Master Schedule for CY-1982 Hanford Environmental Surveillance Routine Program

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December 1981

**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**

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PACIFIC NORTHWEST LABORATORY
operated by
BATTELLE
for the
UNITED STATES DEPARTMENT OF ENERGY
Under Contract DE-AC06-76RLO 1830

Printed in the United States of America
Available from
National Technical Information Service
United States Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22151

Price: Printed Copy \$ _____ *: Microfiche \$3.00

*Pages	NTIS
	Selling Price
001-025	\$4.00
026-050	\$4.50
051-075	\$5.25
076-100	\$6.00
101-125	\$6.50
126-150	\$7.25
151-175	\$8.00
176-200	\$9.00
201-225	\$9.25
226-250	\$9.50
251-275	\$10.75
276-300	\$11.00

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HANFORD ENVIRONMENTAL SURVEILLANCE
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Richland, Washington 99352

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MASTER SCHEDULE FOR CY-1982
HANFORD ENVIRONMENTAL SURVEILLANCE ROUTINE PROGRAM

INTRODUCTION

This report provides the current schedule of data collection for the routine environmental surveillance program at the Hanford Site. The program is sponsored by the Department of Energy and is conducted by the Environmental Evaluations Section of Pacific Northwest Laboratory.^(a)

The environmental surveillance program objectives are to evaluate and report the levels of radioactive and nonradioactive pollutants in the Hanford environs, as required in DOE Order 5484.1. The data collected are available in general reports issued by the Environmental Evaluations staff. Ground-water data and evaluations are reported in the series, "Radiological Status of the Ground Water Beneath the Hanford Project." The latest issue is PNL-3768 for CY-1980. Data from locations within the plant boundaries are presented in the annual report series, "Environmental Status of the Hanford Site." The most recent report in this series is PNL-3729 for CY-1980. Data from offsite locations are presented annually in the "Environmental Surveillance at Hanford" series. The latest report in this series is PNL-3728 for CY-1980. Air quality and water quality data are obtained through a separate program and reported by the Hanford Environmental Health Foundation.

The routine sampling schedule provided herein does not include samples which are planned to be collected during FY-1982 in support of special studies or for quality control purposes. In addition, the routine program outlined in this schedule is subject to modification during the year in response to changes in Site operations, program requirements, or unusual sample results.

It is intended that all samples be collected as scheduled. However, several factors including bad weather, mechanical breakdowns, unavailability of sample media (particularly wildlife samples) and vandalism may prevent the intended schedule from being met in every case.

(a) Operated by Battelle Memorial Institute.

Frequency Symbols Used

D - Daily	M Comp. - Monthly Composite
W - Weekly	Q - Quarterly
BW - Biweekly (every 2 wk)	A - Annually
M - Monthly	SA - Semiannually
BM - Bimonthly (every 2 mo)	NRA - Not Routinely Analyzed

SCHEDULE

I. Air

<u>Location</u>	<u>EMA #</u>	<u>Frequency</u>	<u>Filter</u>	<u>Composite^(a)</u>
			<u>Analyses</u>	<u>Group</u>
<u>Onsite</u>				
100-K	0058	BW	Beta	100 Areas
100-N (WPPSS)	1529	BW	Beta	100 Areas
100-D	1074	BW	Beta	100 Areas
100-A Fire Station	6154	BW	Beta	100 Areas
200 WEC	0046	BW	Beta, Alpha	200 West
200 WNE	1370	BW	Beta	200 West
200 WWC	0045	BW	Beta	200 West
Redox	0028	BW	Beta, Alpha	200 West
200 ESE	0043	BW	Beta, Alpha	200 East
200 ENC	1401	BW	Beta, Alpha	200 East
200 EEC	0042	BW	Beta, Alpha	200 East
200 EWC	0041	BW	Beta	200 East
Hanford	0057	BW	Beta	IE
Wye Barricade	0924	BW	Beta, Alpha	IE
400 E	6308	BW	Beta, Alpha	400 Area
400 W	6455	BW	Beta, Alpha	400 Area
400 S	6456	BW	Beta, Alpha	400 Area
400 N	6457	BW	Beta, Alpha	400 Area
3705 Building	1531	BW	Beta	300 Area
ACRMS	1793	BW	Beta	300 Area
300 SW Gate	6148	BW	Beta	300 Area
300 South Gate	6150	BW	Beta, Alpha	300 Area
300 Pond	1543	BW	Beta	300 Area
RRC CP#64	6182	BW	Beta, Alpha	ISE
1100 Area	6396	BW	Beta	ISE
Prosser Barricade	0055	BW	Beta, Alpha	ISW
ERC	0929	BW	Beta	ISW
Rattlesnake Springs	0972	BW	Beta	ISW
Yakima Barricade	1650	BW	Beta	INW
Vernita Bridge	1651	BW	Beta	INW

(a) Composite group for filter analyses shown on page 7.

I. Air (contd)

<u>Location</u>	<u>EMA #</u>	<u>Frequency</u>	<u>Filter</u>	<u>Composite</u> ^(a)
			<u>Analyses</u>	<u>Group</u>
<u>Offsite</u>				
Wahluke Slope #2	1551	BW	Beta	INW
Berg Ranch	1405	BW	Beta, Alpha	INE
Othello	1652	BW	Beta	INE
Connell	1653	BW	Beta	INE
Cooke Brothers	1118	BW	Beta	INE
Wahluke Wm.	1119	BW	Beta	INE
Fir Road	6391	BW	Beta	ISE
Pettett	6351	BW	Beta	ISE
Byers Landing	0247	BW	Beta, Alpha	ISE
Pasco	1654	BW	Beta	ISE
Richland	0054	BW	Beta, Alpha	ISE
Benton City	0029	BW	Beta, Alpha	ISW
Moses Lake	0960	BW	Beta	ONE
Washtucna	0959	BW	Beta	ONE
Walla Walla	0262	BW	Beta	OSE
McNary Dam	0958	BW	Beta	OSE
Sunnyside	0964	BW	Beta	OW

(a) Composite group for filter analyses shown on page 7.

I. Air (contd)

<u>Location</u>	<u>Charcoal Cartridge</u>			<u>Tritium Cartridge</u>		
	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>
<u>Onsite</u>						
100-K	1581	M	NRA			
100-N (WPPSS)	1661	M	NRA			
100-D	1582	BW	131 _I	6335	BW	HTO
100-D				6502	BW	HT
100-A Fire Station	6155	M	NRA			
200 WEC	1662	M	NRA			
200 WNE	6272	M	NRA			
200 WWC	6152	M	NRA			
Redox	1663	M	NRA			
200 ESE	1664	BW	131 _I	6201	BW	HTO
200 ESE				6503	BW	HT
200 ENC	1665	M	NRA			
200 EEC	1361	M	NRA			
200 EWC	6273	M	NRA			
Hanford	1666	M	NRA			
Wye Barricade	1584	M	NRA			
400 E	6309	BW	131 _I	6428	BW	HTO
400 W	6458	BW	131 _I			
400 S	6459	BW	131 _I			
400 N	6460	BW	131 _I			
3705 Building	1669	M	NRA			
ACRMS	1795	M	NRA			
300 SW Gate	6149	BW	131 _I			
300 South Gate	6151	M	NRA			
300 Pond	6239	M	NRA			
RRC CP#64	6183	M	NRA			
1100 Area	6397	M	NRA			
Prosser Barricade	6248	M	NRA			
ERC	1585	M	NRA			
Rattlesnake Springs	1586	M	NRA			
Yakima Barricade	1667	M	NRA			
Vernita Bridge	1668	M	NRA			
<u>Offsite</u>						
Wahluke Slope #2	1671	M	NRA			
Berg Ranch	1672	M	NRA			
Othello	1673	M	NRA			

