Hanford Site Environmental Surveillance
Master Sampling Schedule

L. E. Bisping

January 2001

Prepared for the U.S. Department of Energy
under Contract DE-AC06-76RL01830
HANFORD SITE ENVIRONMENTAL SURVEILLANCE
MASTER SAMPLING SCHEDULE

L. E. Bisping

January 2001

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

Pacific Northwest National Laboratory
Richland, Washington 99352
SUMMARY


This document contains the CY 2001 schedules for the routine collection of samples for the Surface Environmental Surveillance Project (SESP) and Drinking Water Monitoring Project. Each section includes sampling locations, sample types, and analyses to be performed. In some cases, samples are scheduled on a rotating basis and may not be collected in 2001 in which case the anticipated year for collection is provided. In addition, a map showing approximate sampling locations is included for each media scheduled for collection in 2001.

**SESP SAMPLING**

The SESP is a multimedia environmental surveillance effort to measure the concentrations of radionuclides and chemicals in environmental media and assess the integrated effects of these materials on the environment and the public. Project staff collect samples of air, surface water, agricultural products, wildlife, and sediments. In addition, soil and natural vegetation samples are collected approximately every 5 years. Analytical capabilities include the measurement of radionuclides at very low environmental concentrations and, in selected media, nonradiological chemicals including metals, anions, and volatile organic compounds. In addition, the project includes the capability to measure ambient external radiation.

**DRINKING WATER MONITORING PROJECT SAMPLING**

The responsibility for monitoring onsite drinking water falls outside the scope of the SESP. The operator of the onsite drinking water systems (DynCorp Tri-Cities Services, Inc.) is responsible for monitoring drinking water quality as defined in the National Drinking Water Standards and Washington Administrative Code WAC 246-290. PNNL conducts radiological monitoring of onsite drinking water for DynCorp concurrent with the SESP to promote efficiency and consistency, utilize expertise developed

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\(^{(a)}\) Pacific Northwest National Laboratory is operated by Battelle Memorial Institute for the U.S. Department of Energy under Contract DE-AC06-76RLO 1830.
over the years, and reduce costs associated with management, procedure development, analytical contracting, data management, quality control, and reporting.

DATA MANAGEMENT

The Hanford Environmental Information System (HEIS) database is used as a repository for data gathered during environmental surveillance activities at the Hanford Site. For ease in retrieving these data from the HEIS database, the location names in this document reflect the exact location names used in the HEIS.

SCHEDULED 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.

COSAMPLES

Samples that are cosampled and analyzed by both PNNL and the Washington State Department of Health (DOH) are indicated in the schedule as are samples that are cosampled and analyzed by both PNNL and the U.S. Food and Drug Administration (FDA).

ADDITIONAL INFORMATION

Questions relating to the content of this document can be directed to T. M. Poston, Manager, Surface Environmental Surveillance Project, (509) 376-5678 or R. W. (Bill) Hanf, Manager, Drinking Water Monitoring Project, (509) 376-8264.
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ABBREVIATIONS

FREQUENCY SYMBOLS USED

A     annually
BE    biennial (every 2 years)
BW    biweekly (every 2 weeks)
M     monthly
M Comp. monthly composite
Q     quarterly
Q Comp. quarterly composite
SA    semianually
TE    triennial (every 3 years)

ANALYTICAL SYMBOLS USED

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

Alpha   gross alpha activity of sample
Anions   major anions—generally chloride, fluoride, nitrate, nitrite, sulfate
Beta     gross beta activity of sample
Gamma Scan analysis of photon energy spectrum for individual photon-emitting radionuclides
HTO      tritiated water (³H²H¹⁶O)
ICP-u, ICP-3 major metals by inductively coupled plasma spectrometry—samples unfiltered unless otherwise noted
Lo³H    analytical procedure includes electrolytic enrichment
Pu      Isotopic plutonium (²³⁸Pu, ²³⁹/²⁴⁰Pu)
SEM/AVS Simultaneously Extracted Metals/Acid Volatile Sulfide
TOC     Total Organic Carbon
U       Isotopic uranium (²³⁴U, ²³⁵U, ²³⁸U)
VOA     Volatile Organic Compounds

INSTRUMENT SYMBOLS USED

BICRON Microrem meter
GM     Geiger-Müller counter
PIC    Pressurized ionization chamber
## 1.0 AIR SURVEILLANCE

