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**Hanford Site Near-Facility Environmental
Monitoring Data Report for Calendar Year 1999**

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A Subsidiary of GTS Duratek

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SUMMARY

This document summarizes the results of near-facility environmental monitoring for 1999 in the 100, 200/600, and 300/400 Areas of the Hanford Site completed by Waste Management Federal Services, Inc., a subsidiary of GTS Duratek. Surveillance activities included sampling and analysis of ambient air, surface water, groundwater, soil, sediment, and biota. Also, external radiation measurements and radiological surveys were taken at waste disposal sites, radiologically controlled areas, and roads. These activities were conducted to assess and control the effects of nuclear facilities and waste sites on the local environment. In addition, diffuse sources were monitored to determine compliance with federal, state, and/or local regulations. In general, though effects from nuclear facilities can still be observed on the Hanford Site and radiation levels are slightly elevated when compared to offsite locations, the differences are less than in previous years.

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1.0 NEAR-FACILITY ENVIRONMENTAL MONITORING AT HANFORD

Near-facility environmental monitoring is defined as monitoring near facilities that have potential to discharge or have discharged, stored, or disposed of radioactive or hazardous materials. Monitoring locations are associated mostly with active nuclear facilities, such as Tank Farms and K-Basins, inactive nuclear facilities such as the Plutonium-Uranium Extraction Plant (PUREX), Fast Flux Test Facility (FFTF), and N Reactor, environmental restoration activities, and waste storage or disposal facilities, such as burial grounds, ponds, cribs, trenches, and ditches.

Much of the monitoring consists of collecting and analyzing environmental samples and methodically surveying areas near facilities. The program is also designed to evaluate acquired analytical data, determine the effectiveness of facility effluent monitoring and controls, assess the adequacy of containment at waste disposal units, and detect and monitor unusual conditions. The monitoring implements applicable portions of U.S. Department of Energy (DOE) Orders 435.1 (DOE 1999), 5400.1 (DOE 1988), and 5400.5 (DOE 1990); *Washington Administrative Code* (WAC) 246-247; Title 40, *Code of Federal Regulations* (CFR) Part 61, Subpart H; and 10 CFR 835.

Several types of environmental media are sampled near facilities to monitor waste management and restoration activities, and evaluate the effectiveness of effluent treatment and control practices. Routine sampling and monitoring includes ambient air, water from surface water disposal units, external radiation, soil, and vegetation. Some of the parameters typically monitored are pH, radionuclide concentrations, and radiation fields. Sampling methods are discussed in detail in Waste Management Technical Services (WMTS) *Operational Environmental Monitoring*, WMTS-OEM-001.

Samples are collected from known or expected effluent pathways. These pathways are generally downwind of potential or actual airborne releases and down gradient of liquid discharges. Table 1-1 shows the type, quantity, and location of routine near-facility monitoring samples collected in 1999.

Waste disposal sites and the surrounding terrain are surveyed to detect and characterize any radioactive surface contamination. Routine radiological survey locations include cribs, trenches, retention basin perimeters, pond perimeters, ditch banks, perimeters of active solid waste disposal sites, unplanned release sites, tank farm perimeters, stabilized waste disposal sites, roads, and firebreaks in and around the site operational areas.

Nonroutine, investigative samples are also collected as part of the near-facility environmental monitoring program to confirm the absence or presence of radioactive and/or hazardous contaminants.

Discussion of the Noxious Weed Control program can be found in PNNL-13230, Section 7.5, "Other Hanford Site Environmental Programs."

Table 1-1 Near-Facility Routine Environmental Monitoring Samples and Locations, 1999

Sample Type	Number of Sample Locations	Operational Area									
		100-B/C	100-D/DR	100-K	100-F	100-H	100-N	ERDF ^(a)	200/600	300/400	TWRS ^(b)
Air	85	5	11	8	2	4	4	3	42 ^(c)	6	0
Water	10	0	0	0	0	0	10	0	0	0	0
External Radiation	143	5	5	11	0	3	22	3	63	21	10
Soil	83	2	2	0	0	2	5	1	58	13	0
Vegetation	70	0	0	0	0	0	10	0	47	13	0

a – Environmental Restoration Disposal Facility.

b – Tank Waste Remediation System.

c – Includes one station at the Wye Barricade, one at Gable Mountain Pond, 19 in the 200-East Area, and 21 in the 200-West Area.

This Appendix volume contains brief discussions, specific sampling location information and complete analytical data results for the various near-facility environmental monitoring efforts for 1999. Detailed discussions and summarized analytical results are provided in Section 3.2, "Near-Facility Environmental Monitoring," of the *Hanford Site Environmental Report for Calendar Year 1999* (PNNL-13230).

AIR MONITORING

Near-facility air sampling monitors the effectiveness of waste management and environmental remediation controls and effluent treatment systems in reducing effluents and emissions; these air samplers also monitor diffuse source emissions.

Ambient air monitoring is conducted to determine baseline concentrations of radionuclides in the operations areas, to assess the impact of operations on the local environment, and to monitor diffuse and fugitive emissions from sources located within the operations area. These measurements also provide an indication of the Project Hanford Management Contract- and Environmental Restoration Contractor-managed facilities' performance and are used to demonstrate compliance with environmental protection criteria.

For 1999, radioactivity in air was sampled by a network of continuously operating samplers at 85 locations. Location-specific maps and monitoring results are provided in Section 2.0.

GROUNDWATER MONITORING

The Near Facility Environmental monitoring program did not conduct groundwater monitoring in 1999.

SOIL AND VEGETATION SAMPLING

Soil and vegetation samples were collected on or adjacent to waste disposal units, and from locations downwind and near or within the boundaries of the operating facilities. Samples were collected to detect potential migration and deposition of facility effluents. Special samples were also taken where physical or biological transport problems were identified. Migration of radionuclides can occur as the result of resuspension from radioactively contaminated surface areas, absorption by the roots of vegetation growing on or near underground and surface water disposal units, or intrusion by animals.

Radiological analyses of soil and vegetation samples included strontium-90, plutonium-239,240, isotopic uranium, and gamma-emitting radionuclides. Location-specific maps and the analytical results are presented in Section 4.0.

EXTERNAL RADIATION

External radiation fields were monitored near facilities and waste handling, storage, and disposal sites to measure, assess, and control the impacts of operations. Thermoluminescent dosimeters (TLDs) are used at numerous fixed locations to gather dose rate information over extended periods of time. TLD results can be used individually or averaged to determine dose rates in a given area for a particular sampling period.

These environmental dosimeters measure dose rates from all types of external radiation sources, including cosmic radiation, naturally occurring radioactivity in air and soil, and fallout from nuclear weapons testing, as well as any contribution from Hanford Site activities. These outside radiation sources can cause an estimated 20% deviation in TLD results. The results are reported in units of millirems per year (mrem/yr). Individual TLD results and their locations are provided in Section 5.0.

SURFACE-WATER DISPOSAL UNITS AND RIVERBANK SPRINGS MONITORING

Two surface water disposal units in the 200 Areas (the 200-East Powerhouse Ditch and the 216-8-3C Expansion Pond), historically sampled in the past, were not utilized 1999 and, as a result, no sampling was conducted at these locations.

The springs along the 100-N Area Columbia River shoreline (N-Springs) were monitored in 1999 to assess the effectiveness of effluent and contamination controls. Ten water samples were taken at the N-Springs. The radiological analyses were performed onsite at the Waste Sampling and Characterization Facility, and the analyses included tritium, strontium-90, and gamma-emitting radionuclides. A location-specific map and the analytical results of the sampling are presented in Section 6.0.

RADIOLOGICAL SURVEYS

In 1999, the Hanford Site had approximately 3,637 ha (8,988 acres) of posted outdoor surface contamination, and 591 ha (1,460 acres) of posted underground radioactive material, not including the production facilities (e.g., PUREX, T-Plant, etc.). The total area of surface contamination was approximately six times larger than the area of underground radioactive material.

Beginning in 1996, a global positioning system was utilized to measure the surface areas more accurately than in previous years. This collected information was entered into the Hanford Geographical Information System (HGIS), a computer database maintained by the Environmental Restoration Contractor. Survey location maps are provided in Section 7.0.

INVESTIGATIVE SAMPLING

Investigative sampling was conducted in the operations areas to confirm the absence or presence of radioactive and/or hazardous contaminants. Investigative sampling took place near facilities such as storage and disposal sites for at least one of the following reasons:

- To follow up radiological surface surveys that had indicated radioactive contamination was present.
- To conduct preoperational surveys to characterize the radiological/hazardous conditions at a site prior to facility construction, operation or ultimate remediation.
- To determine if biotic intrusion (e.g., animal burrows or deep-rooted vegetation) has created a potential for contaminants to spread.
- To determine the integrity of waste containment systems.

Generally, the predominant radionuclides detected during these efforts were activation and fission products in the 100 Areas, fission products in the 200 Areas, and uranium in the 300 Area. Hazardous chemicals generally have not been identified above background levels in preoperational environmental monitoring samples and no special characterization samples were collected in 1999. Complete results, including counting errors, and field instrument and dose rate readings, where appropriate, are provided in Section 8.0.

