH	Oil & Grease	Co-sample
699-S28-E0			1												1			1			
699-S28-E12			1										1		1	1		1			
699-S29-E11			1															1			100-EM1
699-S29-E12			1												1			1			100-EM1
699-S29-E16A															2	1		1			
699-S29-E16B															1						
699-S29-E16C															1						
699-S3-25			1											1							
699-S3-E12														1							
699-S30-E10A	1	1	1										1		1	1		1			100-EM1
699-S30-E15A	1	1	1	1			1								1		1				DOH
699-S31-1	1	1	1	1			1								1		1				DOH
699-S31-E10B	1	1	1										1		1	1		1			
699-S31-E10E	1	1	1										1			1		1			
699-S31-E8A	1	1	1	1			1	1					1		1	1	1	1			DOH
699-S32-E13A			1												2			2			
699-S32-E13B	1	1	1												1			1			
699-S34-E10	1	1	1					1							1	1		1			
699-S36-E13A			1												1			1			
699-S37-E14	1	1	1	1			1								1			1			DOH
699-S38-E12A			1												1			1			
699-S40-E14			1												1						
699-S41-E13A			1												1			1			
699-S43-E12			1												1						
699-S6-E14A	1	1	1	1	1		1					1	1	1		1		1			
699-S6-E4B		2	1	2	2		1					1	1	1			2	1			
699-S6-E4D		2	1	2	2		1	1		1		1	1	1			2	1			
699-S8-19			1											1							

Shaded area indicates number of samples to be collected by other programs

2.0 WELL DISTRIBUTION ACCORDING TO PROGRAM

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

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100-BC Area Ground-Water Monitoring Wells.

100-K Area Ground-Water Monitoring Wells.

0107-78

1000 Feet
500
400 Meters

Species	Number of Fish
0	~350
1000	~300
2000	~350

Highway 24

Ground-Water Monitoring Wells.

100-DDR Area Ground-Water Monitoring Wells.

er Monitoring Wells.

100-H Area Ground-Water Monitoring Wells

Water Monitoring Wells.

100-F Area Ground-Water Monitoring

100-F Area Ground-Water Monitoring Wells.

29-70A.P.O.
29-70C.P.O.R.S.T.U.
29-78
29-100

U-Pond

200-West
Area

61-75.P.O.

65-70.P

Gable Bu

67-77

71-77

72-75

100-BC
Area

100
Area

Yakima

Mt. Ridge

Highway 243

43-91A.P.O.
43-91C.P.R.S.T.U.
43-91D
43-88
43-84

57-83A
57-83B.P.O.R.
57-83C

67-80.R.P.

67-82
62-83

37-82
37-82A

39-64C.P.O.R.S.T.U.

40-84

42-100A.C
42-85

65-95

65-89.P

63-92
63-90

65-95

66-91

66-103

68-105

72-85

72-92

72-85

a Ground-Water Monitoring Wells.

200-East Area Ground-W

36-51A
428-51B,P

East Area Ground-Water Monitoring Wells.

200-West Area

Yakima Ridge

U-Pond

Rattlesnake

Hanford Site Boundary

43-81A,P,Q
43-81C,D,P,R,S,T,U
43-81D

43-88
43-84

39-84C,P,Q,R,S,T,U

37-92
37-93

34-88

31-84B

29-83

26-83B,P,Q,R

26-83A

29-78
29-70A,P,Q
29-70C,P,Q,R,S,T,U

25-70

19-88

20-82

17-70

53-103

49-100AC

48-86

50-85

51-75,P,Q

55-95

55-89,P

55-76,P

55-70,P

0 100 200 300 400 Meters

0 100 200 300 400 Feet

034-38A

Hanford Site Boundary

Plate 1: Monitoring Wells At

ells At The Hanford Site, Washingto

No

300
Area

North Richland and 300 Area Ground-Water Monitoring Wells.

Ground-Water Monitoring Wells.