### 1.1 AIR – PARTICULATE FILTER

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(a) Refer to Figure 1.1, 2001 Air Sampling Locations.
(b) Washington State Department of Health air sampler also at this location.
(c) Sample is collected biweekly for one quarter and composited for the quarter indicated.
(d) Community-operated environmental surveillance station.
### 1.2 AIR – TRITIUM AND IODINE

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(a) Refer to Figure 1.1, 2001 Air Sampling Locations.
(b) Samples are collected monthly and composited for quarterly analyses.
(c) As HTO.
(d) Two silica gel samples are collected from this location.
(e) Washington State Department of Health air sampler also at this location.
(f) Community-operated environmental surveillance station.
Figure 1.1. 2001 Air Sampling Locations
## 2.0 SURFACE WATER SURVEILLANCE

### 2.1 WATER – COLUMBIA RIVER

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<td>M Comp. (b)</td>
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<td>Soluble (resin)</td>
<td>M Comp. (d)</td>
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<tr>
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<td>Cumulative</td>
<td>M Comp. (b)</td>
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<td>M Comp. (d)</td>
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<td>Soluble (resin)</td>
<td>M Comp. (d)</td>
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<td></td>
<td>Grab</td>
<td>Q</td>
<td>USGS-NASQAN$^{(e)}$</td>
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<tr>
<td>Rich.Pmphs-1 HRM46.4</td>
<td>Transect</td>
<td>Q</td>
<td>Lo $^3$H, $^{90}$Sr, U, ICP-3, ICP-3 Filtered, Anions, DOH$^{(f)}$</td>
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<tr>
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<td>Lo $^3$H, $^{90}$Sr, U, ICP-3, ICP-3 Filtered, Anions</td>
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### 2.1 WATER – COLUMBIA RIVER (contd)

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<th>Analyses</th>
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<tr>
<td>Vernita-3 HRM 0.3</td>
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<tr>
<td>Vernita-4 HRM 0.3</td>
<td>Transect</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} ) Cyanide, VOA</td>
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<tr>
<td>100 N -1 HRM 9.5</td>
<td>Transect</td>
<td>A</td>
<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<td>100 N -2 HRM 9.5</td>
<td>Transect</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<td>Transect</td>
<td>A</td>
<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<tr>
<td>100 F -2 HRM 19.0</td>
<td>Transect</td>
<td>A</td>
<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<tr>
<td>100 F -3 HRM 19.0</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<td>Transect</td>
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<td>Hanfrd TS-2 HRM 28.7</td>
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<td>Hanfrd TS-7 HRM 28.7</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<td>Hanfrd Twnsite HRM26</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} )</td>
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<td>300 Area-1 HRM 43.1</td>
<td>Transect</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} ) DOH(^{(f)})</td>
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<td>300 Area-2 HRM 43.1</td>
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<td>300 Area-3 HRM 43.1</td>
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<td>300 Area-5 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} ) DOH(^{(f)})</td>
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<td>300 Area-7 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} ) DOH(^{(f)})</td>
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<tr>
<td>300 Area-10 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} ) DOH(^{(f)})</td>
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<tr>
<td>300 Area Shr HRM41.5</td>
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<td>( ^3 \text{H}, ^{90} \text{Sr}, \text{U}, \text{ICP-3, ICP-3 Filtered, Anions} ) DOH(^{(f)})</td>
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### 2.1 WATER – COLUMBIA RIVER (contd)

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<td>300 Area Shr HRM42.1</td>
<td>Transect</td>
<td>A</td>
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<td>300 Area Shr HRM42.5</td>
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<td>$^{3}$H, $^{90}$Sr, U, ICP-3, ICP-3 Filtered, Anions, DOH$^{(f)}$</td>
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<td>$^{3}$H, $^{90}$Sr, U, ICP-3, ICP-3 Filtered, Anions, DOH$^{(f)}$</td>
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</tbody>
</table>

(a) Refer to Figure 2.1, 2001 Surface Water and Drinking Water Sampling Locations. HRM is referenced to Hanford River mile. 
(b) Cumulative sample is collected weekly and composited for analysis. 
(c) Cosample provided to the Washington State Department of Health (January and June only). 
(d) Sample is collected biweekly and composited for analysis. 
(e) Analyses are performed by the United States Geological Survey (USGS) in conjunction with the National Stream Quality Accounting Network (NASQAN) Program, and includes: conductance, pH, temperature, turbidity, dissolved oxygen, hardness, Ca, Mg, alkalinity, carbonates, sulfate, Cl, solids, $\text{NH}_4$-N, $\text{NO}_3$+$\text{NO}_2$, N-Kjeldahl, P, Cr, Fe, dissolved organic carbon. 
(f) Cosample provided to the Washington State Department of Health (September).