NOXIOUS WEED CONTROL PROGRAM

The Noxious Weed Control Program on the Hanford Site has been developed in response to Federal, State, and local laws requiring eradication or control of noxious weeds. A noxious weed is defined as "any plant which when established is highly destructive, competitive, or difficult to control by cultural or chemical practices." Typically, noxious weeds are non-native

(alien) species that invade and displace native species, reduce habitat for fish and wildlife, and contribute to the extinction of sensitive species.

Nine plant species are on a high priority list for control at Hanford. These species are Yellow Starthistle (*Centaurea solstitialis*), Rush Skeletonweed (*Chondrilla juncea*), Babysbreath (*Gypsophila paniculata*), Dalmatian Toadflax (*Linaria genistifolia* ssp. *Dalmatica*), Spotted Knapweed (*Centaurea maculosa*), Diffuse Knapweed (*Centaurea diffusa*), Russian Knapweed (*Acroptilon repens*), Saltcedar (*Tamarix* spp.), and Purple Loosestrife (*Lythrum salicaria*).

Maps generally depicting the spatial distribution of these species across the Hanford Site can be found in Section 9.0.

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2.0 AMBIENT AIR MONITORING

Air samplers are located primarily at or near (within approximately 500 m [1,500 ft]) sites and/or facilities having the potential for, or history of, environmental releases, with emphasis on potential source terms as well as prevailing wind direction. Meteorological conditions are monitored continuously by the Pacific Northwest National Laboratory meteorology stations, which are strategically positioned in and around the Hanford Site.

For 1999, a network of continuously operating samplers at 85 locations (Table 2-1) sampled radioactivity in air. Location-specific maps are illustrated in Figures 2-1 through 2-12. Historical air sampling results for the 100-K, 100-N and 200 Areas are represented in graph form in Figures 2-13 through 2-22. The 1999 composited, sampler-specific monitoring results are provided in Table 2-2. Additional discussion of the 1999 results can be found in Section 3.2 of the *Hanford Site Environmental Report for Calendar Year 1999* (PNNL-13230).

Several Pacific Northwest National Laboratory ambient air monitoring stations were utilized to provide additional information for five Environmental Restoration Contractor remediation projects. The projects and the associated Pacific Northwest National Laboratory stations are the 100-B/C, 100-D and 100-H remedial action projects (Pacific Northwest National Laboratory station #28, "Yakima Barricade"), the Environmental Restoration Disposal Facility project (Pacific Northwest National Laboratory station #11, "200 West SE") and the 300-FF-1 Remedial Action project (Pacific Northwest National Laboratory station #14, "300 Trench," and Pacific Northwest National Laboratory station #15, "300 NE"). The 1999 air monitoring data results for these locations can be found in Table 2-3.

Air monitoring within the 300 and 400 Areas was performed by the Pacific Northwest National Laboratory as part of the Site Surface Environmental Surveillance Project. Data acquired are reviewed by Near-Facility Monitoring personnel. A more detailed discussion of these results is provided in PNNL-13230, Section 4.1, "Air Surveillance."

Near-facility environmental air samplers operate at a flow rate of 0.056 m³/min (2 ft³/min), drawing a sample through a 47-mm (2-in.), open-faced filter about 2 m (6 ft) aboveground. All sample filters are exchanged biweekly, held one week (to allow for decay of short-lived natural radioactivity), and then sent to the analytical laboratory for initial analysis of total alpha and total beta activity. These initial analyses serve as an indicator of potential environmental problems.

The filters were stored until the end of either a three- or six-month sample period, then segregated and composited by sample location for specific radionuclide analysis as shown in Table 2-1. Segregating and compositing air filters by site provides a larger sample size and, thus, a more sensitive and accurate measurement of the concentration of airborne radionuclides.

To help assess the impact of Site operations, monitoring results are compared to DOE derived concentration guides and to the results obtained from the distant communities of Yakima and Sunnyside as reported by the Pacific Northwest National Laboratory Site Environmental

Surveillance Program. The data acquired from distant station N-981 is used to compare to the data from samples collected in the operating areas and to data from samples collected by Pacific Northwest National Laboratory, the Washington State Department of Health, and the Washington Public Power Supply System. A collocated sampling site is used for comparability and precision.

Table 2-1 Near-Facility Air Sampling Locations and Analyses, 1999.

Site	Number of Samplers	EDP Code ^(a)	Analyses	
			Bi-weekly	Composite
100-B/C Remedial Action Project	5	N464, N465, N466, N496, N497 (PNNL #28)	Total α, β	GEA ^(b) , Sr-90, Pu-iso ^(c) , U-iso ^(d)
100-K Spent Nuclear Fuels	8	N401, N402, N403, N404, N476 N477, N478, N479	Total α, β	GEA, Sr-90, Pu-iso, U-iso, Pu-241, Am-241
100-N Surveillance and Maintenance/Transition	4	N102, N103, N105, N106	Total α, β	GEA, Sr-90, Pu-iso, U-iso
100-D Remedial Action Project	8	N467, N468, N469, N470, N512 N513, N514, N515	Total α, β	GEA, Sr-90, Pu-iso, U-iso
100-D/DR Stack Demolition Project	1	N511	Total α, β	GEA, Sr-90, Pu-iso, U-iso
100-DR Interim Safe Storage Project	2	N492, N493	Total α, β	GEA, Sr-90, Pu-iso, U-iso
100-H Remedial Action Project	4	N507, N508, N509, N510	Total α, β	GEA, Sr-90, Pu-iso, U-iso
100-F Interim Safe Storage Project	2	N494, N495	Total α, β	GEA, Sr-90, Pu-iso, U-iso
200 East Area	17	N019, N158, N498, N499, N957 N967, N968, N969, N970, N972 N973, N976, N977, N978, N984 N985, N999	Total α, β	GEA, Sr-90, Pu-iso, U-iso
Canister Storage Building (200 East Area)	2	N480, N481	Total α, β	GEA, Sr-90, Pu-iso, U-iso, Pu-241, Am-241
200 West Area	21	N155, N161, N165, N168, N200 N304, N433, N441, N442, N449, N456, N457, N956, N963, N964, N965, N966, N974, N975, N987, N994	Total α, β	GEA, Sr-90, Pu-iso, U-iso
600 Area (Wye Barricade)	1	N981	Total α, β	GEA, Sr-90, Pu-iso, U-iso
Environmental Restoration Disposal Facility (ERDF)	3	N482, N483, N484, (PNNL #11)	Total α, β	GEA, Sr-90, Pu-iso, U-iso
300-FF-1 Remedial Action Project	6	N130, N485, N486, N487, N488, N489, (PNNL #14, PNNL #15)	Total α, β	GEA, U-iso
Gable Mt. Pond Remedial Investigation Project	1	N516	Total α, β	GEA, Sr-90, Pu-iso, U-iso

a - EDP Code – sampler location code.

b - GEA – gamma energy analysis

c - Isotopic plutonium-238 and plutonium-239/240

d - Isotopic uranium-234, -235, -238

Figure 2-1 100-B/C Area Air Sampler Locations

Figure 2-2 100-K Area Air Sampler Locations

Figure 2-3 100-N Area Air Sampler Locations

Figure 2-4 100-D/DR Area Air Sampler Locations

WMNW/IECP/2-89/FIG-8

Figure 2-5 100-H Area Air Sampler Locations

Figure 2-6 100-F Area Air Sampler Locations

Figure 2-7 200 East Area Air Sampler Locations

WMNW/IECP/2-99/FIG-4

Figure 2-9 600 Area Air Sampler Location

Figure 2-10 Environmental Restoration Disposal Facility (ERDF) Air Sampler Locations