I. Air (contd)

<u>Location</u>	<u>Charcoal Cartridge</u>			<u>Tritium Cartridge</u>		
	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>
Connell	1674	M	NRA			
Cooke Brothers	1675	M	NRA			
Wahluke wm.	1676	M	NRA			
Fir Road	6392	BW	131 _I	6393	BW	HTO
Fir Road				6513	BW	HT
Pettett	6352	BW	131 _I			
Byers Landing	0246	BW	131 _I			
Pasco	1678	M	NRA			
Richland	0231	BW	131 _I	6207	BW	HTO
Richland				6514	BW	HT
Benton City	1670	BW	131 _I	6411	BW	HTO
Benton City				6515	BW	HT
Moses Lake	1682	M	NRA			
Washtucna	1683	M	NRA			
Walla Walla	0261	M	NRA			
McNary Dam	1684	M	NRA			
Sunnyside	1680	BW	131 _I			

I. Air (contd)

<u>Composite Group</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>
200 East	1749	M	Gamma scan
200 ENC	0080	Q	^{90}Sr , Pu (a)
200 EWC			
200 ESE			
200 EEC			
200 West	1751	M	Gamma scan
200 WEC	0081	Q	^{90}Sr , Pu (a)
200 WWC			
Redox			
200 WNE			
300 Area	1752	M	Gamma scan
300 Area, 3705 Building	0082	Q	^{90}Sr , Pu (a)
ACRMS			
300 South Gate			
300 Southwest Gate			
300 Pond			
400 Area	6465	M	Gamma scan
400 E	0086	Q	^{90}Sr , Pu (a)
400 W			
400 S			
400 N			
100 Areas	1753	M	Gamma scan
100 Area Fire Station	0083	Q	^{90}Sr , Pu (a)
100-K			
100-N			
100-D			
Inner Eastern Sector	1754	M	Gamma scan
Hanford	0085	Q	^{90}Sr , Pu (a)
Wye Barricade			

(a) Isotopic Pu

I. Air (contd)

<u>Composite Group</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>
Inner Southeast Sector	1745	M	Gamma scan
RRC CP #64	0076	Q	^{90}Sr , Pu (a)
1100 Area			
Richland			
Pasco			
Byers Landing			
Fir Road			
Pettett			
Inner Southwest Sector	1746	M	Gamma scan
Rattlesnake Springs	0077	Q	^{90}Sr , Pu (a)
ERC			
Benton City			
Prosser Barricade			
Inner Northwest Sector	1747	M	Gamma scan
Yakima Barricade	0078	Q	^{90}Sr , Pu (a)
Vernita			
Wahlake #2			
Inner Northeast Sector	1743	M	Gamma scan
Othello	0074	Q	^{90}Sr , Pu (a)
Connell			
Berg Ranch			
Wahlake Watermaster			
Cooke Brothers			
Outer Northeast Sector	1742	M	Gamma scan
Moses Lake	0073	Q	^{90}Sr , Pu (a)
Washtucna			
Outer Southeast Sector	1744	M	Gamma scan
Walla Walla	0075	Q	^{90}Sr , Pu (a)
McNary			
Outer Western Sector	1748	M	Gamma scan
Sunnyside	0079	Q	^{90}Sr , Pu (a)

(a) Isotopic Pu

II. COLUMBIA RIVER

<u>Sample Type</u>	<u>Location</u>	<u>EMA #</u>	<u>Frequency</u>	<u>Analyses</u>
<u>"Filter-Resin"</u>	Priest Rapids Dam Resin Column	6394	BW	Gamma Scan (^{131}I)
		0103	M comp	^{129}I
		0104	Q comp	Pu
	Filters	6395	BW	Gamma scan (^{131}I)
		0105	Q comp	Pu
	300 Area Forebay Resin Column	6384	BW	Gamma scan (^{131}I)
		0106	M comp	^{129}I
		0107	Q comp	Pu
		6385	BW	Gamma scan (^{131}I)
		0108	Q comp	Pu
	<u>Cumulative</u> Priest Rapids	1265	BW	^3H (low level)
		0111	M comp	Alpha, Beta, U,
				Gamma scan
		0165	Q	^{89}Sr , ^{90}Sr
	Richland	1000	BW	^3H (low level)
		0110	M comp	Alpha, Beta, U,
				Gamma scan
		0100	Q	^{89}Sr , ^{90}Sr
<u>Grab</u>	Vernita	1616	W	NO_3^-
		1204	W	pH, Diss O_2 , Turbidity
		1373	M*	Coliforms, Fecal coliforms, BOD
	Richland Forebay	1617	W	NO_3^-
		1365	M*	Coliforms, BOD, Fecal coliforms
		6429	W	pH, Diss O_2 , Turbidity

* Performed by HEHF.

III. SANITARY WATER

<u>Sample Type</u>	<u>Location</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>
<u>Cumulative</u>	Richland	0101	M comp	Gamma scan

IV. SURFACE WATER

<u>Location</u>	<u>EMA #</u>	<u>Frequency</u>	<u>Analyses</u>
Gable Mountain Pond	1054	Q	Alpha, Beta, Gamma scan, ⁹⁰ Sr
West Lake	6133	Q	Alpha, Beta, Gamma scan, ⁹⁰ Sr
B Pond	0015	Q	Alpha, Beta, Gamma scan, ⁹⁰ Sr
FFTF	6467	Q	Alpha, Beta, Gamma scan (²² Na)

V. GROUND WATER

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
<u>600 Area Wells</u>			
(699-)S0-7	*4817	Q	³ H, NO ₃ , B, γ
S0-8	*4818	Q	³ H, NO ₃ , B, γ
S1-7B	*4819	Q	³ H, NO ₃ , B, γ
S3-25	4787	Q	³ H, NO ₃
		A	WQ
S3-E12	4553	Q	³ H, NO ₃
		A	WQ
S6-E4 B	4502	Q	³ H, NO ₃ , U
S6-E4 D	4504	Q	³ H, NO ₃ , U
S6-E14	4580	Q	³ H, NO ₃
S7-34	4427	Q	³ H, NO ₃
S8-19	4421	Q	³ H, NO ₃
S11-E12A O	4552	Q	³ H, NO ₃
S11-E12A P	4747	Q	³ H, NO ₃
S12-3	4424	Q	³ H, NO ₃
S12-29	4592	Q	NO ₃
S14-20 A	4535	Q	NO ₃
S18-51	4852	Q	NO ₃ , F
S19-11	4780	SA	NO ₃
S19-E13	4802	Q	NO ₃ , F, U
		A	WQ
S24-19	4510	SA	NO ₃
S27-E14	4413	M	NO ₃ , U, F, Cr ⁺⁶
S29-E12	4803	Q	NO ₃ , F, U
S30-E15 A	4804	Q	NO ₃ , F, U, Cr ⁺⁶
S31-1 P	4745	Q	³ H, NO ₃
		A	WQ
1-18	4513	Q	³ H, NO ₃
2-3	*4423	M	³ H, NO ₃
		Q	B, γ
		A	WQ

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO₃, HCO₃, K, B, NO₃-N, Cl, SO₄-S, and dissolved solids.