### 2.2 RIVERBANK SPRINGS

<table>
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<th>Location</th>
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<th>Analyses</th>
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<tr>
<td>100-B Spring 38-3</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, $^{99}$Tc, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, VOA</td>
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<td>100-B Spring 39-2</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, $^{99}$Tc, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, VOA, DOH$^{(b)}$</td>
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<td>100-K Spring 63-1</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, VOA</td>
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<td>100-K Spring 77-1</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, VOA</td>
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<td>100-N Spring 8-13</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, Gamma Scan, ICP-3, ICP-3 Filtered, Anions</td>
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<td>100-N Spring Near 199N-46</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, DOH$^{(b)}$</td>
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<tr>
<td>100-D Spring 110-1</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, Gamma Scan, ICP-3, ICP-3 Filtered, Anions</td>
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<td>100-D Spring 102-1</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, Gamma Scan, ICP-3, ICP-3 Filtered, Anions</td>
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<td>100-H Spring 152-2</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, $^{99}$Tc, U, Gamma Scan, ICP-3, ICP-3 Filtered, Anions</td>
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<td>100-H Spring 145-1</td>
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<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, $^{99}$Tc, U, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, DOH$^{(b)}$</td>
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<td>100-F Spring 207-1</td>
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<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, U, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, VOA</td>
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<td>Hanford Spring 28-2</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, $^{3}$H, $^{99}$Tc, U, $^{129}$I, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, DOH$^{(b)}$</td>
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<td>Hanford Spr DR 28-1</td>
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<td>Alpha, Beta, $^{3}$H, $^{99}$Tc, U, $^{129}$I, Gamma Scan, ICP-3, ICP-3 Filtered, Anions</td>
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<td>300 Area Spring 42-2</td>
<td>Grab</td>
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<td>Alpha, Beta, $^{3}$H, $^{90}$Sr, U, $^{129}$I, Gamma Scan, ICP-3, ICP-3 Filtered, Anions, VOA, DOH$^{(b)}$</td>
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</table>

(a) Refer to Figure 2.1, 2001 Surface Water and Drinking Water Sampling Locations. 
(b) Cosample provided to the Washington State Department of Health.
2.3 ONSITE PONDS

<table>
<thead>
<tr>
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<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses</th>
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<tbody>
<tr>
<td>West Lake</td>
<td>Grab</td>
<td>Q</td>
<td>Alpha, Beta, $^3$H, $^{99}$Tc, U, Gamma Scan</td>
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<tr>
<td>FFTF Pond</td>
<td>Grab</td>
<td>Q</td>
<td>Alpha, Beta, $^3$H, Gamma Scan</td>
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</tbody>
</table>

(a) Refer to Figure 2.1, 2001 Surface Water and Drinking Water Sampling Locations.

2.4 OFFSITE IRRIGATION WATER

<table>
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<tr>
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<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses</th>
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<tbody>
<tr>
<td>Riverview Canal</td>
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<td>3 (May-Sept)</td>
<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr, U, Gamma Scan, DOH$^{(b)}$</td>
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<td>Horn Rapids Area</td>
<td>Grab</td>
<td>3 (May-Sept)</td>
<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr, U, Gamma Scan, DOH$^{(b)}$</td>
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(a) Refer to Figure 2.1, 2001 Surface Water and Drinking Water Sampling Locations.
(b) One cosample provided to the Washington State Department of Health.

2.5 ONSITE DRINKING WATER

<table>
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<td>100 B Area - River</td>
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<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr</td>
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<td>100 D Area</td>
<td>Grab</td>
<td>Q</td>
<td>Alpha, Beta, $^3$H, $^{90}$Sr</td>
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<tr>
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<td>Grab</td>
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<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr, DOH$^{(b)}$</td>
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<td>Grab</td>
<td>Q</td>
<td>Alpha, Beta, $^3$H, $^{90}$Sr, DOH$^{(b)}$</td>
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</tbody>
</table>

(a) Refer to Figure 2.1, 2001 Surface Water and Drinking Water Sampling Locations.
(b) During 2nd quarter, cosample provided to the Washington State Department of Health.
Figure 2.1. 2001 Surface Water and Drinking Water Sampling Locations
3.0 BIOTA