Figure 2-11 300 Area Air Sampler Locations

Figure 2-12 Gable Mt. Pond Air Sampler Location

Figure 2-13 Annual Average Strontium-90 Concentrations in Air, 100-K Area

Figure 2-14 Annual Average Cesium-137 Concentrations in Air, 100-K Area

Figure 2-15 Annual Average Plutonium-239/240 Concentrations in Air, 100-K Area

Figure 2-16 Annual Average Cobalt-60 Concentrations in Air, 100-N

Figure 2-17 Annual Average Strontium-90 Concentrations in Air, 100-N

Figure 2-18 Annual Average Cesium-137 Concentrations in Air, 100-N

Figure 2-19 Annual Average Plutonium-239/240 Concentrations in Air, 100-N Area

Figure 2-20 Annual Average Strontium-90 Concentrations in Air, 200 Areas

Figure 2-21 Annual Average Cesium-137 Concentrations in Air, 200 Areas

Figure 2-22 Annual Average Plutonium-239/240 Concentrations in Air, 200 Areas

Table 2-2 Near Facility Air Sampling Results, 1999

100-B/C Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)				
EDP Code	Composite Period	Isotope	Result ± Error	
N-464	12/29/98 - 1/28/99	⁶⁰ Co	-3.40E-05 ± 1000%	Sampling Completed: 1/28/99
		¹³⁴ Cs	-7.60E-05 ± 553%	
		¹³⁷ Cs	4.20E-04 ± 110%	
		¹⁵² Eu	-3.90E-04 ± 282%	
		¹⁵⁴ Eu	2.40E-04 ± 583%	
		¹⁵⁵ Eu	-1.20E-04 ± 917%	
		²³⁸ Pu	-1.00E-05 ± 650%	
		^{239,240} Pu	1.00E-05 ± 200%	
		¹⁰³ Ru	-3.60E-05 ± 1000%	
		¹⁰⁶ Ru	5.60E-03 ± 70%	
		¹²⁵ Sb	1.40E-04 ± 643%	
		¹¹³ Sn	6.20E-05 ± 774%	
		⁹⁰ Sr	3.00E-04 ± 130%	
		²³⁴ U	5.60E-05 ± 63%	
		²³⁵ U	3.30E-05 ± 76%	
		²³⁸ U	9.60E-05 ± 50%	
		⁶⁵ Zn	-1.00E-03 ± 110%	
EDP Code	Composite Period	Isotope	Result ± Error	
N-465	12/29/98 - 1/28/99	⁶⁰ Co	3.60E-05 ± 1000%	Sampling Completed: 1/28/99
		¹³⁴ Cs	2.00E-04 ± 190%	
		¹³⁷ Cs	-1.70E-04 ± 212%	
		¹⁵² Eu	-1.10E-05 ± 1000%	
		¹⁵⁴ Eu	-6.90E-05 ± 1000%	
		¹⁵⁵ Eu	1.60E-04 ± 450%	
		²³⁸ Pu	1.30E-05 ± 523%	
		^{239,240} Pu	4.30E-06 ± 349%	
		¹⁰³ Ru	1.70E-05 ± 1000%	
		¹⁰⁶ Ru	-1.40E-03 ± 207%	
		¹²⁵ Sb	3.40E-04 ± 229%	
		¹¹³ Sn	4.60E-05 ± 783%	
		⁹⁰ Sr	2.10E-03 ± 41%	
		²³⁴ U	4.30E-05 ± 70%	
		²³⁵ U	3.10E-05 ± 84%	
		²³⁸ U	2.50E-05 ± 80%	
		⁶⁵ Zn	-2.80E-04 ± 279%	
EDP Code	Composite Period	Isotope	Result ± Error	
N-466	12/29/98 - 5/24/99	⁶⁰ Co	1.40E-05 ± 571%	Sampling Completed: 5/24/99
		¹³⁴ Cs	1.40E-05 ± 593%	
		¹³⁷ Cs	3.50E-05 ± 231%	
		¹⁵² Eu	8.30E-05 ± 217%	
		¹⁵⁴ Eu	3.50E-04 ± 63%	
		¹⁵⁵ Eu	-2.50E-05 ± 800%	
		²³⁸ Pu	-2.00E-06 ± 750%	
		^{239,240} Pu	1.60E-05 ± 57%	
		¹⁰³ Ru	8.40E-05 ± 110%	
		¹⁰⁶ Ru	3.20E-04 ± 209%	
		¹²⁵ Sb	-6.50E-05 ± 262%	
		¹¹³ Sn	-7.90E-05 ± 100%	
		⁹⁰ Sr	Not Reported	
		²³⁴ U	2.10E-05 ± 47%	
		²³⁵ U	3.70E-06 ± 119%	
		²³⁸ U	8.50E-06 ± 64%	
		⁶⁵ Zn	-1.20E-05 ± 1000%	

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-B/C Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)				
EDP Code	Composite Period	Isotope	Result ± Error	
N-496	2/1/99 - 5/24/99	⁶⁰ Co	3.00E-05 ± 433%	Sampling Completed: 5/24/99
		¹³⁴ Cs	-8.70E-05 ± 138%	
		¹³⁷ Cs	4.20E-05 ± 286%	
		¹⁵² Eu	-1.30E-04 ± 262%	
		¹⁵⁴ Eu	3.40E-04 ± 121%	
		¹⁵⁵ Eu	6.10E-05 ± 492%	
		²³⁸ Pu	3.90E-05 ± 59%	
		^{239,240} Pu	7.00E-06 ± 100%	
		¹⁰³ Ru	6.50E-05 ± 185%	
		¹⁰⁶ Ru	-2.80E-04 ± 357%	
		¹²⁵ Sb	-2.00E-04 ± 140%	
		¹¹³ Sn	-7.10E-05 ± 183%	
		⁹⁰ Sr	2.50E-04 ± 44%	
		²³⁴ U	4.10E-05 ± 41%	
		²³⁵ U	2.10E-05 ± 48%	
		²³⁸ U	2.30E-05 ± 48%	
		⁶⁵ Zn	1.00E-04 ± 280%	
EDP Code	Composite Period	Isotope	Result ± Error	
N-497	2/1/99 - 5/24/99	⁶⁰ Co	-2.20E-06 ± 1000%	Sampling Completed: 5/24/99
		¹³⁴ Cs	2.20E-04 ± 91%	
		¹³⁷ Cs	1.30E-05 ± 923%	
		¹⁵² Eu	1.70E-04 ± 159%	
		¹⁵⁴ Eu	-2.20E-04 ± 168%	
		¹⁵⁵ Eu	1.40E-04 ± 229%	
		²³⁸ Pu	-6.00E-06 ± 283%	
		^{239,240} Pu	1.00E-06 ± 660%	
		¹⁰³ Ru	1.40E-05 ± 714%	
		¹⁰⁶ Ru	-2.70E-05 ± 1000%	
		¹²⁵ Sb	-1.10E-04 ± 227%	
		¹¹³ Sn	-1.60E-05 ± 813%	
		⁹⁰ Sr	3.80E-04 ± 39%	
		²³⁴ U	1.80E-05 ± 61%	
		²³⁵ U	1.80E-05 ± 61%	
		²³⁸ U	2.00E-05 ± 55%	
		⁶⁵ Zn	-6.10E-04 ± 100%	