* FFTF Preoperational Survey.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)2-7	4758	A	WQ
2-33	4526	Q	^3H , NO_3
3-45	4593	Q	NO_3
		SA	^3H
4-E6	4620	Q	^3H , NO_3
8-17	4426	Q	B, ^3H , NO_3 , γ
8-25	4788	Q	B, ^3H , NO_3 , γ
8-32	4420	Q	^3H , NO_3
9-E2	4519	Q	^3H , NO_3
10-E12	4581	Q	^3H , NO_3
10-54	4428	A	WQ
13-1 C	4854	Q	^3H , NO_3
		SA	γ
13-64	4429	Q	^3H , NO_3
14-E6 P	4700	Q	^3H , NO_3
14-E6 O	4701	Q	^3H , NO_3
14-E6 R	4702	Q	^3H , NO_3
14-E6 S	4703	Q	^3H , NO_3
14-E6 T	4766	Q	^3H , NO_3
14-38	4527	Q	^3H , NO_3
14-47	4608	Q	^3H , NO_3
		A	WQ
15-15 B	4810	Q	B ^3H , NO_3 , γ
15-26	4464	Q	B ^3H , NO_3 , γ
		A	WQ
17-5	4422	Q	B ^3H , NO_3 , γ
17-70	4531	Q	^3H , NO_3
19-43	4417	Q	^3H , NO_3
		A	WQ

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, $\text{NO}_3\text{-N}$, Cl, $\text{SO}_4\text{-S}$, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)19-47 A	4609	Q	^3H , NO_3
19-58	4528	Q	NO_3
19-88	4522	Q	NO_3
		A	F
20-E5 A	4838	Q	^3H , NO_3 , γ
		A	WQ
20-E5 P	4705	Q	^3H , NO_3
20-E5 Q	4706	Q	^3H , NO_3
20-E5 R	4707	Q	^3H , NO_3
20-E12 O	4567	Q	^3H , NO_3
20-E12P	4611	Q	^3H , NO_3
20-20	4418	Q	B, ^3H , NO_3 , γ
20-39	4559	Q	^3H , NO_3
		A	γ
22-70	4595	Q	^3H , NO_3
		A	γ
20-82	4529	Q	^3H , NO_3
23-7	4855	M	^3H , NO_3
24-1 P	4710	Q	^3H , NO_3
24-1 Q	4711	Q	^3H , NO_3
24-1 R	4712	Q	^3H , NO_3
24-1 S	4713	Q	^3H , NO_3
24-1 T	4764	Q	^3H , NO_3
24-33	4416	Q	B, ^3H , NO_3 , γ
24-46	4525	Q	^3H , NO_3
25-55	4415	Q	^3H , NO_3
25-70	4452	SA	^3H , NO_3
		A	WQ
26-15	4518	Q	B, ^3H , NO_3 , γ
		A	WQ
26-89	4598	SA	NO_3
		A	WQ
27-4	4857	M	^3H , NO_3

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, NO_3 -N, Cl, SO_4 -S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)27-8	4557	Q	B, ³ H, NO ₃ , γ
29-78	4594	Q	³ H, NO ₃
28-40 O	4481	Q	³ H, NO ₃ , γ
28-40 P	4754	Q	³ H, NO ₃ , γ
28-52	4521	Q	³ H, NO ₃ , γ
31-31 O	4471	Q	³ H, NO ₃ , γ
31-31 P	4738	Q	³ H, NO ₃ , γ
31-53 B	4520	SA	³ H, NO ₃ , γ
		A	WQ
32-22	4794	Q	B, ³ H, NO ₃ , γ
32-42	4777	Q	³ H, NO ₃
32-43	4778	Q	³ H, NO ₃ , γ
32-62	4550	Q	³ H, NO ₃ , α
32-70	4492	Q	B, ³ H, NO ₃ , γ
32-72	4491	Q	³ H, NO ₃ , γ
32-77	4446	Q	B, ³ H, NO ₃ , γ
33-42	4779	Q	B, ³ H, NO ₃ , γ
33-56	4523	Q	B, α, ³ H, NO ₃ , γ
34-39 A	4448	Q	B, ³ H, NO ₃ , γ
34-41	4789	Q	³ H, NO ₃ , γ
34-42	4790	Q	B, ³ H, NO ₃ , γ
		A	WQ
34-51	4414	Q	B, ³ H, NO ₃ , γ
34-88	4439	Q	³ H, NO ₃
35-9	4419	Q	B, ³ H, NO ₃ , γ
35-66	4494	Q	B, ³ H, NO ₃ , γ
35-70	4441	Q	B, ³ H, NO ₃ , γ
		A	WQ
36-46 P	4751	Q	³ H, NO ₃ ,
		SA	γ
36-46 Q	4752	Q	³ H, NO ₃ ,
		SA	γ
36-61 A	4447	Q	NO ₃ ,

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO₃, HCO₃, K, B, NO₃-N, Cl, SO₄-S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)36-61 B	4549	Q	^3H , NO_3
36-93	4579	SA	^3H , NO_3
		A	WQ
37-43	4480	Q	B, ^3H , NO_3 , γ
37-82 A	4554	Q	^3H , NO_3
38-65	4546	Q	^3H , NO_3
		SA	γ
38-70	4493	Q	B, ^3H , NO_3 , γ
39-1	4871	Q	B, ^3H , NO_3 , γ
39-39	4791	SA	B, ^3H , NO_3 , γ
39-79	4444	Q	B, ^3H , NO_3 , γ
40-1	4566	Q	^3H , NO_3
		A	γ , WQ
40-33	4431	Q	^3H , NO_3
		A	γ , WQ
40-62	4458	Q	^3H , NO_3
41-1	4858	M	^3H , NO_3
41-23	4430	Q	B, ^3H , NO_3 , γ
42-2	4859	M	^3H , NO_3
42-12	4517	Q	B, ^3H , NO_3 , γ
43-3	4861	M	^3H , NO_3
43-88	4836	Q	^3H , NO_3
44-4	4872	Q	B, ^3H , NO_3 , γ
44-64	4548	Q	^3H , NO_3 , γ
45-4	4862	M	^3H , NO_3
45-42	4450	Q	B, ^3H , NO_3 , γ
		A	WQ
45-69	4449	Q	^3H , NO_3
		SA	B, γ
46-5	4863	M	^3H , NO_3
46-21	4479	Q	^3H , NO_3
47-6	4864	M	^3H , NO_3
47-35	4478	Q	^3H , NO_3

