Master Schedule for CY-1984 Hanford Environmental Surveillance Routine Sampling Program

**P. J. Blumer
K. R. Price
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December 1983

**Prepared for the U.S. Department of Energy
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**Pacific Northwest Laboratory
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MASTER SCHEDULE FOR CY-1984
HANFORD ENVIRONMENTAL SURVEILLANCE
ROUTINE SAMPLING PROGRAM

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Richland, Washington 99352

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MASTER SCHEDULE FOR CY-1984
HANFORD ENVIRONMENTAL SURVEILLANCE ROUTINE SAMPLING PROGRAMS

INTRODUCTION

This report provides the current schedule of data collection for the routine Hanford environmental surveillance and ground-water Monitoring Programs at the Hanford Site. The programs are sponsored by the Department of Energy and are conducted by the Environmental Evaluations Section of Pacific Northwest Laboratory.^(a)

The purpose of the programs is 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-4659 (Eddy, Prater and Rieger 1983) for CY-1982. 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-4658 (Sula, Blumer, Dirkes, Carlile 1983) for CY 1982. Data from offsite locations are presented annually in the "Environmental Surveillance at Hanford" series. The latest report in this series is PNL-4657 (Sula, et al. 1983) for CY 1982.

The routine sampling schedule provided herein does not include samples that are planned to be collected during FY-1984 in support of special studies, special contractor support programs, 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 samples from being collected as scheduled.

All analyses for samples listed in Part I are performed by the U. S. Testing Co., Inc., except as noted otherwise. Samples listed in Part II are analyzed by the Radiological Sciences Department laboratory, Pacific Northwest Laboratory.

(a) Pacific Northwest Laboratory is operated by Battelle Memorial Institute for the U.S. Department of Energy.

Frequency Symbols Used

D - Daily	BM - Bimonthly (every 8 wk)
W - Weekly	Q - Quarterly (every 12 wk)
BW - Biweekly (every 2 wk)	SA - Semiannually
M - Monthly (every 4 wk)	A - Annually
M Comp. - Monthly Composite	NRS - Not Routinely Analyzed

Analysis Symbols Used

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

Alpha	- gross alpha activity of sample
Beta	- gross beta activity of sample
Gamma Scan	- analysis of gamma energy spectrum for individual gamma-emitting radionuclides including: ^{22}Na , ^{60}Co , ^{65}Zn , ^{106}Ru , ^{131}I , and ^{137}Cs
DO	- dissolved oxygen
BOD	- biological oxygen demand
WQ	- water quality analyses including: 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.
Cr	- Cr^{+6}

PART I. HANFORD ENVIRONMENTAL SURVEILLANCE PROGRAM

1.0 RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE

1.1 AIR - PARTICULATE FILTER

Location	Individual Samples			Composite Group	Composited Samples		
	Sample Number	Frequency	Analysis		Composite Sample No.	Frequency	Analysis
ONSITE							
100 K	0058	BW	Beta	100 Areas	1753 0083	M Q	Gamma Scan 89Sr, 90Sr, 238Pu, 239-240Pu, U
100 N (WPPSS)	1529	BW	Beta				
100 D	1074	BW	Beta, Alpha				
100 Area Fire Station	6154	BW	Beta				
Rt 11A-Mile 9	0249	BW	Beta, Alpha	200 North	0613 0087	M Q	Gamma Scan 89Sr, 90Sr, 238Pu, 239-240Pu, U
N of 200 E	0051	BW	Beta, Alpha				
E of 200 E	0030	BW	Beta, Alpha	200 East	1749 0080	M Q	Gamma Scan 89Sr, 90Sr, 238Pu, 239-240Pu, U
200 ESE	0043	BW	Beta, Alpha				
S of 200 E	0031	BW	Beta, Alpha				
SW of BC Cribs	0250	BW	Beta, Alpha	200 W South & East	0614 0088	M Q	Gamma Scan 89Sr, 90Sr, 238Pu, 239-240Pu, U
Army Loop Camp	0248	BW	Beta, Alpha				
200 Tel. Exchange	0052	BW	Beta, Alpha				
3705 Building	1531	BW	Beta	300 Area	1752 0082	M Q	Gamma Scan 89Sr, 90Sr, 238Pu, 239-240Pu, U
ACRMS	1793	BW	Beta				
300 SW Gate	6148	BW	Beta				
300 South Gate	6150	BW	Beta, Alpha				
300 Pond	1543	BW	Beta, Alpha				
400 E	6308	BW	Beta, Alpha	400 Area	6465 0086	M Q	Gamma Scan 89Sr, 90Sr, 238Pu, 239-240Pu, U
400 W	6455	BW	Beta, Alpha				
400 S	6456	BW	Beta, Alpha				
400 N	6457	BW	Beta, Alpha				

1.1 AIR - PARTICULATE FILTER (Cont'd)

Location	Individual Samples			Composite Group	Composited Samples		
	Sample Number	Frequency	Analysis		Composite Sample No.	Frequency	Analysis
<u>ONSITE (Cont'd)</u>							
Hanford	0057	BW	Beta, Alpha }	Hanford	0600	M	Gamma Scan
					0069	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu, U
Wye Barricade	0924	BW	Beta, Alpha }	Wye Barricade	0601	M	Gamma Scan
					0070	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu, U
<u>PERIMETER</u>							
Berg Ranch	1405	BW	Beta, Alpha }	Northeast Perimeter	0602	M	Gamma Scan
Sagehill Met. Tower	0047	BW	Beta		0059	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu
Ringold Met. Tower	0048	BW	Beta				
Fir Road	6391	BW	Beta	East Perimeter	0603	M	Gamma Scan
Pettett	6351	BW	Beta, Alpha }		0060	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu, U
Byers Landing	0247	BW	Beta, Alpha }	Southeast Perimeter	0604	M	Gamma Scan
RRC #64	6182	BW	Beta, Alpha }		0061	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu, U
Horn Rapids Rd - Mile 12	0049	BW	Beta, Alpha }	Horn Rapids Road	0605	M	Gamma Scan
Horn Rapids Rd Substation	0050	BW	Beta		0062	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu, U
Prosser Barricade	0055	BW	Beta, Alpha }	Prosser Barricade	0606	M	Gamma Scan
					0063	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu, U
ERC	0929	BW	Beta }	ERC	0612	M	Gamma Scan
					0071	Q	⁸⁹ Sr, ⁹⁰ Sr, ²³⁸ Pu, 239-240Pu, U