100-K Spent Nuclear Fuels, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-401	12/29/98 - 6/29/99	²⁴¹ Am	2.90E-05 ± 90%	6/29/99 - 12/28/99	²⁴¹ Am	4.00E-05 ± 48%
		⁶⁰ Co	-2.60E-05 ± 331%		⁶⁰ Co	-2.00E-05 ± 390%
		¹³⁴ Cs	6.70E-05 ± 110%		¹³⁴ Cs	-2.50E-05 ± 312%
		¹³⁷ Cs	4.40E-05 ± 170%		¹³⁷ Cs	-4.40E-06 ± 1000%
		¹⁵² Eu	-9.30E-05 ± 183%		¹⁵² Eu	2.30E-05 ± 696%
		¹⁵⁴ Eu	1.20E-04 ± 183%		¹⁵⁴ Eu	-9.40E-05 ± 202%
		¹⁵⁵ Eu	5.80E-05 ± 328%		¹⁵⁵ Eu	-7.60E-05 ± 237%
		²³⁸ Pu	-4.20E-06 ± 238%		²³⁸ Pu	1.30E-06 ± 1000%
		^{239,240} Pu	3.30E-05 ± 42%		^{239,240} Pu	1.40E-05 ± 79%
		²⁴¹ Pu	-4.00E-04 ± 200%		²⁴¹ Pu	6.90E-05 ± 30%
		¹⁰³ Ru	-1.70E-05 ± 471%		¹⁰³ Ru	-3.10E-05 ± 190%
		¹⁰⁶ Ru	4.90E-04 ± 141%		¹⁰⁶ Ru	-2.40E-04 ± 258%
		¹²⁵ Sb	1.20E-04 ± 133%		¹²⁵ Sb	-1.50E-05 ± 1000%
		¹¹³ Sn	-7.40E-05 ± 120%		¹¹³ Sn	-1.60E-05 ± 463%
		⁹⁰ Sr	2.30E-04 ± 35%		⁹⁰ Sr	7.50E-05 ± 111%
		²³⁴ U	1.70E-05 ± 51%		²³⁴ U	2.20E-05 ± 50%
		²³⁵ U	3.70E-06 ± 95%		²³⁵ U	4.00E-06 ± 110%
		²³⁸ U	1.60E-05 ± 51%		²³⁸ U	1.60E-05 ± 53%
		⁶⁵ Zn	-2.10E-04 ± 100%		⁶⁵ Zn	1.40E-04 ± 121%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-K Spent Nuclear Fuels, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-402	12/29/98 - 6/29/99	²⁴¹ Am	1.70E-05 ± 71%	6/29/99 - 12/28/99	²⁴¹ Am	2.80E-05 ± 54%
		⁶⁰ Co	-2.40E-05 ± 250%		⁶⁰ Co	-4.90E-06 ± 1000%
		¹³⁴ Cs	2.00E-05 ± 310%		¹³⁴ Cs	1.40E-05 ± 450%
		¹³⁷ Cs	4.30E-05 ± 140%		¹³⁷ Cs	8.40E-05 ± 73%
		¹⁵² Eu	8.90E-05 ± 146%		¹⁵² Eu	-8.90E-05 ± 157%
		¹⁵⁴ Eu	4.90E-05 ± 327%		¹⁵⁴ Eu	1.10E-05 ± 1000%
		¹⁵⁵ Eu	-7.90E-05 ± 165%		¹⁵⁵ Eu	2.40E-05 ± 667%
		²³⁸ Pu	3.70E-06 ± 270%		²³⁸ Pu	-2.50E-06 ± 720%
		^{239,240} Pu	3.00E-06 ± 93%		^{239,240} Pu	1.50E-05 ± 65%
		²⁴¹ Pu	-8.10E-05 ± 100%		²⁴¹ Pu	-2.40E-04 ± 100%
		¹⁰³ Ru	-7.80E-05 ± 100%		¹⁰³ Ru	4.40E-05 ± 130%
		¹⁰⁶ Ru	3.10E-04 ± 171%		¹⁰⁶ Ru	-8.60E-04 ± 100%
		¹²⁵ Sb	4.10E-05 ± 317%		¹²⁵ Sb	-1.30E-04 ± 131%
		¹¹³ Sn	-3.30E-06 ± 1000%		¹¹³ Sn	4.90E-05 ± 131%
		⁹⁰ Sr	2.70E-04 ± 41%		⁹⁰ Sr	1.70E-04 ± 59%
		²³⁴ U	1.70E-05 ± 49%		²³⁴ U	8.20E-06 ± 70%
		²³⁵ U	1.10E-05 ± 59%		²³⁵ U	3.80E-06 ± 95%
		²³⁸ U	1.60E-05 ± 50%		²³⁸ U	1.10E-05 ± 59%
		⁶⁵ Zn	-8.40E-05 ± 155%		⁶⁵ Zn	2.70E-05 ± 407%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-403	12/29/98 - 6/29/99	²⁴¹ Am	4.30E-05 ± 53%	6/29/99 - 12/28/99	²⁴¹ Am	2.30E-05 ± 70%
		⁶⁰ Co	7.60E-05 ± 79%		⁶⁰ Co	5.00E-05 ± 140%
		¹³⁴ Cs	-1.80E-05 ± 328%		¹³⁴ Cs	9.20E-07 ± 1000%
		¹³⁷ Cs	7.30E-05 ± 96%		¹³⁷ Cs	1.20E-04 ± 66%
		¹⁵² Eu	-7.80E-05 ± 192%		¹⁵² Eu	-5.40E-05 ± 370%
		¹⁵⁴ Eu	-4.90E-05 ± 490%		¹⁵⁴ Eu	1.80E-04 ± 122%
		¹⁵⁵ Eu	7.10E-05 ± 225%		¹⁵⁵ Eu	2.10E-05 ± 952%
		²³⁸ Pu	6.20E-07 ± 100%		²³⁸ Pu	1.50E-06 ± 1000%
		^{239,240} Pu	1.00E-04 ± 35%		^{239,240} Pu	3.50E-05 ± 54%
		²⁴¹ Pu	-5.30E-04 ± 245%		²⁴¹ Pu	1.30E-03 ± 25%
		¹⁰³ Ru	4.70E-05 ± 160%		¹⁰³ Ru	-5.80E-05 ± 140%
		¹⁰⁶ Ru	-1.70E-04 ± 318%		¹⁰⁶ Ru	8.40E-05 ± 774%
		¹²⁵ Sb	-4.50E-05 ± 311%		¹²⁵ Sb	-9.70E-05 ± 186%
		¹¹³ Sn	-2.50E-05 ± 280%		¹¹³ Sn	1.90E-05 ± 432%
		⁹⁰ Sr	4.00E-04 ± 30%		⁹⁰ Sr	1.60E-04 ± 60%
		²³⁴ U	3.10E-05 ± 42%		²³⁴ U	1.40E-05 ± 54%
		²³⁵ U	1.10E-05 ± 64%		²³⁵ U	7.50E-07 ± 200%
		²³⁸ U	1.80E-05 ± 49%		²³⁸ U	8.10E-06 ± 65%
		⁶⁵ Zn	-4.70E-05 ± 319%		⁶⁵ Zn	-1.20E-04 ± 150%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-404	12/29/98 - 6/29/99	²⁴¹ Am	3.40E-05 ± 62%	6/29/99 - 12/28/99	²⁴¹ Am	1.90E-05 ± 79%
		⁶⁰ Co	-3.30E-05 ± 221%		⁶⁰ Co	1.20E-05 ± 583%
		¹³⁴ Cs	-3.40E-05 ± 229%		¹³⁴ Cs	-2.50E-05 ± 320%
		¹³⁷ Cs	5.80E-05 ± 129%		¹³⁷ Cs	-5.80E-06 ± 1000%
		¹⁵² Eu	-6.10E-05 ± 311%		¹⁵² Eu	-9.90E-05 ± 172%
		¹⁵⁴ Eu	-5.10E-05 ± 412%		¹⁵⁴ Eu	-3.00E-04 ± 100%
		¹⁵⁵ Eu	-1.30E-04 ± 138%		¹⁵⁵ Eu	-6.70E-05 ± 313%
		²³⁸ Pu	1.30E-06 ± 569%		²³⁸ Pu	1.70E-06 ± 1000%
		^{239,240} Pu	5.70E-06 ± 74%		^{239,240} Pu	5.30E-06 ± 149%
		²⁴¹ Pu	-4.70E-04 ± 200%		²⁴¹ Pu	2.90E-04 ± 25%
		¹⁰³ Ru	2.20E-05 ± 359%		¹⁰³ Ru	-2.90E-05 ± 269%
		¹⁰⁶ Ru	1.40E-04 ± 457%		¹⁰⁶ Ru	-8.40E-04 ± 100%
		¹²⁵ Sb	-3.80E-05 ± 474%		¹²⁵ Sb	-2.20E-04 ± 100%
		¹¹³ Sn	5.00E-05 ± 160%		¹¹³ Sn	5.00E-05 ± 160%
		⁹⁰ Sr	3.40E-04 ± 29%		⁹⁰ Sr	4.20E-06 ± 1000%
		²³⁴ U	1.60E-05 ± 55%		²³⁴ U	1.60E-05 ± 58%
		²³⁵ U	8.10E-06 ± 73%		²³⁵ U	8.80E-07 ± 100%
		²³⁸ U	1.40E-05 ± 55%		²³⁸ U	1.30E-05 ± 62%