(a) water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, $\text{NO}_3\text{-N}$, Cl, $\text{SO}_4\text{-S}$, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)47-46	4564	Q	^3H , NO_3
		SA	B, γ
47-60	4434	Q	B, ^3H , NO_3 , γ
48-7	4756	Q	^3H , NO_3
48-18	4850	Q	^3H , NO_3
48-71	4487	Q	^3H , NO_3
49-13	4771	Q	^3H , NO_3
		A	WQ
49-28	4816	Q	^3H , NO_3
49-55	4562	Q	B, ^3H , NO_3 , γ
49-57	4485	Q	B, ^3H , NO_3 , γ
49-79	4443	Q	^3H , NO_3
		A	WQ
50-19	4776	SA	NO_3
50-28 B	4844	Q	^3H , NO_3
		A	WQ
50-30	4451	Q	^3H , NO_3
50-42	4460	Q	^3H , NO_3
50-53	4473	Q	B, ^3H , NO_3 , γ
		A	WQ
50-85	4497	Q	^3H , NO_3
51-63	4488	Q	^3H , NO_3
51-75	4496	Q	^3H , NO_3
53-35	4637	Q	^3H , NO_3
		A	γ
53-103	4772	Q	^3H , NO_3
54-34	4638	Q	^3H , NO_3
54-37 A	4853	Q	^3H , NO_3
54-42	4432	Q	NO_3
		SA	^3H
54-45	4811	Q	^3H , NO_3

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, NO_3 -N, Cl, SO_4 -S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)54-57	4469	Q	^3H , NO_3
55-40	4639	Q	^3H , NO_3
55-44	4640	Q	^3H , NO_3
55-50 AO	4433	Q	^3H , NO_3
55-50 C	4483	Q	^3H , NO_3
		SA	Y
		A	WQ
55-50 D	4484	Q	^3H , NO_3
55-70	4442	Q	^3H , NO_3
55-76	4533	Q	NO_3
55-89	4453	Q	NO_3
56-43	4650	Q	^3H , NO_3
57-25 A	4856	Q	^3H , NO_3
57-29 A	4462	Q	^3H , NO_3
57-83	4558	Q	NO_3
58-24	4652	Q	^3H , NO_3
59-32	4815	Q	^3H , NO_3
59-58	4827	Q	^3H , NO_3
		A	WQ
59-80 B	4437	Q	NO_3
60-32	4814	Q	^3H , NO_3
60-57	4826	Q	^3H , NO_3
60-60	4435	Q	^3H , NO_3
61-37	4694	Q	NO_3
61-41	4653	Q	^3H , NO_3
61-62	4825	Q	^3H , NO_3
61-66	4474	Q	^3H , NO_3
62-31	4813	Q	NO_3
62-43 F	4537	Q	^3H , NO_3
63-25	4499	Q	^3H , NO_3
63-51	4845	SA	^3H , NO_3
63-55	4823	Q	^3H , NO_3
63-58	4822	Q	^3H , NO_3
63-90	4436	Q	^3H , NO_3

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, NO_3 -N, Cl, SO_4 -S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)64-27	4599	Q	NO ₃
		SA	³ H
		A	WQ
64-62	4824	Q	³ H, NO ₃
65-23	4851	SA	³ H, NO ₃
65-50	4477	Q	³ H, NO ₃
65-59	4532	Q	³ H, NO ₃
65-72	4468	Q	³ H, NO ₃
65-83	4775	Q	³ H, NO ₃
66-23	4547	Q	NO ₃
66-38	4586	Q	NO ₃
66-39	4812	Q	NO ₃
66-58	4821	Q	³ H, NO ₃
66-64	4820	Q	³ H, NO ₃
		A	WQ
66-103	4587	SA	³ H, NO ₃
		A	γ
67-51	4561	Q	³ H, NO ₃
67-86	4585	Q	³ H, NO ₃
67-98	4556	Q	³ H, NO ₃
68-105	4588	SA	³ H, NO ₃
		A	γ
69-38	4461	Q	³ H, NO ₃
70-68	4455	SA	³ H, NO ₃
71-30	4490	SA	³ H, NO ₃
71-52	4454	Q	³ H, NO ₃
71-77	4584	SA	³ H, NO ₃
		A	WQ
72-73	4569	SA	³ H, NO ₃
72-88	4465	Q	³ H, NO ₃
		A	WQ
72-92	4565	SA	³ H, NO ₃

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO₃, HCO₃, K, B, NO₃-N, Cl, SO₄-S, and dissolved solids.

V. GROUND WATER (contd)

<u>well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(699-)72-98	4463	SA	^3H , NO_3
73-61	4583	Q	^3H , NO_3
74-44	4516	Q	^3H , NO_3
		A	WQ
77-36	4500	Q	^3H , NO_3
77-54	4512	Q	NO_3
78-62	4511	SA	NO_3
		A	WQ
80-43 P	4760	SA	NO_3
80-43 Q	4761	SA	NO_3
80-43 R	4762	SA	NO_3
80-43 S	4763	SA	NO_3
81-58	4597	Q	^3H , NO_3
		A	WQ
83-47	4515	SA	^3H
84-35 A O	4596	SA	^3H , NO_3
87-55	4792	Q	^3H , NO_3
		A	WQ
89-35	4571	Q	NO_3
		A	WQ
90-45	4770	Q	^3H
		SA	NO_3
96-49	4591	Q	^3H , NO_3
97-43	4590	Q	^3H , NO_3
97-51 A	4728	Q	^3H , NO_3
101-48 B	4846	SA	^3H , NO_3

100 Area Wells

(199-)B3-1	1851	SA	^3H
B3-2 P	1856	SA	^3H , NO_3
B3-2 Q	1857	SA	^3H , NO_3
B4-1	1853	Q	^3H , NO_3
B4-2	1854	Q	^3H , NO_3

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, NO_3 -N, Cl, SO_4 -S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
(199-)B4-3	1855	Q	^3H , NO_3
B4-4	1891	SA	B, ^3H , NO_3 γ
B5-1	1895	Q	^3H , NO_3
B9-1	1893	SA	^3H , NO_3
D2-5	1894	Q	^3H , NO_3
D5-12	1892	Q	B, ^3H , NO_3 γ
D8-3	1862	Q	^3H , NO_3
F5-1	1865	Q	^3H , NO_3
F5-3	1867	Q	^3H , NO_3
F5-4	1868	Q	^3H , NO_3
F5-6	1870	Q	^3H , NO_3
F7-1	1871	Q	^3H , NO_3
F8-1	1888	Q	^3H , NO_3
F8-2	1889	Q	^3H , NO_3
H3-1	1890	Q	^3H , NO_3
H4-3	1877	M	B, U, ^3H , NO_3 , Cr^{+6}
		Q	F, Cu
		A	γ
		Q	WQ
K-11	1882	Q	^3H , NO_3
		SA	γ
K-19	1884	Q	^3H , NO_3
K-20	1885	Q	^3H , NO_3
K-22	1887	Q	^3H , NO_3
K-27	1911	Q	^3H , γ
K-28	1912	Q	^3H , γ
K-29	1913	Q	^3H , γ
K-30	1914	Q	^3H , γ
N-1	1908	Q	^3H , NO_3 , γ
		SA	Sr
N-2	1904	Q	^3H , NO_3 , γ
		SA	Sr
N-3 O	1896	Q	B, ^3H , γ
		SA	Sr
N-4	1899	Q	B, ^3H , NO_3 , γ
		SA	Sr
N-5	1909	Q	^3H , NO_3 , γ
		SA	Sr

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, NO_3 -N, Cl, SO_4 -S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA #</u>	<u>Frequency</u>	<u>Analyses^(a)</u>
(199-)N-6	1901	Q	β , ^3H , γ
		SA	Sr
N-7	1910	Q	^3H , NO_3 , γ
		SA	Sr
N-10 P	1900	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-14	1902	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-15	1903	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-16	1915	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-17	1916	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-18	1917	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-19	1918	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-20	1919	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-21	1920	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-22	1921	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-23	1922	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-24	1923	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-25	1924	Q	β , ^3H , NO_3 , γ
		SA	Sr
N-26	1925	Q	β , ^3H , NO_3 , γ
		SA	Sr