1.1 AIR - PARTICULATE FILTER (Cont'd)

Location	Individual Samples			Composite Group	Composited Samples		
	Sample Number	Frequency	Analysis		Composite Sample No.	Frequency	Analysis
PERIMETER (Cont'd)							
Rattlesnake Springs	0972	BW	Beta	West Perimeter	0607	M	Gamma Scan
Yakima Barricade	1650	BW	Beta, Alpha		0064	Q	89Sr, 90Sr, 238Pu, 239-240Pu
Vernita Bridge	1651	BW	Beta	Northwest Perimeter	0608	M	Gamma Scan
Wahluke Slope #2	1551	BW	Beta, Alpha		0065	Q	89Sr, 90Sr, 238Pu, 239-240Pu, U
COMMUNITY							
Othello	1652	BW	Beta	Northeast Communities	0609	M	Gamma Scan
Connell	1653	BW	Beta, Alpha		0066	Q	89Sr, 90Sr, 238Pu, 239-240Pu
Pasco	1654	BW	Beta	Tri-City	0610	M	Gamma Scan
Richland	0054	BW	Beta, Alpha		0067	Q	89Sr, 90Sr, 238Pu, 239-240Pu
Benton City	0029	BW	Beta, Alpha	Benton City	0611	M	Gamma Scan
					0068	Q	89Sr, 90Sr, 238Pu, 239-240Pu
DISTANT							
Moses Lake	0960	BW	Beta, Alpha	Outer Northeast	1742	M	Gamma Scan
Washtucna	0959	BW	Beta		0073	Q	89Sr, 90Sr, 238Pu, 239-240Pu
Walla Walla	0262	BW	Beta, Alpha	Outer Southeast	1744	M	Gamma Scan
McNary Dam	0958	BW	Beta		0075	Q	89Sr, 90Sr, 238Pu, 239-240Pu
Sunnyside	0964	BW	Beta, Alpha	Outer Western	1748	M	Gamma Scan
Sunnyside #2	0032	BW	NRA		0079	Q	89Sr, 90Sr, 238Pu, 239-240Pu, U

1.2 AIR - GASES/VAPOR

Location	Iodine-131		Tritium			Carbon-14			Krypton-85	
	Sample Number	Frequency	HTO Sample Number	HT Sample Number	Frequency	CO ₂ Sample Number	CH Sample Number	Frequency	Sample Number	Frequency
<u>ONSITE</u>										
100 K	1581	M (NRA)	0264		M					
100 N (WPPSS)	1661	BW	0263		M					
100 D	1582	BW	6335	6502	M					
100 Area Fire Station	6155	M (NRA)	0901		M	0912		BM		
Rt. 11A-Mile 9	0254	M (NRA)	0277		M					
N of 200 E	0251	M (NRA)	0276		M					
E of 200 E	0269	BW	0271		M				1533	M
200 ESE	1664	BW	6201	6503	M	0913	0044	BM	1534	M
S of 200 E	0270	BW	0272		M				1535	M
SW of BC Cribs	0056	M (NRA)	0274		M					
Army Loop Camp	0253	M (NRA)								
200 Tel. Exchange	0252	M (NRA)	0275		M					
3705 Building	1669	M (NRA)								
ACRMS	1795	M (NRA)								
300 SW Gate	6149	BW								
300 South Gate	6151	M (NRA)								
300 Pond	6239	M (NRA)							1501	M
400 E	6309	BW	6428		M					
400 W	6458	BW								
400 S	6459	BW								
400 N	6460	BW								
Hanford	1666	M (NRA)	0903		M					
Wye Barricade	1584	M (NRA)	0904		M	0915		BM		

1.2 AIR - GASES/VAPOR (Cont'd.)

Location	Iodine-131		Tritium			Carbon-14			Krypton-85	
	Sample Number	Frequency	HTO Sample Number	HT Sample Number	Frequency	CO ₂ Sample Number	CH Sample Number	Frequency	Sample Number	Frequency
<u>PERIMETER</u>										
Berg Ranch	1672	M (NRA)	0267		M					
Sagehill Met. Tower	0257	BW	0905		M					
Ringold Met. Tower	0258	M (NRA)	0906		M	0916		BM	1504	M
Fir Road	6392	BW	6393	6513	M	0917		BM	1503	M
Pettett	6352	BW								
Byers Landing	0246	BW	0273		M	0918	0053	BM		
RRC #64	6183	M (NRA)								
Horn Rapids Rd - Mile 12	0259	M (NRA)	0256		M	0919		BM		
Horn Rapids Rd - Substation	0260	M (NRA)	0268		M					
Prosser Barricade	6248	M (NRA)	0908		M	0920		BM	1502	M
ERC	1585	M (NRA)								
Rattlesnake Springs	1586	M (NRA)								
Yakima Barricade	1667	M (NRA)	0902		M					
Vernita Bridge	1668	M (NRA)	0265		M					
Wahluke Slope #2	1671	M (NRA)	0266		M					
<u>COMMUNITY</u>										
Othello	1673	M (NRA)								
Connell	1674	M (NRA)								

1.2 AIR - GASES/VAPOR (Cont'd.)

<u>Location</u>	<u>Iodine-131</u>		<u>Tritium</u>			<u>Carbon-14</u>			<u>Krypton-85</u>	
	<u>Sample Number</u>	<u>Frequency</u>	<u>HTO Sample Number</u>	<u>HT Sample Number</u>	<u>Frequency</u>	<u>CO₂ Sample Number</u>	<u>CH Sample Number</u>	<u>Frequency</u>	<u>Sample Number</u>	<u>Frequency</u>
<u>COMMUNITY</u> (Cont'd.)										
Pasco	1678	M (NRA)								
Richland	0231	M (NRA)	6207	6514	M					
Benton City	1670	BW	6411	6515	M	0921		BM		
<u>DISTANT</u>										
Moses Lake	1682	M (NRA)	0909		M					
Washtucna	1683	M (NRA)								
Walla Walla	0261	M (NRA)								
McNary Dam	1684	M (NRA)								
Sunnyside	1680	BW	0910	0911	M	0922		BM	1505	M
Sunnyside #2							0923	BM		