		⁶⁵ Zn	-1.30E-04 ± 138%		⁶⁵ Zn	-1.70E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-K Spent Nuclear Fuels, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-476	2/17/99 - 6/29/99	²⁴¹ Am	3.00E-05 ± 73%	6/29/99 - 12/28/99	²⁴¹ Am	3.20E-05 ± 53%
		⁶⁰ Co	1.10E-05 ± 773%		⁶⁰ Co	-3.90E-05 ± 210%
		¹³⁴ Cs	9.30E-06 ± 914%		¹³⁴ Cs	-5.50E-05 ± 120%
		¹³⁷ Cs	1.70E-04 ± 55%		¹³⁷ Cs	2.10E-05 ± 329%
		¹⁵² Eu	7.60E-05 ± 237%		¹⁵² Eu	6.50E-06 ± 1000%
		¹⁵⁴ Eu	6.10E-05 ± 426%		¹⁵⁴ Eu	-3.30E-05 ± 576%
		¹⁵⁵ Eu	1.60E-04 ± 113%		¹⁵⁵ Eu	2.60E-05 ± 692%
		²³⁸ Pu	2.60E-07 ± 300%		²³⁸ Pu	7.40E-06 ± 297%
		^{239,240} Pu	2.10E-06 ± 319%		^{239,240} Pu	3.90E-06 ± 179%
		²⁴¹ Pu	-3.10E-04 ± 148%		²⁴¹ Pu	3.00E-04 ± 25%
		¹⁰³ Ru	-1.00E-04 ± 100%		¹⁰³ Ru	-2.50E-05 ± 252%
		¹⁰⁶ Ru	-4.60E-04 ± 161%		¹⁰⁶ Ru	-2.00E-04 ± 300%
		¹²⁵ Sb	-1.70E-04 ± 112%		¹²⁵ Sb	2.90E-05 ± 517%
		¹¹³ Sn	1.80E-06 ± 1000%		¹¹³ Sn	5.90E-05 ± 120%
		⁹⁰ Sr	3.10E-04 ± 45%		⁹⁰ Sr	8.80E-05 ± 85%
		²³⁴ U	2.50E-05 ± 52%		²³⁴ U	1.20E-05 ± 53%
		²³⁵ U	6.80E-06 ± 82%		²³⁵ U	2.60E-06 ± 112%
		²³⁸ U	1.10E-05 ± 63%		²³⁸ U	1.20E-05 ± 53%
		⁶⁵ Zn	-1.00E-04 ± 180%		⁶⁵ Zn	-2.00E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-477	2/17/99 - 6/29/99	²⁴¹ Am	4.00E-06 ± 425%	6/29/99 - 12/28/99	²⁴¹ Am	2.30E-05 ± 65%
		⁶⁰ Co	-9.50E-06 ± 1000%		⁶⁰ Co	2.40E-05 ± 258%
		¹³⁴ Cs	-1.10E-04 ± 100%		¹³⁴ Cs	-2.10E-05 ± 248%
		¹³⁷ Cs	1.70E-05 ± 647%		¹³⁷ Cs	5.60E-05 ± 120%
		¹⁵² Eu	-7.10E-05 ± 352%		¹⁵² Eu	3.30E-05 ± 455%
		¹⁵⁴ Eu	2.40E-05 ± 1000%		¹⁵⁴ Eu	1.30E-04 ± 131%
		¹⁵⁵ Eu	-2.00E-04 ± 130%		¹⁵⁵ Eu	-2.10E-05 ± 714%
		²³⁸ Pu	4.10E-06 ± 390%		²³⁸ Pu	1.30E-06 ± 1000%
		^{239,240} Pu	5.50E-06 ± 129%		^{239,240} Pu	3.90E-06 ± 149%
		²⁴¹ Pu	-8.50E-04 ± 306%		²⁴¹ Pu	3.00E-04 ± 25%
		¹⁰³ Ru	-3.40E-07 ± 1000%		¹⁰³ Ru	2.90E-05 ± 179%
		¹⁰⁶ Ru	-5.20E-05 ± 1000%		¹⁰⁶ Ru	-1.10E-04 ± 473%
		¹²⁵ Sb	-6.00E-05 ± 383%		¹²⁵ Sb	5.70E-05 ± 246%
		¹¹³ Sn	-4.10E-05 ± 268%		¹¹³ Sn	2.80E-05 ± 229%
		⁹⁰ Sr	8.40E-05 ± 119%		⁹⁰ Sr	9.50E-05 ± 82%
		²³⁴ U	2.00E-05 ± 50%		²³⁴ U	1.10E-05 ± 57%
		²³⁵ U	1.30E-05 ± 63%		²³⁵ U	2.10E-06 ± 119%
		²³⁸ U	6.10E-06 ± 85%		²³⁸ U	9.50E-06 ± 60%
		⁶⁵ Zn	-2.70E-04 ± 100%		⁶⁵ Zn	-1.30E-05 ± 923%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-478	2/17/99 - 6/29/99	²⁴¹ Am	2.70E-05 ± 70%	6/29/99 - 12/28/99	²⁴¹ Am	3.00E-05 ± 53%
		⁶⁰ Co	1.10E-04 ± 91%		⁶⁰ Co	-3.70E-06 ± 1000%
		¹³⁴ Cs	3.80E-05 ± 239%		¹³⁴ Cs	3.60E-05 ± 200%
		¹³⁷ Cs	-5.10E-05 ± 180%		¹³⁷ Cs	-3.80E-05 ± 179%
		¹⁵² Eu	5.00E-05 ± 460%		¹⁵² Eu	-1.10E-04 ± 145%
		¹⁵⁴ Eu	2.30E-05 ± 1000%		¹⁵⁴ Eu	1.80E-04 ± 122%
		¹⁵⁵ Eu	-6.90E-05 ± 348%		¹⁵⁵ Eu	8.50E-05 ± 212%
		²³⁸ Pu	-3.70E-06 ± 297%		²³⁸ Pu	1.00E-05 ± 200%
		^{239,240} Pu	5.40E-06 ± 109%		^{239,240} Pu	2.50E-06 ± 200%
		²⁴¹ Pu	-9.30E-04 ± 301%		²⁴¹ Pu	3.20E-04 ± 25%
		¹⁰³ Ru	9.50E-05 ± 105%		¹⁰³ Ru	-1.20E-05 ± 533%
		¹⁰⁶ Ru	-2.20E-04 ± 391%		¹⁰⁶ Ru	-2.80E-04 ± 221%
		¹²⁵ Sb	5.70E-05 ± 368%		¹²⁵ Sb	3.90E-05 ± 359%
		¹¹³ Sn	2.60E-05 ± 385%		¹¹³ Sn	-3.30E-06 ± 1000%
		⁹⁰ Sr	2.70E-04 ± 44%		⁹⁰ Sr	8.10E-05 ± 100%
		²³⁴ U	2.30E-05 ± 48%		²³⁴ U	1.10E-05 ± 61%
		²³⁵ U	1.00E-05 ± 65%		²³⁵ U	2.60E-06 ± 131%
		²³⁸ U	1.20E-05 ± 60%		²³⁸ U	8.80E-06 ± 60%
		⁶⁵ Zn	-3.30E-04 ± 100%		⁶⁵ Zn	-5.50E-05 ± 255%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-K Spent Nuclear Fuels, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-479	2/17/99 - 6/29/99	²⁴¹ Am	3.40E-05 ± 59%	6/29/99 - 12/28/99	²⁴¹ Am	2.20E-05 ± 64%
		⁶⁰ Co	-3.00E-05 ± 400%		⁶⁰ Co	1.50E-05 ± 400%
		¹³⁴ Cs	1.00E-04 ± 90%		¹³⁴ Cs	6.50E-05 ± 98%
		¹³⁷ Cs	-2.00E-05 ± 440%		¹³⁷ Cs	1.00E-04 ± 60%
		¹⁵² Eu	-9.50E-05 ± 221%		¹⁵² Eu	7.30E-05 ± 178%
		¹⁵⁴ Eu	-1.50E-05 ± 1000%		¹⁵⁴ Eu	6.70E-05 ± 284%
		¹⁵⁵ Eu	1.10E-04 ± 191%		¹⁵⁵ Eu	-7.20E-05 ± 208%
		²³⁸ Pu	-4.10E-06 ± 229%		²³⁸ Pu	-1.60E-05 ± 138%
		^{239,240} Pu	6.60E-06 ± 85%		^{239,240} Pu	1.30E-06 ± 1000%
		²⁴¹ Pu	-1.00E-03 ± 300%		²⁴¹ Pu	5.50E-04 ± 25%
		¹⁰³ Ru	5.00E-05 ± 180%		¹⁰³ Ru	2.10E-05 ± 271%
		¹⁰⁶ Ru	5.00E-04 ± 160%		¹⁰⁶ Ru	3.20E-04 ± 159%
		¹²⁵ Sb	3.40E-05 ± 618%		¹²⁵ Sb	-8.00E-06 ± 1000%
		¹¹³ Sn	7.30E-05 ± 121%		¹¹³ Sn	5.80E-07 ± 1000%
		⁹⁰ Sr	4.10E-04 ± 29%		⁹⁰ Sr	2.70E-05 ± 248%
		²³⁴ U	1.90E-05 ± 50%		²³⁴ U	8.10E-06 ± 90%
		²³⁵ U	8.30E-06 ± 70%		²³⁵ U	4.30E-06 ± 100%
		²³⁸ U	1.10E-05 ± 62%		²³⁸ U	9.40E-06 ± 68%
		⁶⁵ Zn	-9.20E-05 ± 207%		⁶⁵ Zn	-3.60E-05 ± 361%