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO_3 , HCO_3 , K, B, NO_3 -N, Cl, SO_4 -S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA #</u>	<u>Frequency</u>	<u>Analyses^(a)</u>
<u>200 Area Wells</u>			
(299-)E19-1	2359	Q	B, ³ H, NO ₃ , γ
E23-1	2553	Q	B, ³ H, NO ₃ , γ
E24-7	2542	Q	B, ³ H, NO ₃ , γ
E25-2	2554	Q	B, ³ H, NO ₃ , γ
E26-1	2545	Q	B, ³ H, NO ₃ , γ
E26-3	2365	Q	B, ³ H, NO ₃ , γ
E27-1	2287	Q	B, ³ H, NO ₃ , γ
E28-1	2555	Q	B, ³ H, NO ₃ , γ
E28-5	2285	Q	B, ³ H, NO ₃ , γ
E33-14	2297	Q	B, ³ H, NO ₃ , γ
E34-1	2549	M	NO ₃
W6-1	2990	Q	B, ³ H, NO ₃ , γ
W10-5	2890	Q	B, ³ H, NO ₃ , γ
W11-9	2881	Q	B, ³ H, NO ₃ , γ
W12-1	2883	Q	B, ³ H, NO ₃ , γ
W15-2	2891	Q	B, ³ H, NO ₃ , γ
W18-3	3011	Q	B, ³ H, NO ₃ , γ
W19-4	2938	Q	B, ³ H, NO ₃ , γ
W21-1	2930	Q	B, ³ H, NO ₃ , γ
W22-7	3014	Q	B, ³ H, NO ₃ , γ
W22-9	3013	Q	B, ³ H, NO ₃ , γ
W22-10	2906	Q	α, B, Sr, γ

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO₃, HCO₃, K, B, NO₃-N, Cl, SO₄-S, and dissolved solids.

V. GROUND WATER (contd)

<u>Well Number</u>	<u>EMA #</u>	<u>Frequency</u>	<u>Analyses (a)</u>
<u>300 Area Wells</u>			
(399-)1-1	4403	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
1-2	4404	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
1-3	4406	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
1-4	4407	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
1-5	4806	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y (To HEDL Monthly)
1-6	4837	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
2-1	4402	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
2-2	4633	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
2-3	4634	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
3-1	4401	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
3-2	3303	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
3-3	3034	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
3-6	3031	M	B, NO ₃ , U, Cr ⁺⁶ , F, Y
3-7	4839	M	B, NO ₃ , U, Cr ⁺⁶ , F, Y
3-9	4626	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y, Sr
3-10	4627	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y, Sr
3-11	4628	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y, Sr
3-12	4870	M	B, NO ₃ , U, Cr ⁺⁶ , F, Y
4-1	4410	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
4-7	4568	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
4-9	4629	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y, Sr
4-10	4630	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y, Sr
5-1	4411	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
6-1	4409	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
8-1	4405	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
8-2	4408	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
8-3	4412	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y
8-4	4865	Q	B, NO ₃ , U, Cr ⁺⁶ , F, Y

(a) Water quality analyses (designated WQ) include the following: pH, Conductance, Ca, Mg, Na, CO₃, HCO₃, K, B, NO₃-N, Cl, SO₄-S, and dissolved solids.

VI. FOODSTUFFS

<u>Location</u>	<u>Description</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses(a)</u>
<u>Whole Milk</u> ^(a)				
Harris	Riverview	0975	BW	¹³¹ I, Gamma scan
			Q	⁸⁹ Sr, ⁹⁰ Sr
Pettett	Byers Landing	6340	BW	¹³¹ I, Gamma scan
			M	⁸⁹ Sr, ⁹⁰ Sr
Knight	Benton City	6519	BW	¹³¹ I, Gamma scan
			Q	⁹⁰ Sr
Meeker	Sunnyside	6355	BW	¹³¹ I, Gamma scan
			M	⁸⁹ Sr, ⁹⁰ Sr
Lazy Dee	Wahluke Slope	6165	BW	¹³¹ I, Gamma scan
			Q	⁹⁰ Sr
Young	Columbia Basin	1648	BW	¹³¹ I, Gamma scan
Cooke Brothers	Composite #3		Q	⁹⁰ Sr
Price				
Bleazard				
<u>Meat</u>				
Harris	Riverview	1292	SA	Gamma scan, ⁹⁰ Sr
Local Farm	FFTF E, F or G			
	Sector	6418	SA	Gamma scan
Local Farm	Horn Rapids	6516	A	Gamma scan
Local Farm	FFTF K, L or M			
	Sector	0322	SA	Gamma scan
<u>Produce (Leafy Vegetables)</u> ^(b)				
Kinne	Ringold	6373	A	Gamma scan, ⁹⁰ Sr
Harris	Riverview	1609	M	Gamma scan, ⁹⁰ Sr
Local Farm	Sunnyside	6372	A	Gamma scan, ⁹⁰ Sr
Local Farm	Benton City	1612	BW	Gamma scan, ⁹⁰ Sr
Local Farm	Sagemoor Vicinity	6419	A	Gamma scan
Local Farm ^(c)	Walla Walla	6409	M	Gamma scan
Local Farm ^(c)	Moses Lake	6407	M	Gamma scan
Local Farm ^(c)	McNary	6410	M	Gamma scan
Local Farm ^(c)	Othello	6408	M	Gamma scan

(a) Sample of forage also collected but not analyzed unless a positive result for ¹³¹I is observed.

(b) Sample collected only during growing season, May to October.

(c) Sample only from one location each month.

VI. FOODSTUFFS (contd)

<u>Location</u>	<u>Description</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Analyses</u>
	<u>Farm Fruit</u>			
Sagemoor Vicinity	Peaches	0567	A	Gamma scan
Sagemoor Vicinity	Plums	0577	A	Gamma scan
Sagemoor Vicinity	Grapes	6417	A	Gamma scan
Sagemoor Vicinity	Apples	0565	A	Gamma scan
Sagemoor Vicinity	Pears	6424	A	Gamma scan
Sagemoor Vicinity	Cherries	0543	A	Gamma scan
Sunnyside	Cherries	6453	A	Gamma scan
Sunnyside	Peaches	6443	A	Gamma scan
Sunnyside	Plums	6442	A	Gamma scan
Sunnyside	Pears	6441	A	Gamma scan
Sunnyside	Apples	6440	A	Gamma scan
Sunnyside	Grapes	6454	A	Gamma scan