1.3 COLUMBIA RIVER WATER

Location	Sample Type	Sample Number	Frequency	Analyses
Priest Rapids Dam	Cumulative (Collected Weekly)	1265	M Comp	Alpha, Beta, ^3H , Gamma Scan, ^{89}Sr , ^{90}Sr , U
	Particulate (filter)	6395	BW Q Comp	Gamma Scan ^{238}Pu , $^{239-240}\text{Pu}$
	Soluble (resin)	6394	BW Q Comp	Gamma Scan ^{129}I , ^{238}Pu , $^{239-240}\text{Pu}$
	Grab	0097	M ^(a)	NO_3 , Coliforms, Fecal Coliforms, BOD
		0098	Q	WQ - NASQAN ^(b)
			Cont. ^(c)	pH
Richland	Thermograph		Cont. ^(d)	Temperature
	Cumulative (Collected Weekly)	1000	M Comp	Alpha, Beta, ^3H , Gamma Scan, ^{89}Sr , ^{90}Sr , U
	Grab	1365	M ^(a)	NO_3 , Coliforms, Fecal Coliforms, BOD
		6429	Q	WQ - NASQAN
			Cont. ^(c)	pH
	Thermograph		Cont. ^(d)	Temperature
300 Area Forebay	Particulate (filter)	6385	BW Q Comp	Gamma Scan ^{238}Pu , $^{239-240}\text{Pu}$
	Soluble (resin)	6384	BW Q Comp	Gamma Scan ^{129}I , ^{238}Pu , $^{239-240}\text{Pu}$

(a) Analysis performed by the Hanford Environmental Health Foundation (HEHF).

(b) Numerous water quality (WQ) analyses performed by the USGS in conjunction with the National Stream Quality Accounting Network (NASQAN) program.

(c) Continuous pH monitoring to be implemented as soon as possible.

(d) Thermograph stations operated and maintained by the United States Geological Survey (USGS).

1.4 ONSITE POND WATER

<u>Location</u>	<u>Sample Type</u>	<u>Sample Number</u>	<u>Frequency</u>	<u>Analyses</u>
Gable Mountain Pond	Grab	1054	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
West Lake	Grab	6133	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
B Pond	Grab	0015	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
FFTF Percolation Pond	Grab	6467	Q	Alpha, Beta, ^3H , Gamma Scan

1.5 FOODSTUFFS

1.5.1 Whole Milk

<u>Location</u>	<u>Sample Number</u>	<u>Frequency</u>	<u>Analyses</u>
Wahluke East Area Comp ^(a)	0305	M	^{131}I , Gamma Scan, ^3H
		Q	^{89}Sr , ^{90}Sr
		SA	^{129}I
Sagemoor Area Comp ^(a)	0306	BW	^{131}I , Gamma Scan
		M	^3H
		Q	^{90}Sr
		SA	^{129}I
Riverview Area	0975	M	^{131}I , Gamma Scan, ^3H
		Q	^{89}Sr , ^{90}Sr
		SA	^{129}I
Benton City Area	6519	M	^{131}I , Gamma Scan, ^3H
		Q	^{90}Sr
		SA	^{129}I
Sunnyside Area	6355	BW	^{131}I , Gamma Scan
		M	^3H
		Q	^{89}Sr , ^{90}Sr
		SA	^{129}I
Moses Lake Area	0307	M	^{131}I , Gamma Scan, ^3H
		Q	^{90}Sr
		SA	^{129}I

^(a) Composite from three sources in area.

1.5.2 Produce (Leafy Vegetables)

<u>Location</u>	<u>Sample Number</u>	<u>Frequency^(a)</u>	<u>Analyses</u>
Wahluke East Area	0308	A	⁹⁰ Sr, Gamma Scan
Sagemoor Area	6419	A	⁹⁰ Sr, Gamma Scan
Riverview Area	1609	A	⁹⁰ Sr, Gamma Scan
Benton City Area	1612	A	⁹⁰ Sr, Gamma Scan
Sunnyside Area	6372	A	⁹⁰ Sr, Gamma Scan
Moses Lake Area	6407	A	⁹⁰ Sr, Gamma Scan

(a) Three samples collected in July at each location.

1.5.3 Fruit

<u>Location</u>	<u>Sample Type</u>	<u>Sample Number</u>	<u>Frequency^(a)</u>	<u>Analysis</u>
Sagemoor Area	Apples	0565	A	^3H , ^{90}Sr , Gamma Scan
	Cherries	0543	A	^3H , ^{90}Sr , Gamma Scan
	Grapes	6417	A	^3H , ^{90}Sr , Gamma Scan
Cold Creek Area	Apples	0304	A	^3H , ^{90}Sr , Gamma Scan
	Grapes	0303	A	^3H , ^{90}Sr , Gamma Scan
Sunnyside Area	Apples	6440	A	^3H , ^{90}Sr , Gamma Scan
	Cherries	6453	A	^3H , ^{90}Sr , Gamma Scan
	Grapes	6454	A	^3H , ^{90}Sr , Gamma Scan

(a) Three samples from each source at picking time.

1.5.4 Wheat/Alfalfa

<u>Location</u>	<u>Sample Type</u>	<u>Sample Number</u>	<u>Frequency^(a)</u>	<u>Analyses</u>
Wahluka East Area	Wheat	0320	A	⁹⁰ Sr, Gamma Scan
	Alfalfa	0311	A	⁹⁰ Sr, Gamma Scan
Sagemoor Area	Wheat	0319	A	⁹⁰ Sr, Gamma Scan
	Alfalfa	0312	A	⁹⁰ Sr, Gamma Scan
Riverview Area	Wheat	0318	A	⁹⁰ Sr, Gamma Scan
	Alfalfa	0313	A	⁹⁰ Sr, Gamma Scan
Benton City Area	Wheat	0317	A	⁹⁰ Sr, Gamma Scan
	Alfalfa	0314	A	⁹⁰ Sr, Gamma Scan
Sunnyside Area	Wheat	0316	A	⁹⁰ Sr, Gamma Scan
	Alfalfa	0315	A	⁹⁰ Sr, Gamma Scan
Moses Lake Area	Wheat	0321	A	⁹⁰ Sr, Gamma Scan
	Alfalfa	0310	A	⁹⁰ Sr, Gamma Scan

(a) Three samples each of wheat and alfalfa from each source at first cutting.