3.1 FOODSTUFFS AND FARM PRODUCTS

3.1.1 Whole Milk

<table>
<thead>
<tr>
<th>Location(a)</th>
<th>Frequency</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Wahluke Area(b)</td>
<td>Q</td>
<td>Lo $^3$H, $^{90}$Sr, Gamma Scan $^{129}$I</td>
</tr>
<tr>
<td>Sagemoor Composite(b)</td>
<td>Q</td>
<td>Lo $^3$H, $^{90}$Sr, Gamma Scan $^{129}$I</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Q</td>
<td>Lo $^3$H, $^{90}$Sr, Gamma Scan $^{129}$I</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 3.1, 2001 Food and Farm Product Sampling Locations.
(b) Sample composited from multiple dairies in each area.

3.1.2 Leafy Vegetables

<table>
<thead>
<tr>
<th>Location(a)(b)</th>
<th>Frequency(c)</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverview Area</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan, FDA(e), DOH(e)</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan, FDA(d)</td>
</tr>
<tr>
<td>Sagemoor Area</td>
<td>BE (2001)</td>
<td>$^{90}$Sr, Gamma Scan, DOH(e)</td>
</tr>
<tr>
<td>East Wahluke Area</td>
<td>BE (2002)</td>
<td>$^{90}$Sr, Gamma Scan, DOH(e)</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 3.1, 2001 Food and Farm Product Sampling Locations.
(b) Two samples collected within each area, one sample analyzed and one archived.
(c) Sample are collected in 2001 according to their specified frequency unless otherwise noted.
(d) Cosamples sent to U.S. Food and Drug Administration.
(e) Cosample provided to the Washington State Department of Health.

3.1.3 Vegetables

<table>
<thead>
<tr>
<th>Location(a)(b)</th>
<th>Sample Type</th>
<th>Frequency(c)</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverview Area</td>
<td>Potatoes</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Tomatoes</td>
<td>A</td>
<td>$^{90}$ Sr, $^3$H, Gamma Scan, DOH(d)</td>
</tr>
<tr>
<td>East Wahluke Area</td>
<td>Potatoes</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan, FDA(e)</td>
</tr>
<tr>
<td>Harrah/Wapato Area</td>
<td>Tomatoes</td>
<td>A</td>
<td>$^{90}$Sr, $^3$H, Gamma Scan, DOH(d)</td>
</tr>
<tr>
<td>Horn Rapids Area</td>
<td>Potatoes</td>
<td>TE (2002)</td>
<td>$^{90}$Sr, Gamma Scan, FDA(e)</td>
</tr>
<tr>
<td>Sagemoor Area</td>
<td>Tomatoes</td>
<td>TE (2003)</td>
<td>$^{90}$Sr, Gamma Scan, DOH(d), FDA(e)</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 3.1, 2001 Food and Farm Product Sampling Locations.
(b) Two samples collected within each area, one sample analyzed and one archived.
(c) Samples are collected in 2001 according to their specified frequency unless otherwise noted.
(d) Cosample provided to the Washington State Department of Health.
(e) Cosamples sent to U.S. Food and Drug Administration.
(f) Samples provided to PNNL by Washington State Department of Health.
### 3.1.4 Fruit

<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagemoor Area</td>
<td>Concord Grapes</td>
<td>TE (2001)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan, DOH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE (2002)</td>
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<td></td>
<td></td>
<td>TE (2003)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cherries</td>
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<tr>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Apples</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Concord Grapes</td>
<td>TE (2001)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan, DOH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE (2002)</td>
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<td></td>
<td>TE (2003)</td>
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</tr>
<tr>
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<td>Cherries</td>
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<td>Apples</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Riverview Area</td>
<td>Concord Grapes</td>
<td>TE (2001)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan, DOH, FDA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE (2002)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE (2003)</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Cherries</td>
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</tr>
<tr>
<td></td>
<td>Apples</td>
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</tr>
<tr>
<td></td>
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<tr>
<td>Cold Creek Area</td>
<td>Concord Grapes</td>
<td>TE (2001)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan, DOH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE (2002)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE (2003)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cherries</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Apples</td>
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<tr>
<td>Ringold Area</td>
<td>Cherries</td>
<td>TE (2002)</td>
<td>June</td>
<td>$^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td>East Wahluke Area</td>
<td>Cherries</td>
<td>TE (2002)</td>
<td>June</td>
<td>$^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td>Mattawa Area</td>
<td>Apples</td>
<td>TE (2003)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan, DOH</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 3.1, 2001 Food and Farm Product Sampling Locations.
(b) Two samples collected within each area, one sample analyzed and one archived.
(c) Samples are collected in 2001 according to their specified frequency unless otherwise noted.
(d) Concord grapes preferred; table grapes acceptable if concord grapes are unavailable.
(e) Cosample provided to the Washington State Department of Health.
(f) Cosamples sent to U.S. Food and Drug Administration.