VII. WILDLIFE

<u>Location</u>	<u>EMA#</u>	<u>Species</u>	<u>Frequency</u>	<u>Analyses</u>
		<u>Fish</u> ^(a)		
Above Priest Rapids Dam		Mtn. Whitefish Smallmouth Bass	SA (April & Oct.) A (April)	Gamma Scan Gamma Scan
Vernita to Priest Rapids		Mtn. Whitefish	SA (April & Oct.)	Gamma Scan
100-D		Mtn. Whitefish	Q	Gamma Scan
Hanford Slough		Mtn. Whitefish Smallmouth Bass	SA (April & Oct.) A (April)	Gamma Scan Gamma Scan
Ringold		Mtn. Whitefish	SA (April & Oct.)	Gamma Scan
		<u>Ducks</u> ^(b)		
Vicinity 100-N	6451 ATS*	Mallard Other	2/mo.(c) 2/mo.(c)	Gamma Scan Gamma Scan
B Pond	1298 ATS*	Mallard Other	2/mo.(c) 2/mo.(c)	Gamma Scan Gamma Scan
Gable Pond	0432 ATS*	Mallard Other	2/mo.(c) 2/mo.(c)	Gamma Scan Gamma Scan
U Pond	0439 ATS*	Mallard Other	2/mo.(c) 2/mo.(c)	Gamma Scan Gamma Scan
West Lake	6186 ATS*	Mallard Other	2/mo.(c) 2/mo.(c)	Gamma Scan Gamma Scan
300 Area	1589 ATS*	Mallard Other	2/mo.(c) 2/mo.(c)	Gamma Scan Gamma Scan
		<u>Geese</u> ^(d)		
Vicinity 100-N	ATS*		1/mo.(e)	Gamma Scan
		<u>Game Birds</u> ^(f)		
<u>Vicinity Burial Grounds:</u>				
100-BC	ATS*	Chukar, Pheas- ant or Quail	A (3 Bird Comp. in October)	Gamma Scan
100-K	ATS*	Chukar, Pheas- ant or Quail	A (3 Bird Comp. in October)	Gamma Scan

(a) Collect up to five fish at each sampling. Two samples are to be taken from each:
1) skinless muscle fillet from one side of fish and 2) remainder of fish.

(b) Other species such as coot, teal, widgeon, etc., may be used for this sample.

(c) 2/mo. in January, August, and December.

(d) Collect the same species October through December.

(e) 1/mo. in October, November, and December.

(f) Composite the samples only if they are of the same species; otherwise submit as separate samples.

* ATS - according to species.

VII. WILDLIFE (contd)

<u>Location</u>	<u>EMA#</u>	<u>Species</u>	<u>Frequency</u>	<u>Analyses</u>
<u>Game Birds</u> (contd) ^(a)				
100-N	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
100-D	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
100-H	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
100-F	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
200 E	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
200 W	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
300 Area	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
<u>Offsite</u>				
Wahluke Slope	ATS*	Chukar, Pheasant or Quail	A (3 Bird Comp. in October)	Gamma Scan
<u>Deer</u>				
Road kill as available at onsite locations	According to location	Mule	6/yr	Muscle - Gamma Scan Bone - ⁹⁰ Sr Liver - Pu ^(b)
<u>Rabbits</u>				
100-N Area	According to location	Cottontail or Jackrabbit	4/yr	Muscle - Gamma Scan Bone - ⁹⁰ Sr
200 Areas	According to location	Cottontail or Jackrabbit	4/yr	Muscle - Gamma Scan Bone - ⁹⁰ Sr
300 Area	According to location	Cottontail or Jackrabbit	4/yr	Muscle - Gamma Scan Bone - ⁹⁰ Sr

An effort is made to collect wildlife as scheduled. Occasionally however, wildlife may be unavailable for collection at the time and location.

(a) Composite the samples only if they are of the same species; otherwise submit as separate samples.

(b) Isotopic Pu.

* ATS - According to species.

VIII. SOIL AND VEGETATION

<u>Location</u>	<u>Soil</u>	<u>Vegetation</u>	<u>Frequency</u>	<u>Analyses</u>
Benton City	6000	6046	A	Gamma scan, 90Sr, U, Pu(a)
Yakima Barricade	6004	6050	A	Gamma scan, 90Sr, U, Pu(a)
Wahluke #2 Air Sampling Station	6007	6053	A	Gamma scan, 90Sr, U, Pu(a)
Berg Ranch Air Sampling Station	6008	6054	A	Gamma scan, 90Sr, U, Pu(a)
Ringold	6009	6055	A	Gamma scan, 90Sr, U, Pu(a)
Byers Landing Air Sampling Station	6011	6057	A	Gamma scan, 90Sr, U, Pu(a)
Wye Barricade	6016	6062	A	Gamma scan, 90Sr, U, Pu(a)
Hanford Townsite (CP#57)	6017	6063	A	Gamma scan, 90Sr, U, Pu(a)
200 E Hill Air Sampling Station	6022	6068	A	Gamma scan, 90Sr, U, Pu(a)
Taylor Flats #2	6421	6423	A	Gamma scan, 90Sr, U, Pu(a)
Prosser Barricade	6225	6227	A	Gamma scan, 90Sr, U, Pu(a)
East of 200 W Gate (CP#2)	6276	6283	A	Gamma scan, 90Sr, U, Pu(a)
Southeast Side FFTF Site	6277	6286	A	Gamma scan, 90Sr, U, Pu(a)
East of ALE Field Lab	6278	6287	A	Gamma scan, 90Sr, U, Pu(a)
1/2 Mile Northeast FFTF Site	6282	6285	A	Gamma scan, 90Sr, U, Pu(a)
Sunnyside	6357	6363	A	Gamma scan, 90Sr, U, Pu(a)
Sagemoor Farms	6358	6364	A	Gamma scan, 90Sr, U, Pu(a)
Taylor Flats #1	6420	6422	A	Gamma scan, 90Sr, U, Pu(a)

(a) Isotopic Pu.

VIII. SOIL AND VEGETATION (contd)

<u>Location</u>	<u>Soil</u>	<u>Vegetation</u>	<u>Frequency</u>	<u>Analyses</u>
West End Fir Road	6360	6366	A	Gamma scan, 90Sr, U, Pu(a)
Harris Farm	6361	6367	A	Gamma scan, 90Sr, U, Pu(a)
200 ENC	6362	6368	A	Gamma scan, 90Sr, U, Pu(a)
Pettett Farm	6359	6365	A	Gamma scan, 90Sr, U, Pu(a)

(a) Isotopic Pu.

IX. EXTERNAL RADIATION MEASUREMENT

Thermoluminescent Dosimeters

<u>Location</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Measurement</u>
Coyote Rapids	6135	M	Immersion Dose
Richland Pumphouse	1715	M	Immersion Dose
200 ENC ^(a)	1467	M	Ambient Dose
200 ESE ^(a)	1468	M	Ambient Dose
200 EWC ^(a)	1470	M	Ambient Dose
200 EEC ^(a)	1469	M	Ambient Dose
200 WEC ^(a)	1473	M	Ambient Dose
Redox ^(a)	1474	M	Ambient Dose
200 WWC ^(a)	1471	M	Ambient Dose
200 WNE ^(a)	1472	M	Ambient Dose
3705 Building ^(a)	1486	M	Ambient Dose
ACRMS ^(a)	1698	M	Ambient Dose
300 Pond ^(a)	1699	M	Ambient Dose
300 Southwest Gate ^(a)	6163	M	Ambient Dose
300 South Gate ^(a)	6162	M	Ambient Dose
CP #64 ^(a)	6171	M	Ambient Dose
1100 Area ^(a)	6398	M	Ambient Dose
100-K ^(a)	1475	M	Ambient Dose
100-N (WPPSS) ^(a)	1476	M	Ambient Dose
100-D ^(a)	1477	M	Ambient Dose
100 Area Fire Station ^(a)	6164	M	Ambient Dose
400 E ^(a)	1729	M	Ambient Dose
400 W ^(a)	6468	M	Ambient Dose
400 S ^(a)	6469	M	Ambient Dose
400 N ^(a)	6470	M	Ambient Dose
FFTF North	6177	M	Ambient Dose
FFTF Southeast	6178	M	Ambient Dose
Prosser Barricade ^(a)	6176	M	Ambient Dose
Hanford ^(a)	1480	M	Ambient Dose
Wye Barricade ^(a)	1483	M	Ambient Dose
Rattlesnake Springs ^(a)	1485	M	Ambient Dose
ERC ^(a)	1484	M	Ambient Dose
Yakima Barricade ^(a)	1482	M	Ambient Dose
Wahluke #2 ^(a)	1490	M	Ambient Dose

(a) Located at Air Sampling Station.