1.5.5 Beef

<u>Location</u>	<u>Sample Number</u>	<u>Frequency^(a)</u>	<u>Analyses</u>
Sagemoor Area	6418	A	⁹⁰ Sr, Gamma Scan
Riverview Area	1292	A	⁹⁰ Sr, Gamma Scan
Horn Rapids Area	6516	A	⁹⁰ Sr, Gamma Scan
Sunnyside Area	0322	A	⁹⁰ Sr, Gamma Scan

(a) If available.

1.5.6 Poultry/Eggs

<u>Location</u>	<u>Sample Type</u>	<u>Sample Number</u>	<u>Frequency^(a)</u>	<u>Analyses</u>
Sagemoor Area	Chicken	6386	SA	⁹⁰ Sr, Gamma Scan
	Eggs	6387	SA	⁹⁰ Sr, Gamma Scan
Sunnyside Area	Chicken	6371	SA	⁹⁰ Sr, Gamma Scan
	Eggs	6370	SA	⁹⁰ Sr, Gamma Scan

(a) If available.

1.6 WILDLIFE

1.6.1 Fish

<u>Location</u>	<u>Species/ Sample</u>	<u>Sample Number</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analysis</u>
Priest Rapids Dam to Vernita Bridge	Whitefish				
	Fillet	0329	5	Oct-Dec	⁹⁰ Sr, Gamma Scan
	Carcass	6493	5	Oct-Dec	⁹⁰ Sr
100 D	Whitefish				
	Fillet	6431	10	Oct-Dec	⁹⁰ Sr, Gamma Scan
	Carcass	6490	10	Oct-Dec	⁹⁰ Sr
100-F Slough	Bass				
	Fillet	6369	5	May-June	⁹⁰ Sr, Gamma Scan
	Carcass	0338	5	May-June	⁹⁰ Sr
<u>OFFSITE</u>					
Wanapum Dam	Whitefish				
	Fillet	0362	10	November	⁹⁰ Sr, Gamma Scan
	Carcass	0363	10	November	⁹⁰ Sr

1.6.2 Ducks

<u>Location</u>	<u>Species^(a)/ Sample^(b)</u>	<u>Sample Number</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analysis</u>
100-N Area	Mallard				
	Muscle	0456	4	September	⁹⁰ Sr, Gamma Scan
	Liver	0457	4	September	NRA
	Bone	0458	4	September	NRA
B Pond	Mallard				
	Muscle	0444	4	September	Gamma Scan
	Liver	0445	4	September	NRA
	Bone	0446	4	September	NRA
Gable Mt. Pond	Mallard				
	Muscle	0447	20	September	Gamma Scan
	Liver	0448	20	September	NRA
	Bone	0449	20	September	NRA
U Pond	Mallard				
	Muscle	0450	4	September	Gamma Scan
	Liver	0451	4	September	NRA
	Bone	0452	4	September	NRA
300 Area Trenches	Mallard				
	Muscle	0453	4	September	Gamma Scan
	Liver	0454	4	September	NRA
	Bone	0455	4	September	NRA

(a) Mallard preferred; other puddle ducks acceptable if Mallard is unavailable.

(b) Retain liver and bone to be analyzed for plutonium and ⁹⁰Sr if ¹³⁷Cs exceeds 100 pCi/g (wet weight) in the muscle.

1.6.3 Game Birds

<u>Location</u>	<u>Species^(a) Sample^(b)</u>	<u>Sample Number</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analysis</u>
100-N Trench	Pheasant				
	Muscle	0479	3	October	Gamma Scan
	Liver	0480	3	October	NRA
	Bone	0481	3	October	NRA
100-D to 100-F	Pheasant				
	Muscle	0473	10	October	Gamma Scan
	Liver	0474	10	October	NRA
	Bone	0475	10	October	NRA
200 East	Pheasant				
	Muscle	0467	3	October	Gamma Scan
	Liver	0468	3	October	NRA
	Bone	0469	3	October	NRA
200 West	Pheasant				
	Muscle	0470	3	October	Gamma Scan
	Liver	0471	3	October	NRA
	Bone	0472	3	October	NRA
300 Area	Pheasant				
	Muscle	0464	3	October	Gamma Scan
	Liver	0465	3	October	NRA
	Bone	0466	3	October	NRA
<u>OFFSITE</u>					
Sagemoor Area	Pheasant				
	Muscle	0459	3	October	Gamma Scan
Sunnyside	Pheasant				
	Muscle	0460	3	October	Gamma Scan

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

(b) Retain liver and bone to be analyzed for plutonium and ⁹⁰Sr if ¹³⁷Cs exceeds 100 pCi/g (wet weight) in muscle.

1.6.4 Deer

<u>Location</u>	<u>Species/ Sample</u>	<u>Sample Number</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analysis</u>
200 Ponds	Mule				
	Muscle	0369	2	October	Gamma Scan
	Liver	0370	2	October	^{238}Pu , $^{239-240}\text{Pu}$
	Bone	0371	2	October	^{90}Sr
Road kill at Onsite Locations ^(a)	Mule				
	Muscle	ATL ^(b)	6	Annual	Gamma Scan
	Liver	ATL	6	Annual	^{238}Pu , $^{239-240}\text{Pu}$

^(a) As available.

^(b) ATL - according to location.

1.6.5 Rabbits

<u>Location</u>	<u>Species/ Sample</u>	<u>Sample Number</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analysis</u>
100-N River Bank	Cottontail				
	Muscle	6145	4	April	Gamma Scan
	Liver	6146	4	April	^{238}Pu , $^{239-240}\text{Pu}$
	Bone	6452	4	April	^{90}Sr
100-N Trench	Cottontail				
	Muscle	6523	4	April	Gamma Scan
	Liver	6525	4	April	^{238}Pu , $^{239-240}\text{Pu}$
	Bone	6524	4	April	^{90}Sr
200 East	Jack Rabbit				
	Muscle	1769	4	April	Gamma Scan
	Liver	1770	4	April	^{238}Pu , $^{239-240}\text{Pu}$
	Bone	6432	4	April	^{90}Sr
200 West	Jack Rabbit				
	Muscle	1789	4	April	Gamma Scan
	Liver	1790	4	April	^{238}Pu , $^{239-240}\text{Pu}$
	Bone	6413	4	April	^{90}Sr