### 3.1.5 Wine

<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia Basin</td>
<td>White</td>
<td>A</td>
<td>December</td>
<td>$^{3}$H, Gamma Scan, DOH</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>A</td>
<td>December</td>
<td>$^{3}$H, Gamma Scan, DOH</td>
</tr>
<tr>
<td>Yakima Valley</td>
<td>White</td>
<td>A</td>
<td>December</td>
<td>$^{3}$H, Gamma Scan, DOH</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>A</td>
<td>December</td>
<td>$^{3}$H, Gamma Scan, DOH</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 3.1, 2001 Food and Farm Product Sampling Locations.
(b) Two samples of each type collected within each area.
(c) Cosample provided to the Washington State Department of Health.
### 3.1.6 Alfalfa

<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagemoor Area</td>
<td>Alfalfa</td>
<td>BE (2001)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td>Riverview Area</td>
<td>Alfalfa</td>
<td>BE (2001)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan, FDA, DOH</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Alfalfa</td>
<td>BE (2001)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan, FDA</td>
</tr>
<tr>
<td>Horn Rapids Area</td>
<td>Alfalfa</td>
<td>BE (2001)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan, DOH</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 3.1, 2001 Food and Farm Product Sampling Locations.
(b) Two samples collected within each area, one sample analyzed and one archived.
(c) Cosamples sent to U.S. Food and Drug Administration.
(d) Cosample provided to the Washington State Department of Health.
Figure 3.1. 2001 Food and Farm Product Sampling Locations
### 3.2 WILDLIFE

#### 3.2.1 Aquatic Biota

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/ Sample</th>
<th>Number of Samples</th>
<th>Frequency(b)</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 N Area to 100 D Area(c)</td>
<td>Whitefish Fillet</td>
<td>5</td>
<td>BE (2001)</td>
<td>November</td>
<td>Gamma Scan, DOH(d)</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>BE (2001)</td>
<td>November</td>
<td>$^{90}\text{Sr}$, DOH(d)</td>
</tr>
<tr>
<td></td>
<td>Whitefish Fillet</td>
<td>5</td>
<td>BE (2002)</td>
<td>June</td>
<td>Gamma Scan, DOH(d)</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>BE (2002)</td>
<td>June</td>
<td>$^{90}\text{Sr}$, DOH(d)</td>
</tr>
<tr>
<td>Background</td>
<td>Whitefish Fillet</td>
<td>5</td>
<td>TE (2001)</td>
<td>Jan &amp; Dec</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>TE (2001)</td>
<td>Jan &amp; Dec</td>
<td>$^{90}\text{Sr}$</td>
</tr>
<tr>
<td>100 F Slough</td>
<td>Bass Fillet</td>
<td>5</td>
<td>TE (2002)</td>
<td>May-June</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>TE (2002)</td>
<td>May-June</td>
<td>$^{90}\text{Sr}$</td>
</tr>
<tr>
<td>Hanford Slough</td>
<td>Bass Fillet</td>
<td>5</td>
<td>TE (2002)</td>
<td>May-June</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>TE (2002)</td>
<td>May-June</td>
<td>$^{90}\text{Sr}$</td>
</tr>
<tr>
<td>300 Area(c)</td>
<td>Carp Fillet</td>
<td>5</td>
<td>BE (2002)</td>
<td>June</td>
<td>Gamma Scan, DOH(d)</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>BE (2002)</td>
<td>June</td>
<td>$^{90}\text{Sr}$, DOH(d)</td>
</tr>
<tr>
<td>Desert Aire</td>
<td>Bass Fillet</td>
<td>5</td>
<td>TE (2002)</td>
<td>June</td>
<td>Gamma Scan, DOH(d)</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>TE (2002)</td>
<td>June</td>
<td>$^{90}\text{Sr}$, DOH(d)</td>
</tr>
<tr>
<td>Vantage</td>
<td>Carp Fillet</td>
<td>5</td>
<td>BE (2002)</td>
<td>June</td>
<td>Gamma Scan, DOH(d)</td>
</tr>
<tr>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>BE (2002)</td>
<td>June</td>
<td>$^{90}\text{Sr}$, DOH(d)</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 3.2, 2001 Wildlife Sampling Locations.
(b) Samples are collected in 2001 according to their specified frequency unless otherwise noted.
(c) If available, PNNL will collect one Squawfish sample and provide to the Washington State Department of Health.
(d) One sample provided to the Washington State Department of Health.
### 3.2.2 Geese