100-N Surveillance and Maintenance Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-102	12/29/98 - 6/29/99	⁶⁰ Co	2.50E-04 ± 33%	6/29/99 - 12/28/99	⁶⁰ Co	1.20E-04 ± 63%
		¹³⁴ Cs	-3.90E-05 ± 190%		¹³⁴ Cs	-1.30E-05 ± 477%
		¹³⁷ Cs	7.30E-05 ± 110%		¹³⁷ Cs	7.40E-05 ± 91%
		¹⁵² Eu	7.70E-05 ± 234%		¹⁵² Eu	3.20E-05 ± 438%
		¹⁵⁴ Eu	-6.80E-05 ± 324%		¹⁵⁴ Eu	4.50E-05 ± 400%
		¹⁵⁵ Eu	8.00E-05 ± 238%		¹⁵⁵ Eu	-5.50E-05 ± 291%
		²³⁸ Pu	-1.30E-05 ± 85%		²³⁸ Pu	2.60E-06 ± 381%
		^{239,240} Pu	4.40E-05 ± 41%		^{239,240} Pu	1.30E-05 ± 56%
		¹⁰³ Ru	-2.20E-05 ± 332%		¹⁰³ Ru	1.60E-06 ± 1000%
		¹⁰⁶ Ru	-2.10E-04 ± 319%		¹⁰⁶ Ru	-5.00E-04 ± 120%
		¹²⁵ Sb	4.40E-05 ± 364%		¹²⁵ Sb	4.20E-05 ± 357%
		¹¹³ Sn	1.40E-05 ± 571%		¹¹³ Sn	-2.70E-05 ± 100%
		⁹⁰ Sr	2.50E-04 ± 40%		⁹⁰ Sr	1.80E-04 ± 50%
		²³⁴ U	1.70E-05 ± 48%		²³⁴ U	1.60E-05 ± 53%
		²³⁵ U	3.00E-06 ± 100%		²³⁵ U	5.50E-06 ± 91%
		²³⁸ U	1.20E-05 ± 56%		²³⁸ U	1.20E-05 ± 59%
		⁶⁵ Zn	-1.40E-04 ± 121%		⁶⁵ Zn	3.80E-05 ± 316%
N-103	12/29/98 - 6/29/99	⁶⁰ Co	-3.60E-05 ± 189%	6/29/99 - 12/28/99	⁶⁰ Co	1.70E-05 ± 500%
		¹³⁴ Cs	-1.50E-05 ± 480%		¹³⁴ Cs	9.10E-05 ± 110%
		¹³⁷ Cs	2.70E-05 ± 259%		¹³⁷ Cs	5.30E-05 ± 140%
		¹⁵² Eu	8.40E-05 ± 190%		¹⁵² Eu	-6.40E-05 ± 297%
		¹⁵⁴ Eu	7.80E-05 ± 295%		¹⁵⁴ Eu	-4.00E-05 ± 500%
		¹⁵⁵ Eu	4.10E-05 ± 439%		¹⁵⁵ Eu	8.10E-05 ± 235%
		²³⁸ Pu	-6.50E-07 ± 1000%		²³⁸ Pu	8.90E-06 ± 100%
		^{239,240} Pu	8.20E-05 ± 37%		^{239,240} Pu	5.20E-05 ± 38%
		¹⁰³ Ru	6.00E-05 ± 78%		¹⁰³ Ru	2.30E-05 ± 330%
		¹⁰⁶ Ru	-6.20E-04 ± 100%		¹⁰⁶ Ru	-4.30E-04 ± 151%
		¹²⁵ Sb	-1.10E-04 ± 136%		¹²⁵ Sb	-2.80E-05 ± 607%
		¹¹³ Sn	2.50E-05 ± 280%		¹¹³ Sn	2.10E-05 ± 429%
		⁹⁰ Sr	1.40E-04 ± 51%		⁹⁰ Sr	8.20E-05 ± 90%
		²³⁴ U	1.00E-05 ± 59%		²³⁴ U	1.50E-05 ± 53%
		²³⁵ U	2.00E-06 ± 120%		²³⁵ U	2.30E-06 ± 122%
		²³⁸ U	5.00E-06 ± 84%		²³⁸ U	1.20E-05 ± 57%
		⁶⁵ Zn	-1.80E-04 ± 100%		⁶⁵ Zn	-1.90E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-N Surveillance and Maintenance Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-105	12/29/98 - 6/29/99	⁶⁰ Co	2.70E-04 ± 24%	6/29/99 - 12/28/99	⁶⁰ Co	3.00E-04 ± 63%
		¹³⁴ Cs	1.50E-05 ± 413%		¹³⁴ Cs	-1.60E-05 ± 469%
		¹³⁷ Cs	1.70E-04 ± 50%		¹³⁷ Cs	1.10E-04 ± 100%
		¹⁵² Eu	-6.90E-05 ± 217%		¹⁵² Eu	8.90E-06 ± 1000%
		¹⁵⁴ Eu	-4.00E-05 ± 450%		¹⁵⁴ Eu	-2.10E-05 ± 1000%
		¹⁵⁵ Eu	3.00E-05 ± 533%		¹⁵⁵ Eu	-4.40E-05 ± 455%
		²³⁸ Pu	5.70E-06 ± 170%		²³⁸ Pu	1.00E-05 ± 110%
		^{239,240} Pu	1.00E-05 ± 70%		^{239,240} Pu	5.40E-06 ± 100%
		¹⁰³ Ru	-1.80E-06 ± 1000%		¹⁰³ Ru	-1.90E-05 ± 400%
		¹⁰⁶ Ru	8.90E-05 ± 596%		¹⁰⁶ Ru	-6.30E-05 ± 1000%
		¹²⁵ Sb	-7.10E-05 ± 211%		¹²⁵ Sb	-8.20E-05 ± 195%
		¹¹³ Sn	-1.30E-05 ± 523%		¹¹³ Sn	4.50E-05 ± 189%
		⁹⁰ Sr	1.70E-04 ± 50%		⁹⁰ Sr	2.20E-04 ± 40%
		²³⁴ U	2.00E-05 ± 41%		²³⁴ U	1.90E-05 ± 53%
		²³⁵ U	4.90E-06 ± 59%		²³⁵ U	2.70E-06 ± 119%
		²³⁸ U	6.10E-06 ± 56%		²³⁸ U	9.00E-06 ± 72%
		⁶⁵ Zn	-1.80E-04 ± 100%		⁶⁵ Zn	-1.50E-04 ± 133%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-106	12/29/98 - 6/29/99	⁶⁰ Co	1.10E-04 ± 100%	6/29/99 - 12/28/99	⁶⁰ Co	6.80E-05 ± 110%
		¹³⁴ Cs	-1.80E-07 ± 1000%		¹³⁴ Cs	-4.30E-05 ± 170%
		¹³⁷ Cs	1.10E-04 ± 84%		¹³⁷ Cs	8.40E-07 ± 1000%
		¹⁵² Eu	1.40E-04 ± 171%		¹⁵² Eu	-5.00E-05 ± 320%
		¹⁵⁴ Eu	2.30E-04 ± 109%		¹⁵⁴ Eu	-1.40E-04 ± 143%
		¹⁵⁵ Eu	8.30E-05 ± 277%		¹⁵⁵ Eu	-1.50E-04 ± 120%
		²³⁸ Pu	1.80E-06 ± 833%		²³⁸ Pu	4.30E-06 ± 200%
		^{239,240} Pu	2.90E-05 ± 48%		^{239,240} Pu	1.50E-05 ± 53%
		¹⁰³ Ru	-8.40E-06 ± 940%		¹⁰³ Ru	4.30E-06 ± 1000%
		¹⁰⁶ Ru	-1.60E-04 ± 488%		¹⁰⁶ Ru	-2.30E-04 ± 261%
		¹²⁵ Sb	9.50E-05 ± 211%		¹²⁵ Sb	-6.20E-05 ± 226%
		¹¹³ Sn	-5.90E-05 ± 159%		¹¹³ Sn	-1.20E-05 ± 558%
		⁹⁰ Sr	1.80E-04 ± 55%		⁹⁰ Sr	1.30E-04 ± 75%
		²³⁴ U	1.70E-05 ± 49%		²³⁴ U	1.30E-05 ± 56%
		²³⁵ U	5.80E-06 ± 72%		²³⁵ U	2.40E-06 ± 150%
		²³⁸ U	1.30E-05 ± 53%		²³⁸ U	1.10E-05 ± 63%
		⁶⁵ Zn	-5.70E-05 ± 386%		⁶⁵ Zn	-1.90E-04 ± 100%