1.7 SOIL AND VEGETATION

<u>Location</u>	<u>Soil Sample Number</u>	<u>Vegetation Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
1 Mile NE of N Area	0590	0591	A	Gamma Scan ^{90}Sr , U, Pu ^(a)
1 Mile E of N Area	0578	0579	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
100 Area Fire Station	0580	0585	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
200 ENC	6362	6368	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
1.25 Miles E of Purex	0581	0586	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
200 ESE Air Sampling Station	6022	6068	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
2 Miles S of Purex	0582	0587	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
SW of BC Cribs	0583	0588	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
E of 200-W Gate	6276	6283	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
2 Miles S of 200 W	0584	0589	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
Rattlesnake Springs	6003	6049	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
Yakima Barricade	6004	6050	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
1/2 Mile NE of FFTF Site	6282	6285	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
SE Side of FFTF Site	6277	6286	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
N of 300 Area	6322	6328	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
S of 300 Area	6323	6329	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
Hanford Townsite (CP#57)	6017	6063	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
Wye Barricade	6016	6062	A	Gamma Scan, ^{90}Sr , U, Pu ^(a) , ^{241}Am ^(b)
Prosser Barricade	6225	6227	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)
East of ALE Field Lab	6278	6287	A	Gamma Scan, ^{90}Sr , U, Pu ^(a)

(a) ^{238}Pu , $^{239-240}\text{Pu}$.

(b) Analyses performed on soil sample only.

1.7 SOIL AND VEGETATION (Cont'd)

<u>Location</u>	<u>Soil Sample Number</u>	<u>Vegetation Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
Vernita Bridge N End	6005	6051	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Wahluke #2 Air Sampling Station	6007	6053	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Berg Ranch Air Sampling Station	6008	6054	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Ringold	6009	6055	A	Gamma Scan, ^{90}Sr , U, Pu (a)
W End Fir Road	6360	6366	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Taylor Flats #2	6421	6423	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Sagemoor Farms	6358	6364	A	Gamma Scan, ^{90}Sr , U, Pu (a), ^{241}Am (b)
Byers Landing Air Sampling Station	6011	6057	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Harris Farm	6361	6367	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Benton City	6000	6046	A	Gamma Scan, ^{90}Sr , U, Pu (a)
Sunnyside	6357	6363	A	Gamma Scan, ^{90}Sr , U, Pu (a), ^{241}Am (b)

(a) ^{238}Pu , $^{239-240}\text{Pu}$.

(b) Analysis performed on soil samples only.

1.8 DIRECT RADIATION

1.8.1 Ambient Dose Rate

<u>Location</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Measurement</u>
Coyote Rapids	6135	M	Immersion Dose
Richland Pumphouse	1715	M	Immersion 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
Rt. 11A-Mile 9 ^(a)	0327	M	Ambient Dose
N of 200 E ^(a)	0324	M	Ambient Dose
200 Tel. Exchange ^(a)	0325	M	Ambient Dose
SW of BC Cribs ^(a)	0328	M	Ambient Dose
S of 200 E ^(a)	1619	M	Ambient Dose
Army Loop Camp ^(a)	0326	M	Ambient Dose
E of 200 E ^(a)	1618	M	Ambient Dose
200 ESE ^(a)	1468	M	Ambient Dose
3705 Building ^(a)	1486	M	Ambient Dose
ACRMS ^(a)	1698	M	Ambient Dose
300 Southwest Gate ^(a)	6163	M	Ambient Dose
300 South Gate ^(a)	6162	M	Ambient Dose
300 Pond ^(a)	1699	M	Ambient Dose
377 Bldg. South Fence	1465	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
Hanford ^(a)	1480	M	Ambient Dose
Wye Barricade ^(a)	1483	M	Ambient Dose
Berg Ranch ^(a)	1491	M	Ambient Dose
Sagehill Met. Tower ^(a)	0927	M	Ambient Dose
Ringold Met. Tower ^(a)	0928	M	Ambient Dose
Fir Road ^(a)	6356	M	Ambient Dose
Pettett ^(a)	6353	M	Ambient Dose
Sagemoor Farms	6354	M	Ambient Dose
Byers Landing ^(a)	1498	M	Ambient Dose
RRC #64 ^(a)	6171	M	Ambient Dose
Horn Rapids Rd-Mile 12 ^(a)	0925	M	Ambient Dose

(a) Located at Air Sampling Station

1.8.1 Ambient Dose Rate (Cont'd)

<u>Location</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Measurement</u>
Horn Rapids Rd Substation ^(a)	0926	M	Ambient Dose
Prosser Barricade ^(a)	6176	M	Ambient Dose
ERC ^(a)	1484	M	Ambient Dose
Rattlesnake Springs ^(a)	1485	M	Ambient Dose
Yakima Barricade ^(a)	1482	M	Ambient Dose
Vernita Bridge ^(a)	1481	M	Ambient Dose
Wahluke Slope #2 ^(a)	1490	M	Ambient Dose
Othello ^(a)	1493	M	Ambient Dose
Connell ^(a)	1494	M	Ambient Dose
Pasco ^(a)	1488	M	Ambient Dose
Richland ^(a)	1487	M	Ambient Dose
Benton City ^(a)	1499	M	Ambient Dose
Moses Lake ^(a)	1693	M	Ambient Dose
Washtucna ^(a)	1694	M	Ambient Dose
Walla Walla ^(a)	1695	M	Ambient Dose
McNary Dam ^(a)	1696	M	Ambient Dose
Sunnyside ^(a)	1500	M	Ambient Dose
Up River 100-B Area	6471	Q	Ambient Dose
Below 100-B Retention Basin	6472	Q	Ambient Dose
Above 100-K Boat Ramp	6260	Q	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
100-N Trench Spring	6390	M	Ambient Dose
Down River 100 D	6475	Q	Ambient Dose
Down River Opposite 100 D	6261	Q	Ambient Dose
Lower End Locke Island	6262	Q	Ambient Dose
White Bluffs Ferry Landing	6263	Q	Ambient Dose
White Bluffs Slough	6476	Q	Ambient Dose
100-F Area Floodplain	6477	Q	Ambient Dose
Below 100 F	6264	Q	Ambient Dose
Hanford Peninsula	6478	Q	Ambient Dose
Hanford Power-Line Crossing	6389	Q	Ambient Dose
Hanford Ferry Landing	6265	Q	Ambient Dose
Hanford RR Track	6266	Q	Ambient Dose
Savage Island Slough	6479	Q	Ambient Dose
Ringold Island	6267	Q	Ambient Dose
Power-Line Crossing	6268	Q	Ambient Dose
North End Wooded Island	6480	Q	Ambient Dose
South End Wooded Island	6269	Q	Ambient Dose
Island River Mile 344	6481	Q	Ambient Dose
Island River Mile 333	6482	Q	Ambient Dose