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/Sample</th>
<th>Number of Samples</th>
<th>Frequency&lt;sup&gt;(b)&lt;/sup&gt;</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Areas</td>
<td>Canada Goose</td>
<td>Muscle 5</td>
<td>BE (2001)</td>
<td>August</td>
<td>Gamma Scan, DOH&lt;sup&gt;(c)&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone 5</td>
<td>BE (2001)</td>
<td>August</td>
<td>$^{90}\text{Sr}$, DOH&lt;sup&gt;(c)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Hanford Townsite</td>
<td>Canada Goose</td>
<td>Muscle 5</td>
<td>BE (2001)</td>
<td>August</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone 5</td>
<td>BE (2001)</td>
<td>August</td>
<td>$^{90}\text{Sr}$</td>
</tr>
<tr>
<td>Vantage</td>
<td>Canada Goose</td>
<td>Muscle 5</td>
<td>BE (2001)</td>
<td>August</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone 5</td>
<td>BE (2001)</td>
<td>August</td>
<td>$^{90}\text{Sr}$</td>
</tr>
</tbody>
</table>

<sup>(a)</sup> Refer to Figure 3.2, 2001 Wildlife Sampling Locations.  
<sup>(b)</sup> Samples are collected in 2001 according to their specified frequency unless otherwise noted.  
<sup>(c)</sup> One sample provided to the Washington State Department of Health.

### 3.2.3 Game Birds

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/Sample&lt;sup&gt;(a)&lt;/sup&gt;</th>
<th>Number of Samples</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 D Area to</td>
<td>Pheasant</td>
<td>Muscle 4</td>
<td>BE (2002)</td>
<td>September</td>
<td>Gamma Scan, DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
</tr>
<tr>
<td>100 H Area</td>
<td></td>
<td>Bone 4</td>
<td>BE (2002)</td>
<td>September</td>
<td>$^{90}\text{Sr}$, DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
</tr>
<tr>
<td>100 H Area to</td>
<td>Pheasant</td>
<td>Muscle 6</td>
<td>BE (2002)</td>
<td>September</td>
<td>Gamma Scan, DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
</tr>
<tr>
<td>100 F Area</td>
<td></td>
<td>Bone 6</td>
<td>BE (2002)</td>
<td>September</td>
<td>$^{90}\text{Sr}$, DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Background</td>
<td>Pheasant</td>
<td>Muscle 5</td>
<td>BE (2002)</td>
<td>September</td>
<td>Gamma Scan, DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone 5</td>
<td>BE (2002)</td>
<td>September</td>
<td>$^{90}\text{Sr}$, DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>(a)</sup> Pheasant preferred; chukar or quail acceptable if pheasant is unavailable.  
<sup>(b)</sup> One sample provided to the Washington State Department of Health.
### 3.2.4 Rabbits

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/Sample</th>
<th>Number of Samples</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 N Area</td>
<td>Cottontail or Jack Rabbit</td>
<td>Muscle</td>
<td>4</td>
<td>BE (2001)</td>
<td>April</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>4</td>
<td>BE (2001)</td>
<td>Gamma Scan, DOH(^{(c)})</td>
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<tr>
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<td></td>
<td>90(^{Sr}), DOH(^{(c)})</td>
</tr>
<tr>
<td>200 E Area</td>
<td>Jack Rabbit</td>
<td>Muscle</td>
<td>4</td>
<td>BE (2001)</td>
<td>April</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>4</td>
<td>BE (2001)</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90(^{Sr})</td>
</tr>
<tr>
<td>200 West</td>
<td>Jack Rabbit</td>
<td>Muscle</td>
<td>4</td>
<td>BE (2001)</td>
<td>April</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>4</td>
<td>BE (2001)</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90(^{Sr})</td>
</tr>
<tr>
<td>Background</td>
<td>Cottontail or Jack Rabbit</td>
<td>Muscle</td>
<td>5</td>
<td>TE (2001)</td>
<td>April</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>5</td>
<td>TE (2001)</td>
<td>Gamma Scan</td>
</tr>
</tbody>
</table>

\(^{(a)}\) Refer to Figure 3.2, 2001 Wildlife Sampling Locations.  
\(^{(b)}\) Samples are collected in 2001 according to their specified frequency unless otherwise noted.  
\(^{(c)}\) One sample provided to the Washington State Department of Health.