100-D Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-467	12/29/98 - 6/30/99	⁶⁰ Co	-3.60E-05 ± 181%	6/30/99 - 12/28/99	⁶⁰ Co	-8.60E-05 ± 100%
		¹³⁴ Cs	1.60E-05 ± 381%		¹³⁴ Cs	-1.10E-05 ± 691%
		¹³⁷ Cs	6.40E-05 ± 100%		¹³⁷ Cs	-6.90E-06 ± 1000%
		¹⁵² Eu	1.80E-04 ± 100%		¹⁵² Eu	4.50E-05 ± 400%
		¹⁵⁴ Eu	5.50E-05 ± 327%		¹⁵⁴ Eu	-1.60E-04 ± 150%
		¹⁵⁵ Eu	-6.30E-05 ± 206%		¹⁵⁵ Eu	-1.60E-05 ± 1000%
		²³⁸ Pu	3.70E-06 ± 170%		²³⁸ Pu	5.10E-06 ± 171%
		^{239,240} Pu	5.50E-06 ± 73%		^{239,240} Pu	3.20E-06 ± 94%
		¹⁰³ Ru	2.30E-05 ± 230%		¹⁰³ Ru	6.40E-06 ± 1000%
		¹⁰⁶ Ru	-1.20E-05 ± 1000%		¹⁰⁶ Ru	-3.40E-05 ± 1000%
		¹²⁵ Sb	-9.30E-05 ± 151%		¹²⁵ Sb	-7.60E-05 ± 211%
		¹¹³ Sn	2.80E-06 ± 1000%		¹¹³ Sn	-3.80E-05 ± 221%
		⁹⁰ Sr	4.00E-05 ± 130%		⁹⁰ Sr	2.30E-04 ± 40%
		²³⁴ U	3.00E-05 ± 47%		²³⁴ U	9.50E-06 ± 76%
		²³⁵ U	1.10E-05 ± 63%		²³⁵ U	4.60E-06 ± 87%
		²³⁸ U	3.20E-05 ± 44%		²³⁸ U	1.20E-05 ± 58%
		⁶⁵ Zn	-1.30E-04 ± 100%		⁶⁵ Zn	-3.20E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-D Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-468	12/29/98 - 6/30/99	⁶⁰ Co	6.70E-05 ± 110%	6/30/99 - 12/28/99	⁶⁰ Co	7.80E-05 ± 83%
		¹³⁴ Cs	4.90E-05 ± 131%		¹³⁴ Cs	-6.90E-07 ± 1000%
		¹³⁷ Cs	2.50E-05 ± 272%		¹³⁷ Cs	1.40E-04 ± 69%
		¹⁵² Eu	2.30E-04 ± 65%		¹⁵² Eu	2.80E-05 ± 464%
		¹⁵⁴ Eu	2.00E-05 ± 850%		¹⁵⁴ Eu	-1.10E-04 ± 182%
		¹⁵⁵ Eu	-7.90E-05 ± 203%		¹⁵⁵ Eu	1.50E-04 ± 80%
		²³⁸ Pu	-4.30E-06 ± 191%		²³⁸ Pu	-1.90E-06 ± 511%
		^{239,240} Pu	7.40E-06 ± 69%		^{239,240} Pu	2.00E-05 ± 50%
		¹⁰³ Ru	2.40E-05 ± 221%		¹⁰³ Ru	5.50E-05 ± 120%
		¹⁰⁶ Ru	2.60E-04 ± 238%		¹⁰⁶ Ru	-3.30E-04 ± 161%
		¹²⁵ Sb	-6.50E-05 ± 215%		¹²⁵ Sb	7.70E-05 ± 169%
		¹¹³ Sn	-7.50E-06 ± 827%		¹¹³ Sn	2.00E-05 ± 320%
		⁹⁰ Sr	1.30E-04 ± 55%		⁹⁰ Sr	1.20E-04 ± 60%
		²³⁴ U	3.00E-05 ± 47%		²³⁴ U	1.80E-05 ± 54%
		²³⁵ U	8.70E-06 ± 76%		²³⁵ U	3.90E-06 ± 141%
		²³⁸ U	2.10E-05 ± 48%		²³⁸ U	1.40E-05 ± 56%
		⁶⁵ Zn	-1.20E-04 ± 108%		⁶⁵ Zn	-2.20E-05 ± 773%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-469	12/29/98 - 6/30/99	⁶⁰ Co	2.70E-06 ± 1000%	6/30/99 - 12/28/99	⁶⁰ Co	6.70E-05 ± 97%
		¹³⁴ Cs	5.70E-05 ± 130%		¹³⁴ Cs	-2.30E-05 ± 300%
		¹³⁷ Cs	1.10E-04 ± 78%		¹³⁷ Cs	1.70E-04 ± 71%
		¹⁵² Eu	7.60E-04 ± 24%		¹⁵² Eu	1.60E-03 ± 13%
		¹⁵⁴ Eu	-4.00E-05 ± 550%		¹⁵⁴ Eu	1.20E-04 ± 167%
		¹⁵⁵ Eu	2.00E-05 ± 950%		¹⁵⁵ Eu	-7.80E-05 ± 218%
		²³⁸ Pu	1.10E-05 ± 127%		²³⁸ Pu	4.00E-06 ± 275%
		^{239,240} Pu	1.10E-05 ± 68%		^{239,240} Pu	6.60E-06 ± 89%
		¹⁰³ Ru	-5.90E-05 ± 110%		¹⁰³ Ru	2.80E-05 ± 239%
		¹⁰⁶ Ru	2.70E-05 ± 1000%		¹⁰⁶ Ru	-3.50E-05 ± 1000%
		¹²⁵ Sb	5.50E-05 ± 273%		¹²⁵ Sb	8.60E-05 ± 174%
		¹¹³ Sn	-4.60E-05 ± 170%		¹¹³ Sn	-3.60E-05 ± 211%
		⁹⁰ Sr	2.10E-04 ± 40%		⁹⁰ Sr	1.80E-04 ± 51%
		²³⁴ U	2.00E-05 ± 41%		²³⁴ U	1.30E-05 ± 56%
		²³⁵ U	1.00E-05 ± 50%		²³⁵ U	6.80E-06 ± 71%
		²³⁸ U	1.00E-05 ± 49%		²³⁸ U	1.70E-05 ± 51%
		⁶⁵ Zn	-3.30E-04 ± 100%		⁶⁵ Zn	6.40E-05 ± 563%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-470	12/29/98 - 6/30/99	⁶⁰ Co	1.10E-05 ± 582%	6/30/99 - 12/28/99	⁶⁰ Co	1.10E-04 ± 86%
		¹³⁴ Cs	1.50E-05 ± 460%		¹³⁴ Cs	8.30E-07 ± 1000%
		¹³⁷ Cs	9.50E-05 ± 71%		¹³⁷ Cs	2.10E-04 ± 37%
		¹⁵² Eu	1.90E-04 ± 68%		¹⁵² Eu	2.30E-04 ± 91%
		¹⁵⁴ Eu	3.70E-05 ± 432%		¹⁵⁴ Eu	4.40E-05 ± 500%
		¹⁵⁵ Eu	1.80E-04 ± 61%		¹⁵⁵ Eu	-1.30E-04 ± 162%
		²³⁸ Pu	-1.10E-05 ± 100%		²³⁸ Pu	7.80E-06 ± 154%
		^{239,240} Pu	2.80E-05 ± 43%		^{239,240} Pu	3.80E-05 ± 42%
		¹⁰³ Ru	-1.80E-05 ± 300%		¹⁰³ Ru	2.50E-05 ± 320%
		¹⁰⁶ Ru	-1.50E-05 ± 1000%		¹⁰⁶ Ru	-2.20E-04 ± 309%
		¹²⁵ Sb	9.10E-05 ± 165%		¹²⁵ Sb	1.40E-04 ± 143%
		¹¹³ Sn	2.50E-05 ± 240%		¹¹³ Sn	2.00E-05 ± 490%
		⁹⁰ Sr	4.70E-05 ± 140%		⁹⁰ Sr	1.10E-04 ± 86%
		²³⁴ U	1.80E-05 ± 46%		²³⁴ U	1.90E-05 ± 52%
		²³⁵ U	6.80E-06 ± 63%		²³⁵ U	1.60E-06 ± 200%
		²³⁸ U	1.60E-05 ± 47%		²³⁸ U	1.80E-05 ± 52%
		⁶⁵ Zn	-4.90E-05 ± 306%		⁶⁵ Zn	-7.30E-05 ± 247%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-D Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)				
EDP Code		Composite Period	Isotope	Result ± Error
N-512	Sampler on line: 8/12/99	8/12/99 - 12/28/99	⁶⁰ Co	3.80E-05 ± 211%
			¹³⁴ Cs	1.70E-05 ± 471%
			¹³⁷ Cs	-2.90E-05 ± 300%
			¹⁵² Eu	6.10E-06 ± 1000%
			¹⁵⁴ Eu	-3.00E-05 ± 667%
			¹⁵⁵ Eu	-1.60E-05 ± 1000%
			²³⁸ Pu	1.90E-05 ± 89%
			^{239,240} Pu	5.90E-06 ± 120%
			¹⁰³ Ru	4.80E-05 ± 179%
			¹⁰⁶ Ru	2.60E-05 ± 1000%
			¹²⁵ Sb	2.10E-04 ± 90%
			¹¹³ Sn	-5.60E-05 ± 161%
			⁹⁰ Sr	1.50E-04 ± 80%
			²³⁴ U	2.10E-05 ± 57%
			²³⁵ U	2.30E-06 ± 200%
			²³⁸ U	6.30E-06 ± 98%
			⁶⁵ Zn	-1.40E-04 ± 129%
EDP Code		Composite Period	Isotope	Result ± Error
N-513	Sampler on line: 8/12/99	8/12/99 - 12/28/99	⁶⁰ Co	7.70E-05 ± 143%
			¹³⁴ Cs	-2.60E-05 ± 385%
			¹³⁷ Cs	2.70E-05 ± 330%
			¹⁵² Eu	1.40E-04 ± 171%
			¹⁵⁴ Eu	-2.40E-04 ± 121%
			¹⁵⁵ Eu	-1.20E-04 ± 208%
			²³⁸ Pu	1.40E-05 ± 121%
			^{239,240} Pu	8.10E-06 ± 77%
			¹⁰³ Ru	-3.10E-06 ± 1000%
			¹⁰⁶ Ru	-5.40E-04 ± 150%
			¹²⁵ Sb	2.60E-04 ± 96%
			¹¹³ Sn	3.40E-05 ± 324%
			⁹⁰ Sr	9.90E-05 ± 121%
			²³⁴ U	2.70E-05 ± 48%
			²³⁵ U	1.90E-06 ± 147%
			²³⁸ U	1.30E-05 ± 65%
			⁶⁵ Zn	-1.30E-04 ± 169%
EDP Code		Composite Period	Isotope	Result ± Error
N-514	Sampler on line: 8/14/99	8/14/99 - 12/28/99	⁶⁰ Co	1.60E-05 ± 619%
			¹³⁴ Cs	3.80E-05 ± 261%
			¹³⁷ Cs	6.50E-06 ± 1000%
			¹⁵² Eu	1.90E-05 ± 1000%
			¹⁵⁴ Eu	-3.40E-04 ± 100%
			¹⁵⁵ Eu	-6.30E-05 ± 397%
			²³⁸ Pu	1.40E-05 ± 121%
			^{239,240} Pu	6.50E-06 ± 82%
			¹⁰³ Ru	3.20E-05 ± 300%
			¹⁰⁶ Ru	-4.50E-04 ± 222%
			¹²⁵ Sb	1.30E-04 ± 169%
			¹¹³ Sn	4.30E-05 ± 233%
			⁹⁰ Sr	5.20E-04 ± 31%
			²³⁴ U	3.30E-05 ± 48%
			²³⁵ U	3.50E-06 ± 149%
			²³⁸ U	2.30E-05 ± 52%
			⁶⁵ Zn	1.10E-04 ± 218%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-D Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)