IX. EXTERNAL RADIATION MEASUREMENT (contd)

<u>Location</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Measurement</u>
Pasco ^(a)	1488	M	Ambient Dose
Richland ^(a)	1487	M	Ambient Dose
Vernita ^(a)	1481	M	Ambient Dose
Benton City ^(a)	1499	M	Ambient Dose
Othello ^(a)	1493	M	Ambient Dose
Connell ^(a)	1494	M	Ambient Dose
Berg Ranch ^(a)	1491	M	Ambient Dose
Wahluke Wm. ^(a)	1495	M	Ambient Dose
Cooke Brothers ^(a)	1492	M	Ambient Dose
Byers Landing ^(a)	1498	M	Ambient Dose
Pettett ^(a)	6353	M	Ambient Dose
Sagemoor Farms	6354	M	Ambient Dose
Fir Road ^(a)	6356	M	Ambient Dose
Walla Walla ^(a)	1695	M	Ambient Dose
Sunnyside ^(a)	1500	M	Ambient Dose
McNary ^(a)	1696	M	Ambient Dose
Moses Lake ^(a)	1693	M	Ambient Dose
Washtucna ^(a)	1694	M	Ambient Dose
Up River 100-B Area	6471	M	Ambient Dose
Below 100-B Retention Basin	6472	M	Ambient Dose
Above 100-K Boat Ramp	6260	M	Ambient Dose
Below 100-K Retention Basins	6473	M	Ambient Dose
Downstream 100 N Outfall	6536	M	Ambient Dose
Below 100 N Stack	6537	M	Ambient Dose
Upstream 100 N Berm	6538	M	Ambient Dose
Down River 100-D	6475	M	Ambient Dose
Down River Opposite 100-D	6261	M	Ambient Dose
Lower End Locke Island	6262	M	Ambient Dose
White Bluffs Ferry Landing	6263	M	Ambient Dose
White Bluffs Slough	6476	M	Ambient Dose
100-F Area Floodplain	6477	M	Ambient Dose
Below 100-F	6264	M	Ambient Dose
Hanford Peninsula	6478	M	Ambient Dose
Hanford Powerline Crossing	6389	M	Ambient Dose
Hanford Ferry Landing	6265	M	Ambient Dose

(a) Located at Air Sampling Station.

IX. EXTERNAL RADIATION MEASUREMENT (contd)

<u>Location</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Measurement</u>
Hanford RR Track	6266	M	Ambient Dose
Savage Island Slough	6479	M	Ambient Dose
Ringold Island	6267	M	Ambient Dose
Powerline Crossing	6268	M	Ambient Dose
North End Wooded Island	6480	M	Ambient Dose
South End Wooded Island	6269	M	Ambient Dose
Island River Mile 344	6481	M	Ambient Dose
Island River Mile 333	6482	M	Ambient Dose

X. PORTABLE INSTRUMENT SURVEYS

Columbia River Shoreline

<u>Location</u>	<u>EMA#</u>	<u>Frequency</u>	<u>Instrument</u>
Above 100-K Boat Ramp	6132	M	LLM, GM
100-N Trench Springs	6129	M	LLM, GM
Down River Opposite 100-D	6241	M	LLM, GM
Lower End Locke Island	6123	M	LLM, GM
White Bluffs Ferry Landing	6121	M	LLM, GM
Below 100-F	6120	M	LLM, GM
Hanford Powerline Crossing	6118	M	LLM, GM
Hanford Ferry Landing	6117	M	LLM, GM
Hanford Railroad Track	6242	M	LLM, GM
Ringold Island	6114	M	LLM, GM
Powerline Crossing	6113	M	LLM, GM

Roadway Survey

<u>Description</u>	<u>Indentification Number</u>	<u>Frequency</u>	<u>Instrument</u>
300 Area to Wye Barricade Rt. 4-S to Wye Barricade Return to Rt. 4-S to 300 Area.	1	M	Road Monitor
Wye Barricade to 200 E Rt. 2-S from Wye Barricade to the NE Gate of 200 E via 11A and return to Wye Barricade.	2	M	Road Monitor
100-N to 200 W Rt. 4-N from 100-N to 100-K via Rt. 1. 100-K to NW Gate of 200 W via Rt. 1, Rt. 4-N, and 11A.	3	M	Road Monitor
200 W to 100-N NW Gate of 200 W to 100-N via 11A and Rt. 4-N.	4	M	Road Monitor
Redox Cutoff Rd. and Rt. 3 Redox cutoff road from inter- section of Rt. 3 to SE corner 200 W. Rt. 3 11A and return to Rt. 4S.	5	M	Road Monitor

X. PORTABLE INSTRUMENT SURVEYS (contd)

Roadway Survey (contd)

<u>Description</u>	<u>Indentification Number</u>	<u>Frequency</u>	<u>Instrument</u>
Hanford to 100-N Rt. 2-N from Rt. 11A to 100-N inter- section via Rt. 4-N. 100-N intersection to Rt. 11A via Rt. 4-N and Rt. 2-N.	6	Q	Road Monitor
11A to 100-K 11A and Rt. 6 intersection to 100-K via Rt. 6 and Rt. 1. Return via Rt. 1 and Rt. 6 to 11A.	7	Q	Road Monitor
Yakima Barricade to NECO Entrance Via 11A and Rt. 4-S	8	Q	Road Monitor
Horn Rapids to 11A Rt. 10 from Horn Rapids to Wye Barricade. Rt. 4-S from Wye Barricade to 11A.	9	M	Road Monitor

Railway Survey

300 Area to May Junction including FFTF Spur	1	Q	Bioplastic Crystal
May to Ethel	2	Q	Bioplastic Crystal
100-N to Nancy to Helen Helen via Audrey to 100-K, Helen to Susie, Susie to 200 West, Susie to 200 East	3	Q	Bioplastic Crystal
100-K to Audrey Audrey to 100-B, Audrey to Vernita Highway	4	A	Bioplastic Crystal
May to Nancy via Ruth and Bettie	5	A	Bioplastic Crystal

Aerial Survey

Project Perimeter	3	A	NaI Crystal
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XI. SURVEILLANCE OF WASTE DISPOSAL SITES

Active, inactive, and retired waste disposal sites require periodic monitoring to assure appropriate maintenance. The following sites are routinely checked for vegetation growth, evidence of burrowing animals, erosion, status of enclosure, etc.