### 3.2.5 Deer

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/Sample</th>
<th>Number of Samples</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 N Area</td>
<td>Mule</td>
<td>Muscle</td>
<td>2</td>
<td>BE (2002)</td>
<td>December</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>2</td>
<td>BE (2002)</td>
<td>December</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Gamma Scan, DOH(^{(a)})</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90(^{Sr}), DOH(^{(a)})</td>
</tr>
<tr>
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<td>Mule</td>
<td>Muscle</td>
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<td>BE (2002)</td>
<td>December</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>2</td>
<td>BE (2002)</td>
<td>December</td>
</tr>
<tr>
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<td>90(^{Sr}), DOH(^{(a)})</td>
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<td>Onsite Location</td>
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<td>Bone</td>
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<td>BE (2002)</td>
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<td>90(^{Sr})</td>
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<td>Background</td>
<td>Mule</td>
<td>Muscle</td>
<td>2</td>
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<td>Bone</td>
<td>2</td>
<td>BE (2002)</td>
<td>October</td>
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\(^{(a)}\) One sample provided to the Washington State Department of Health.
Figure 3.2. 2001 Wildlife Sampling Locations
## 4.0 SOIL AND VEGETATION

### 4.1 SOIL

<table>
<thead>
<tr>
<th>Location</th>
<th>Location Number</th>
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<th>Collection Period</th>
<th>Analyses</th>
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<td>100 K Area</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>E of 100 N Area</td>
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<td>3 to 5 yrs</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, DOH(d)</td>
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<td>100N Shore Above HGP</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>100 Area Fire Stat</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>June-Sept</td>
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<td>Yakima Barricade</td>
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<tr>
<td>400 E</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
</tr>
<tr>
<td>SE Side of FFTF</td>
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<td>3 to 5 yrs</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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<td>North of 300 Area</td>
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</tr>
<tr>
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<td>3 to 5 yrs</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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<tr>
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<tr>
<td>Wahluke Slope</td>
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<td>June-Sept</td>
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<td>Berg Ranch</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
</tr>
<tr>
<td>Ringold Area</td>
<td>28</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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<tr>
<td>W End of Fir Road</td>
<td>29</td>
<td>3 to 5 yrs</td>
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<td>Taylor Flats No. 2</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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<td>Sagemoor Farm</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
</tr>
<tr>
<td>Byers Landing</td>
<td>32</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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<tr>
<td>Riverview-Harris</td>
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<td>3 to 5 yrs</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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<td>Benton City</td>
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<td>Sunnyside</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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<td>McNary Dam</td>
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<td>Walla Walla</td>
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<td>Washutucna</td>
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<tr>
<td>Toppenish</td>
<td>39</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{241}$Am, DOH(d)</td>
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</tbody>
</table>

(a) Refer to Figure 4.1, 2001 Soil and Vegetation Sampling Locations.
(b) Samples are collected once every 3 to 5 years and will be collected in 2001.
(c) Samples will be collected and archived but may be submitted for analyses at a later date.
(d) Cosample provided to the Washington State Department of Health.
## 4.2 VEGETATION

<table>
<thead>
<tr>
<th>Location(a)</th>
<th>Location Number</th>
<th>Frequency(b)</th>
<th>Collection Period</th>
<th>Analyses</th>
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<tbody>
<tr>
<td>100 K Area</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>NE of 100 N Area</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>E of 100 N Area</td>
<td>3</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, DOH(c)</td>
</tr>
<tr>
<td>100N Spring Shoreline</td>
<td>5</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>E of 200 W Gate</td>
<td>13</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>300 Area Shoreline</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, DOH(c)</td>
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<tr>
<td>Hanford Townsite</td>
<td>21</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>Hanford Townsite HRM28</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, $^{99}$Tc, DOH(c)</td>
</tr>
<tr>
<td>Ringold Area</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>Sagenmoor Farm</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>Byers Landing</td>
<td>32</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>Sunnyside</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>Toppenish</td>
<td>39</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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</tbody>
</table>