(a) Located at Air Sampling Station

1.8.2 Columbia River Shoreline Surveys

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

2.0 ONSITE RADIATION CONTROL SURVEYS

2.1 ROADWAY RADIATION SURVEYS

Description	Identification Number	Frequency	Instrument
1100 Area to FFTF Rt. 4-S and return to 300 Area Barricade.	1	W	Road Monitor
FFTF to U.S. Ecology Rt. 4-S.	2	W	Road Monitor
200 W to 100 K and 100 N NW Gate of 200 W to 11A, to Rt. 4-N to Rt. 1 to 100 K, back to Rt. 4-N to 100 N and back to Rt. 1.	3	M	Road Monitor
Yakima Barricade to U.S. Ecology Yakima Barricade to Rt. 4-S, to U.S. Ecology. Return to Rt. 4-S and Rt. 3, do both sides Rt. 3 from Rt. 4-S to 11A.	4	Q	Road Monitor
Army Loop Road From Rt. 4-S to Rt. 11A.	5	A	Road Monitor
U.S. Ecology to FFTF via Horn Rapids U.S. Ecology (Rt. 4-S) to Rt. 10 to FMEF cutoff to FFTF, back to Rt. 10 to Rt. 4-S to East gate FFTF.	6	A	Road Monitor
300 Area through 1100 Area 300 Area Barricade to Rt. 4-S to garage, stores, gas station, parking lot to Rt. 4-S to first street, to JA Jones shop area to first street, to G.W. Way to Rt. 4-S back to G.W. Way to U.S. Testing.	7	A	Road Monitor
Yakima Barricade to 100 B-C and 200 N Yakima Barricade to 11A to Rt. 6 to 100 B-C to 100-K turnoff back to 100 B-C to cutoff Rt. 4-N, back on cutoff to B-C to Rt. 6 to Rt. 11A to 200 N to Rt. 4-N and back through 200 N to Rt. 11A.	8	A	Road Monitor
Wye Barricade to 100 N Wye Barricade to Rt. 2-S to Rt. 2-N to 100-N turnoff on Rt. 4-N and return same route.	9	A	Road Monitor
Rt. 2-S and Rt. 11A to White Bluffs Rt. 2-S and Rt. 11A, go west on Rt. 11A to Rt. 4-N to Rt. 1 to Rt. 2-N. Return to White Bluffs turnoff to river, go back to Rt. 1 to Rt. 4-N to Rt. 11A to Rt. 2-S.	10	A	Road Monitor
300 Area 300 Area Barricade to 3701 badgehouse back on Cypress to 331 perimeter road to 3765 Building to 300 east perimeter fence to north perimeter fence. From north perimeter fence (River Road) to north process pond to Rt. 2-S through north parking lot back to 2-S and 300 Area Barricade.	11	Q	Road Monitor

2.1 ROADWAY RADIATION SURVEYS (Cont'd)

<u>Description</u>	<u>Identification Number</u>	<u>Frequency</u>	<u>Instrument</u>
400 Area From access road through east parking lot around north perimeter, west and south to access road.	12	Q	Road Monitor

2.2 RAILWAY RADIATION SURVEYS

<u>Description</u>	<u>Identification Number</u>	<u>Frequency</u>	<u>Instrument</u>
300 Area to FFTF fence.	1	M	Railway Monitor
200 East to Ethel, Ethel to 200 West, 200 West to Ethel, Ethel to 100 K, 100 K to 100 N.	2	M	Railway Monitor
Geneva junction to Pearl junction via May junction.	3	Q	Railway Monitor
May junction via Low- Line to 100 N.	4	A	Railway Monitor

2.3 AERIAL RADIATION SURVEYS

<u>Description</u>	<u>Identification Number</u>	<u>Frequency</u>	<u>Instrument</u>
Project Perimeter	3	A	Aerial Monitor

2.4 WASTE DISPOSAL SITE RADIATION SURVEYS

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 and status of enclosure.

<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
109-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
100-H Liquid Waste Burial	SA
100-H #1 B. G.	SA
100-H #2 B. G.	SA
P-11 Area	A

2.4 WASTE DISPOSAL SITE RADIATION SURVEYS (Cont'd.)

Description	Frequency
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 U.S. Ecology 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

PART II. HANFORD GROUND-WATER MONITORING PROGRAM

1.0 400 AREA WELLS

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(499) S0-7	4817	Q	^3H , NO_3 , Gamma Scan
S0-8	4818	Q	^3H , NO_3 , Gamma Scan
S1-7B	4819	Q	^3H , NO_3 , Gamma Scan
S1-7C	4877	Q	Beta, NO_3 , U, Cr, F, Gamma Scan
S1-8A	4878	Q	Beta, NO_3 , U, Cr, F, Gamma Scan
S1-8B	4879	Q	Beta, NO_3 , U, Cr, F, Gamma Scan

2.0 600 AREA WELLS

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(699) S3-25	4787	Q	^3H , NO_3
		A	WQ
S3-E12	4553	Q	^3H , NO_3
		A	WQ
S6-E4 B	4502	Q	^3H , NO_3 , U
S6-E4 D	4504	Q	^3H , NO_3 , U
S6-E14	4580	Q	^3H , NO_3 ,
S7-34	4427	Q	^3H , NO_3 ,
S8-19	4421	Q	^3H , NO_3 ,
S11-E12A(0)	4552	Q	^3H , NO_3 ,
S11-E12A P	4747	Q	^3H , NO_3
S12-3	4424	Q	^3H , NO_3
S12-29	4592	Q	NO_3
S14-20 A	4535	Q	VO_3
S18-51	4852	Q	VO_3 , F
S19-11	4780	SA	VO_3
S19-E13	4802	Q	VO_3 , F, U
		A	WQ
S24-19	4510	SA	NO_3
S27-E14	4413	M	NO_3 , U, F, Cr
S28-E0	4764	Q	^3H , NO_3
S29-E12	4803	Q	NO_3 , F, U
S30-E15 A	4804	Q	NO_3 , F, U, Cr
S31-1(0)	4745	Q	^3H , NO_3
		A	WQ
1-18	4513	Q	^3H , NO_3
2-3	4423	M	^3H , NO_3
		Q	Gamma Scan
		A	WQ
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	^3H , NO_3 , Gamma Scan
8-25	4788	Q	^3H , NO_3 , Gamma Scan
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	Gamma Scan