<u>Description</u>	<u>Frequency</u>
100-K Trench	A
100-BC SE B. G. (105-C Solid Waste)	SA
100-BC SW B. G. (105-B Solid Waste, N. Solid Waste)	SA
100-BC Construction B. G.	SA
100-BC B. G. East of 108-B	SA
100-BC Irradiated Metal Storage Basin Waste	SA
108-B Ball 3x Burial Ground	SA
108-B Crib	SA
105-C Trench	SA
105-B Trench	SA
107 Basin Sludge Burial	SA
105-C Metal Examination Waste Tank	SA
100-BC Overflow Pluto Crib	SA
107-C Retention Basin	SA
107-B Retention Basin	SA
100-BC Effluent Diversion Box	SA
100-BC Minor B. G.'s East of 105-B	SA
100-BC Outfall Structures	SA
100-DR Outfall Structures	SA
100-DDR Trench	SA
107-D Retention Basin	SA
107-DR Retention Basin	SA
100-DDR Effluent Lines	SA
100-D Dummy Decontamination Waste	SA
100-DDR Solid Waste B. G. (VSR Thimbles)	SA
100-DDR Construction B. G.	SA
100-DDR #3 B. G. NE of DR	SA
100-DDR Pluto Crib	SA
100-DDR 105 Basin Sludge B. G.	SA
100-DDR #1 B. G.	SA
100-DDR #2 B. G.	SA
100-H Trench	SA
107-H Basin	SA
100-H Effluent Lines (Junction Boxes)	SA

XI. SURVEILLANCE OF WASTE DISPOSAL SITES (contd)

<u>Description</u>	<u>Frequency</u>
100-H Liquid Waste Burial	SA
100-H #1 B. G.	SA
100-H #2 B. G.	SA
P-11 Area	A
100-F Lewis Canal	SA
100-F Swampy Area	SA
100-F Trench	SA
100-F Retention Basin	SA
100-F Trench Drain and Adjacent Wood Covered Pit	SA
100-F Ball Washer Crib	SA
100 F #3 B. G.	SA
100-F #2 B. G.	SA
100-F #1 B. G.	SA
100-F Sawdust Burial	SA
100-F Leaching Trench	SA
100-F 60" Overground Pipe	SA
100-F Happy Valley Farm Plots	SA
200 W New Redox Pond (216-S-16)	SA
200 W Old Redox Pond (216-S-17)	A
200 W U Pond Overflow (216-U-11)	SA
200 E B Pond (216-B-3)	Q
200 E B Pond Ditch #3	SA
200 E Purex Crib #1 (216-A-6)	SA
200 E Purex Crib #2 (216-A-30-1)	SA
200 E North of Purex Crib #3 (216-A-37-1)	SA
200 E NE Perimeter Fence	SA
200 E 216-BC Crib Area	SA
200 E California Nuclear B. G. Perimeter	Q
300 Area 300 N B. G.	SA
300 Area 300 Wye B. G.	SA
300 Area #2 B. G.	SA
300 Area #3 B. G.	SA
307 Area #4 B. G.	SA
300 Area #5 B. G.	SA
300 Area #7 B. G.	SA
300 West B. G.	SA
300 Area N. Process Trench at Perimeter Fence	Q
200-N, P, and R Areas	SA

APPENDIX A

SUMMARY OF DIFFERENCES BETWEEN THE 1981 AND 1982 ENVIRON-
MENTAL SURVEILLANCE PROGRAM ROUTINE SAMPLING SCHEDULE

APPENDIX A

SUMMARY OF DIFFERENCES BETWEEN THE 1981 AND 1982 ENVIRONMENTAL SURVEILLANCE PROGRAM ROUTINE SAMPLING SCHEDULE

A comparison of the current (1982) Master Schedule for the Hanford Environmental Surveillance Program's routine sampling and monitoring activities with the CY-1981 schedule will show several changes have been made. These changes are listed below along with a brief discussion of the basis for the change.

SECTION I. AIR

- The 600E, 600S, 600W, 600N, and 600 Area Composite air samples (Page 7 in the 1981 Master Schedule) were deleted from the schedule. These are duplicate samples taken at various air sampling locations for quality control purposes and are not considered a part of the routine environmental sampling schedule. The duplicate air samples will nevertheless continue to be collected during CY-1982 as part of the quality control program.

SECTION II. COLUMBIA RIVER

- Samples of river water collected at the Hanford location (Page 9 in the 1981 Master Schedule) were deleted from the schedule. Sampling at this location is being performed as part of a special study and is not considered a part of the routine environmental sampling schedule.

SECTION III. SANITARY WATER

- All sanitary water samples in the CY-1981 schedule with the exception of the Richland cumulative sample were deleted from the CY-1982 schedule. The samples are collected in support of the Hanford Sanitary Water Quality Surveillance Program which is reported by the Hanford Environmental Health Foundation (HEHF).

SECTION IV. SURFACE WATER

- The sampling frequency at B Pond was reduced from monthly to quarterly. The frequency had been increased during CY-1981 because of increasing ⁹⁰Sr concentrations observed in the pond water. During the past year the ⁹⁰Sr levels have decreased and stabilized and the increased sampling frequency is no longer necessary.

SECTION VI. FOODSTUFFS

- Whole Milk: The Truhlicka-Benton City location was replaced by the Knight-Benton City location after the Truhlicka dairy cows were sold.
- Meat: The "Local Farm-FFTF F Sector" (Page 25 in the 1981 Master Schedule) was changed to read "Local Farm-FFTF E, F, or G Sector" to more accurately reflect the area in which the sample is collected. The frequency was also changed from annual to semiannual in conformance with FFTF Environmental Specifications.

The "Local Farm-FFTF K, L, or M Sector" was added in conformance with FFTF Environmental Specifications.

SECTION VII. WILDLIFE

- Deer: Deer sampling locations and frequency (Page 28 in the 1981 Master Schedule) were restated in more general terms. Instead of specifying 2 deer/year at three operating areas, the schedule was modified to 6 deer/year at any onsite location. Although it is believed that the Hanford deer generally tend to use well-defined home ranges, it is nevertheless invalid to attribute a deer's home-range to the sampling (road-kill) location unless it's particular grazing pattern is known.
- Rabbits: Rabbit sampling was modified to allow collection of jackrabbits (hares) as well as cottontail rabbits. The Master Schedule was previously modified in 1980 to restrict sampling to cottontails only; however, experience has shown that it is difficult to obtain the desired number of cottontails. The intent of limiting the collection only to cottontails was to reduce the variability in results caused by different species. Cottontails were selected because they are a more common food source. Because the purpose of onsite wildlife sampling is to detect changes in the accessibility of onsite radionuclides, the inclusion of jackrabbits will enable such sampling to be more efficiently accomplished. The distinction between cottontail and jackrabbit samples will be made when recording results.

SECTION VIII. SOIL AND VEGETATION

- The Pettett sampling location was added in conformance with FFTF Environmental Specifications which calls for a sample at this location every three years.

SECTION IX. EXTERNAL RADIATION MEASUREMENT

- The following locations were added along the N Area shoreline:

Downstream 100-N Outfall

Below 100-N Stack

Upstream Tip of 100-N Berm

The original dosimeter location along the N Area shoreline (100-N Trench Springs) was located primarily to measure the dose rate due to any radioactivity in the 100-N spring water. It has subsequently been determined that the primary source of radiation along the N Area shoreline is scattered radiations from N Area radwaste facilities. The additional dosimeters will enable better monitoring of exposure rates along the N Area shoreline from the radwaste facilities.

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