(a) Refer to Figure 4.1, 2001 Soil and Vegetation Sampling Locations.
(b) Samples are collected once every 3 to 5 years and will be collected in 2001.
(c) Cosample provided to the Washington State Department of Health.
Figure 4.1. 2001 Soil and Vegetation Sampling Locations
## 5.0 SEDIMENT

<table>
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<tr>
<th>Location(a)</th>
<th>Frequency</th>
<th>Analyses</th>
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<td>McNary Dam</td>
<td>A</td>
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<td>McNary-OR. Side Near Dam</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-u, SEM/AVS, TOC, DOH(b)</td>
</tr>
<tr>
<td>McNary-Wash. Side Near Dam</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-u, SEM/AVS, TOC, DOH(b)</td>
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<tr>
<td>Priest Rapids Dam (PRD)</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-u, SEM/AVS, TOC, DOH(b)</td>
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<tr>
<td>PRD-Grant Side Near Dam</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-u, SEM/AVS, TOC, DOH(b)</td>
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<tr>
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<td>100 F Slough</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-u, SEM/AVS, TOC</td>
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(a) Refer to Figure 5.1, 2001 Sediment Sampling Locations. UR and DR referenced to upriver and downriver.

(b) Cosample provided to the Washington State Department of Health.
Figure 5.1. 2001 Sediment Sampling Locations
6.0 EXTERNAL RADIATION

6.1 THERMOLUMINESCENT DOSIMETERS (TLDS)

6.1.1 Terrestrial Locations

<table>
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<th>Location Number</th>
<th>Frequency</th>
<th>Measurement</th>
<th>Instrument</th>
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<tr>
<td>100 K Area (b)</td>
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<td>Ambient Dose</td>
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<td>100 D Area (b)</td>
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<td>Q</td>
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<td>Hanford Townsite (b)</td>
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<td>Ambient Dose</td>
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</tr>
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<td>N of 200 E (b)</td>
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<td>Q</td>
<td>Ambient Dose, DOH (c)</td>
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</tr>
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<td>B Pond (b)</td>
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<td>Q</td>
<td>Ambient Dose</td>
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<td>E of 200 E (b)</td>
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<td>Q</td>
<td>Ambient Dose, DOH (c)</td>
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</tr>
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<td>200 ESE (b)</td>
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<td>Q</td>
<td>Ambient Dose</td>
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<td>S of 200 E (b)</td>
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<td>Q</td>
<td>Ambient Dose</td>
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<td>Ambient Dose</td>
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<td>SW of B/C Cribs (b)</td>
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<td>Ambient Dose</td>
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<tr>
<td>200 W SE (b)</td>
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<td>Ambient Dose</td>
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<td>Ambient Dose</td>
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<td>300 Trench (b)</td>
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<td>Q</td>
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</tr>
<tr>
<td>400 E (b)</td>
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<td>Ambient Dose</td>
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<tr>
<td>400 W (b)</td>
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<td>400 S (b)</td>
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(a) Refer to Figure 6.1, 2001 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site.
(b) Collocated with air sampling station.
(c) Washington State Department of Health TLD also at this location.
(d) Refer to Figure 6.2, 2001 Thermoluminescent Dosimeter (TLD) Locations for Perimeter, Community, and Distant Sites.
(e) Community-operated environmental surveillance station.
Figure 6.1. 2001 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site
Figure 6.2. 2001 Thermoluminescent Dosimeter (TLD) Locations for Perimeter, Community, and Distant Sites
### 6.1.2 Columbia River Shoreline Locations

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<td>Below 100N Outfall</td>
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<tr>
<td>Above Tip 100N Berm</td>
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<tr>
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<td>Ambient Dose</td>
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<tr>
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<td>Q</td>
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\(^{(a)}\) Refer to Figure 6.3, 2001 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

\(^{(b)}\) Collocated with air sampling station.

### 6.2 COLUMBIA RIVER SHORELINE RADIATION SURVEYS

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<td>Below 100N Outfall</td>
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<td>Above Tip 100N Berm</td>
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<td>100 N Trench Spring</td>
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<td>Exposure, Surface contamination</td>
<td>BICRON, GM</td>
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\(^{(a)}\) Refer to Figure 6.3, 2001 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.
Figure 6.3. 2001 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River
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