2.0 600 AREA WELLS (Cont'd)

Well Number	Sample No.	Frequency	Analyses
(699) 13-64	4429	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	^3H , NO_3 , Gamma Scan
15-26	4464	Q	^3H , NO_3 , Gamma Scan
		A	WQ
17-5	4422	Q	^3H , NO_3 , Gamma Scan
17-47	4530	Q	^3H , NO_3
17-70	4531	Q	^3H , NO_3
19-43	4417	Q	^3H , NO_3
		A	WQ
19-58	4528	Q	NO_3
19-88	4522	Q	NO_3
20-E5 A	4838	Q	^3H , NO_3 , Gamma Scan
		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(0)	4567	Q	^3H , NO_3
20-E12 P	4611	Q	^3H , NO_3
20-20	4418	Q	^3H , NO_3 , Gamma Scan
20-39	4559	Q	^3H , NO_3
		A	Gamma Scan
20-82	4529	Q	^3H , NO_3
22-70	4595	Q	^3H , NO_3
		A	Gamma Scan
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	4709	Q	^3H , NO_3
24-33	4416	Q	^3H , NO_3 , Gamma Scan
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	^3H , NO_3 , Gamma Scan
		A	WQ

2.0 600 AREA WELLS (Cont'd)

Well Number	Sample No.	Frequency	Analyses
(699) 26-89	4598	SA	NO ₃
		A	WQ
27-4	4857	M	³ H, NO ₃
27-8	4557	Q	³ H, NO ₃ , Gamma Scan
28-40(0)	4481	Q	³ H, NO ₃ , Gamma Scan
28-40 P	4754	Q	³ H, NO ₃ , Gamma Scan
28-52	4521	Q	³ H, NO ₃ , Gamma Scan
29-78	4594	Q	³ H, NO ₃
31-31(0)	4471	Q	³ H, NO ₃ , Gamma Scan
31-31 P	4738	Q	³ H, NO ₃ , Gamma Scan
31-53 B	4520	SA	³ H, NO ₃ , Gamma Scan
		A	WQ
32-22	4794	Q	³ H, NO ₃ , Gamma Scan
32-43	4778	Q	³ H, NO ₃ , Gamma Scan
32-62	4550	Q	³ H, NO ₃ , Alpha
32-70	4492	Q	³ H, NO ₃ , Gamma Scan
32-72	4491	Q	³ H, NO ₃ , Gamma Scan
32-77	4446	Q	³ H, NO ₃ , Gamma Scan
33-42	4779	Q	³ H, NO ₃ , Gamma Scan
33-56	4523	Q	Alpha, ³ H, NO ₃ , Gamma Scan
34-39 A	4448	Q	³ H, NO ₃ , Gamma Scan
34-41	4789	Q	³ H, NO ₃ , Gamma Scan
34-42	4790	Q	³ H, NO ₃ , Gamma Scan
		A	WQ
34-51	4414	Q	³ H, NO ₃ , Gamma Scan
34-88	4439	Q	³ H, NO ₃
35-9	4419	Q	³ H, NO ₃ , Gamma Scan
35-66	4494	Q	³ H, NO ₃ , Gamma Scan
35-70	4441	Q	³ H, NO ₃ , Gamma Scan
		A	WQ
36-46 P	4751	Q	³ H, NO ₃
		SA	Gamma Scan
36-46 Q	4752	Q	³ H, NO ₃
		SA	Gamma Scan
36-61 A	4447	Q	NO ₃
36-61 B	4549	Q	³ H, NO ₃
36-93	4579	SA	³ H, NO ₃
		A	WQ
37-43	4480	Q	³ H, NO ₃ , Gamma Scan
37-82 A	4554	Q	³ H, NO ₃
38-15	4880	Q	³ H, NO ₃ , Gamma Scan

2.0 600 AREA WELLS (Cont'd)

Well Number	Sample No.	Frequency	Analyses
(699) 38-65	4546	Q	^3H , NO_3
		SA	Gamma Scan
38-70	4493	Q	^3H , NO_3 , Gamma Scan
39-1	4871	M	^3H , NO_3 , Gamma Scan
39-E3	4876	M	^3H , NO_3 , Gamma Scan
39-39	4791	SA	^3H , NO_3 , Gamma Scan
39-79	4444	Q	^3H , NO_3 , Gamma Scan
40-1	4566	Q	^3H , NO_3
		A	Gamma Scan, WQ
40-33	4431	Q	^3H , NO_3
		A	Gamma Scan, WQ
40-62	4458	Q	^3H , NO_3
41-1	4858	M	^3H , NO_3
41-23	4430	Q	^3H , NO_3 , Gamma Scan
42-2	4859	M	^3H , NO_3
42-12	4517	Q	^3H , NO_3 , Gamma Scan
43-3	4861	M	^3H , NO_3
43-88	4836	Q	^3H , NO_3
44-4	4872	Q	^3H , NO_3 , Gamma Scan
44-64	4548	Q	^3H , NO_3 , Gamma Scan
45-4	4862	M	^3H , NO_3 , Gamma Scan
45-42	4450	Q	^3H , NO_3 , Gamma Scan
		A	WQ
45-69	4449	Q	^3H , NO_3
		SA	Gamma Scan
		A	WQ
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
47-46	4564	Q	^3H , NO_3
		SA	Gamma Scan
47-60	4434	Q	^3H , NO_3 , Gamma Scan
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	^3H , NO_3 , Gamma Scan
49-57	4485	Q	^3H , NO_3 , Gamma Scan

2.0 600 AREA WELLS (Cont'd)

Well Number	Sample No.	Frequency	Analyses
(699) 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	^3H , NO_3 , Gamma Scan
		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	Gamma Scan
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
54-57	4469	Q	^3H , NO_3
55-40	4639	Q	^3H , NO_3
55-44	4640	Q	^3H , NO_3
55-50(AC)	4433	Q	^3H , NO_3
55-50 C	4483	Q	^3H , NO_3
		SA	Gamma Scan
		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

2.0 600 AREA WELLS (Cont'd)

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(699) 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	WQ
64-27	4599	Q	NO_3
		SA	^3H
		A	WQ
64-62	4824	Q	^3H , NO_3
65-23	4851	SA	^3H , NO_3
65-50	4477	Q	^3H , NO_3
65-59	4532	Q	^3H , NO_3
65-72	4468	Q	^3H , NO_3
65-83	4775	Q	^3H , NO_3
66-23	4547	Q	NO_3
66-38	4586	Q	NO_3
66-39	4812	Q	NO_3
66-58	4821	Q	^3H , NO_3
66-64	4820	Q	^3H , NO_3
		A	WQ
66-103	4587	SA	^3H , NO_3
		A	Gamma Scan
67-51	4561	Q	^3H , NO_3
67-86	4585	Q	^3H , NO_3
67-98	4556	Q	^3H , NO_3
68-105	4588	SA	^3H , NO_3
		A	Gamma Scan
69-38	4461	Q	^3H , NO_3
70-68	4455	SA	^3H , NO_3
71-30	4490	SA	^3H , NO_3
71-52	4454	Q	^3H , NO_3

2.0 600 AREA WELLS (Cont'd)

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(699) 71-77	4584	SA	^3H , NO_3
		A	WQ
72-73	4569	SA	^3H , NO_3
72-88	4465	Q	^3H , NO_3
		A	WQ
72-92	4565	SA	^3H , NO_3
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(0)	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

3.0 100 AREA WELLS

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(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
B4-3	1855	Q	^3H , NO_3
B4-4	1891	SA	^3H , NO_3 , Gamma Scan
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	^3H , NO_3 , Gamma Scan
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 , U, Cr, F, NO_3 , Cu, Gamma Scan, Beta
		A	WQ
H4-3	1877	Q	^3H , U, Cr, F, NO_3 , Cu, Gamma Scan, Beta
		A	WQ
H4-4	1878	Q	^3H , U, Cr, F, NO_3 , Cu, Gamma Scan, Beta
		A	WQ
H4-5	1873	Q	^3H , U, Cr, F, NO_3 , Cu, Gamma Scan, Beta
		A	WQ
H4-6	1874	Q	^3H , U, Cr, F, NO_3 , Cu, Gamma Scan, Beta
		A	WQ
K-11	1882	Q	^3H , NO_3
		SA	Gamma Scan
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 , Gamma Scan
K-28	1912	Q	^3H , Gamma Scan
K-29	1913	Q	^3H , Gamma Scan
K-30	1914	Q	^3H , Gamma Scan
N-2	1904	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr ,
N-3(0)	1896	Q	^3H , Gamma Scan
		SA	^{90}Sr

3.0 100 AREA WELLS (Cont'd)

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(199) N-4	1899	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-5	1909	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-6	1901	Q	^3H , Gamma Scan
		SA	^{90}Sr
N-7	1910	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-14	1902	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-15	1903	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-16	1915	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-17	1916	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-18	1917	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-19	1918	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-20	1919	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-21	1920	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-22	1921	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-23	1922	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-24	1923	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-25	1924	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-26	1925	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-27	1926	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-28	1927	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-29	1928	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr

3.0 100 AREA WELLS (Cont'd)

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(199) N-30	1929	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-31	1930	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-32	1931	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-33	1932	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr
N-34	1933	Q	^3H , NO_3 , Gamma Scan
		SA	^{90}Sr

4.0 200 AREA WELLS

<u>Well Number</u>	<u>Sample No.</u>	<u>Frequency</u>	<u>Analyses</u>
(299) E19-1	2359	Q	^3H , NO_3 , Gamma Scan
E23-1	2553	Q	^3H , NO_3 , Gamma Scan
E24-7	2542	Q	^3H , NO_3 , Gamma Scan
E25-2	2554	Q	^3H , NO_3 , Gamma Scan
E26-1	2545	Q	^3H , NO_3 , Gamma Scan
E26-3	2365	Q	^3H , NO_3 , Gamma Scan
E27-1	2287	Q	^3H , NO_3 , Gamma Scan
E28-1	2555	Q	^3H , NO_3 , Gamma Scan
E28-5	2285	Q	^3H , NO_3 , Gamma Scan
E33-14	2297	Q	^3H , NO_3 , Gamma Scan
E34-1	2549	M	NO_3
W6-1	2990	Q	^3H , NO_3 , Gamma Scan
W10-5	2890	Q	^3H , NO_3 , Gamma Scan
W11-9	2881	Q	^3H , NO_3 , Gamma Scan
W12-1	2883	Q	^3H , NO_3 , Gamma Scan
W15-2	2891	Q	^3H , NO_3 , Gamma Scan
W18-3	3011	Q	^3H , NO_3 , Gamma Scan
W19-4	2938	Q	^3H , NO_3 , Gamma Scan
W21-1	2930	Q	^3H , NO_3 , Gamma Scan
W22-7	3014	Q	^3H , NO_3 , Gamma Scan
W22-9	3013	Q	^3H , NO_3 , Gamma Scan
W22-10	2906	Q	Alpha, ^{90}Sr , Gamma Scan

5.0 300 AREA WELLS

Well Number	Number	Frequency	Analyses
(399) 1-1	4403	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
1-2	4404	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
1-3	4406	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
1-4	4407	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
1-5	4806	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan (To HEDL Monthly)
1-6	4837	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
2-1	4402	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
2-2	4633	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
2-3	4634	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
3-1	4401	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
3-2	3033	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
3-3	3034	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
3-6	3031	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
3-7	4839	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
3-9	4626	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan, ⁹⁰ Sr
3-10	4627	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan, ⁹⁰ Sr
3-11	4628	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan, ⁹⁰ Sr
3-12	4870	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan, ⁹⁰ Sr
4-1	4410	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
4-7	4568	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
4-9	4629	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan, ⁹⁰ Sr
4-10	4630	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan, ⁹⁰ Sr
5-1	4411	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
6-1	4409	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
8-1	4405	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
8-2	4408	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
8-3	4412	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan
8-4	4865	Q	Beta, NO ₃ , U, Cr, F, Gamma Scan

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