EDP Code	Composite Period	Isotope	Result ± Error
N-515	Sampler on line: 8/13/99 8/13/99 - 12/28/99	⁶⁰ Co	4.20E-05 ± 231%
		¹³⁴ Cs	1.40E-05 ± 557%
		¹³⁷ Cs	2.90E-05 ± 290%
		¹⁵² Eu	-9.60E-05 ± 188%
		¹⁵⁴ Eu	5.30E-06 ± 1000%
		¹⁵⁵ Eu	5.60E-05 ± 321%
		²³⁸ Pu	6.20E-06 ± 226%
		^{239,240} Pu	2.40E-06 ± 150%
		¹⁰³ Ru	3.30E-05 ± 248%
		¹⁰⁶ Ru	2.60E-04 ± 281%
		¹²⁵ Sb	-1.10E-05 ± 1000%
		¹¹³ Sn	7.60E-05 ± 111%
		⁹⁰ Sr	7.70E-05 ± 156%
		²³⁴ U	1.80E-05 ± 56%
		²³⁵ U	4.20E-06 ± 100%
		²³⁸ U	2.20E-05 ± 55%
		⁶⁵ Zn	1.30E-04 ± 138%

100-D, 116-D Stack Demolition Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)

EDP Code	Composite Period	Isotope	Result ± Error
N-511	Sampler on line: 7/15/99. Sampling Completed: 9/30/99. 7/15/99 - 9/30/99	⁶⁰ Co	-7.60E-05 ± 237%
		¹³⁴ Cs	-1.60E-04 ± 119%
		¹³⁷ Cs	3.90E-06 ± 1000%
		¹⁵² Eu	2.30E-04 ± 200%
		¹⁵⁴ Eu	2.50E-05 ± 1000%
		¹⁵⁵ Eu	-4.50E-05 ± 1000%
		²³⁸ Pu	7.40E-06 ± 405%
		^{239,240} Pu	3.80E-06 ± 200%
		¹⁰³ Ru	9.60E-05 ± 156%
		¹⁰⁶ Ru	-1.10E-03 ± 127%
		¹²⁵ Sb	-2.20E-04 ± 200%
		¹¹³ Sn	-8.80E-06 ± 1000%
		⁹⁰ Sr	3.50E-04 ± 54%
		²³⁴ U	4.10E-05 ± 54%
		²³⁵ U	8.40E-06 ± 110%
		²³⁸ U	3.60E-05 ± 56%
		⁶⁵ Zn	-8.30E-05 ± 494%

100-H Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)

EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-507	2/22/99 - 6/30/99	⁶⁰ Co	5.40E-05 ± 170%	6/30/99 - 12/28/99	⁶⁰ Co	3.30E-06 ± 1000%
		¹³⁴ Cs	1.10E-04 ± 84%		¹³⁴ Cs	-2.10E-05 ± 310%
		¹³⁷ Cs	7.60E-05 ± 111%		¹³⁷ Cs	2.10E-05 ± 281%
		¹⁵² Eu	3.20E-06 ± 1000%		¹⁵² Eu	-4.60E-05 ± 283%
		¹⁵⁴ Eu	7.30E-05 ± 356%		¹⁵⁴ Eu	-5.50E-05 ± 345%
		¹⁵⁵ Eu	-1.00E-04 ± 180%		¹⁵⁵ Eu	1.50E-04 ± 93%
		²³⁸ Pu	-2.10E-05 ± 100%		²³⁸ Pu	-8.20E-06 ± 146%
		^{239,240} Pu	8.70E-06 ± 91%		^{239,240} Pu	1.20E-05 ± 60%
		¹⁰³ Ru	1.20E-04 ± 100%		¹⁰³ Ru	7.10E-05 ± 82%
		¹⁰⁶ Ru	6.70E-04 ± 110%		¹⁰⁶ Ru	-5.40E-05 ± 1000%
		¹²⁵ Sb	-2.40E-04 ± 100%		¹²⁵ Sb	-6.10E-05 ± 213%
		¹¹³ Sn	-2.10E-05 ± 471%		¹¹³ Sn	-3.60E-05 ± 169%
		⁹⁰ Sr	-4.80E-05 ± 179%		⁹⁰ Sr	1.40E-05 ± 471%
		²³⁴ U	3.60E-05 ± 42%		²³⁴ U	1.30E-05 ± 54%
		²³⁵ U	1.20E-05 ± 67%		²³⁵ U	1.40E-06 ± 150%
		²³⁸ U	1.80E-05 ± 53%		²³⁸ U	1.30E-05 ± 54%
		⁶⁵ Zn	-4.50E-04 ± 100%		⁶⁵ Zn	-1.10E-05 ± 1000%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-H Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-508	2/23/99 - 6/30/99	⁶⁰ Co	9.30E-06 ± 1000%	6/30/99 - 12/28/99	⁶⁰ Co	8.30E-06 ± 795%
		¹³⁴ Cs	1.10E-04 ± 109%		¹³⁴ Cs	3.90E-05 ± 190%
		¹³⁷ Cs	-1.00E-04 ± 100%		¹³⁷ Cs	2.20E-05 ± 300%
		¹⁵² Eu	-2.20E-04 ± 141%		¹⁵² Eu	1.50E-05 ± 933%
		¹⁵⁴ Eu	-1.10E-04 ± 364%		¹⁵⁴ Eu	2.40E-05 ± 750%
		¹⁵⁵ Eu	-2.10E-04 ± 148%		¹⁵⁵ Eu	4.40E-05 ± 364%
		²³⁸ Pu	5.00E-06 ± 220%		²³⁸ Pu	1.40E-06 ± 857%
		^{239,240} Pu	9.90E-07 ± 1000%		^{239,240} Pu	1.40E-06 ± 200%
		¹⁰³ Ru	-5.30E-05 ± 302%		¹⁰³ Ru	-1.90E-05 ± 342%
		¹⁰⁶ Ru	6.00E-04 ± 160%		¹⁰⁶ Ru	-8.30E-05 ± 675%
		¹²⁵ Sb	1.00E-04 ± 260%		¹²⁵ Sb	-6.80E-05 ± 206%
		¹¹³ Sn	4.70E-05 ± 319%		¹¹³ Sn	5.00E-05 ± 140%
		⁹⁰ Sr	2.40E-04 ± 50%		⁹⁰ Sr	3.50E-05 ± 286%
		²³⁴ U	3.60E-05 ± 42%		²³⁴ U	1.40E-05 ± 63%
		²³⁵ U	1.10E-05 ± 60%		²³⁵ U	1.60E-06 ± 150%
		²³⁸ U	1.70E-05 ± 50%		²³⁸ U	1.40E-05 ± 56%
		⁶⁵ Zn	-4.10E-05 ± 878%		⁶⁵ Zn	-8.70E-05 ± 126%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-509	2/22/99 - 6/30/99	⁶⁰ Co	-1.10E-05 ± 791%	6/30/99 - 12/28/99	⁶⁰ Co	6.60E-05 ± 111%
		¹³⁴ Cs	-1.40E-05 ± 607%		¹³⁴ Cs	-1.50E-05 ± 560%
		¹³⁷ Cs	2.10E-05 ± 381%		¹³⁷ Cs	1.70E-04 ± 54%
		¹⁵² Eu	-1.60E-04 ± 131%		¹⁵² Eu	4.20E-04 ± 38%
		¹⁵⁴ Eu	-1.10E-04 ± 236%		¹⁵⁴ Eu	4.70E-05 ± 447%
		¹⁵⁵ Eu	6.80E-05 ± 324%		¹⁵⁵ Eu	2.40E-05 ± 750%
		²³⁸ Pu	-1.10E-05 ± 127%		²³⁸ Pu	-4.10E-06 ± 293%
		^{239,240} Pu	4.90E-06 ± 96%		^{239,240} Pu	7.60E-06 ± 68%
		¹⁰³ Ru	-3.30E-05 ± 364%		¹⁰³ Ru	9.40E-05 ± 77%
		¹⁰⁶ Ru	1.80E-04 ± 428%		¹⁰⁶ Ru	4.50E-04 ± 151%
		¹²⁵ Sb	-1.50E-05 ± 1000%		¹²⁵ Sb	1.10E-05 ± 1000%
		¹¹³ Sn	-6.70E-05 ± 149%		¹¹³ Sn	1.00E-04 ± 76%
		⁹⁰ Sr	3.10E-04 ± 39%		⁹⁰ Sr	3.40E-05 ± 259%
		²³⁴ U	2.30E-05 ± 52%		²³⁴ U	1.50E-05 ± 56%
		²³⁵ U	6.40E-06 ± 100%		²³⁵ U	3.40E-06 ± 109%
		²³⁸ U	1.80E-05 ± 53%		²³⁸ U	1.40E-05 ± 56%
		⁶⁵ Zn	-3.60E-04 ± 100%		⁶⁵ Zn	8.60E-05 ± 186%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-510	2/22/99 - 6/30/99	⁶⁰ Co	-1.00E-06 ± 1000%	6/30/99 - 12/28/99	⁶⁰ Co	2.90E-05 ± 231%
		¹³⁴ Cs	3.20E-05 ± 309%		¹³⁴ Cs	5.90E-05 ± 100%
		¹³⁷ Cs	4.80E-06 ± 1000%		¹³⁷ Cs	4.20E-05 ± 150%
		¹⁵² Eu	-1.40E-04 ± 157%		¹⁵² Eu	6.90E-05 ± 188%
		¹⁵⁴ Eu	2.90E-04 ± 110%		¹⁵⁴ Eu	-8.20E-05 ± 232%
		¹⁵⁵ Eu	1.10E-04 ± 282%		¹⁵⁵ Eu	-3.10E-05 ± 419%
		²³⁸ Pu	7.00E-06 ± 229%		²³⁸ Pu	2.00E-05 ± 95%
		^{239,240} Pu	5.60E-06 ± 111%		^{239,240} Pu	3.30E-06 ± 121%
		¹⁰³ Ru	-1.20E-04 ± 117%		¹⁰³ Ru	2.90E-05 ± 210%
		¹⁰⁶ Ru	-3.00E-04 ± 310%		¹⁰⁶ Ru	1.00E-04 ± 560%
		¹²⁵ Sb	1.50E-04 ± 153%		¹²⁵ Sb	5.50E-05 ± 255%
		¹¹³ Sn	4.90E-05 ± 245%		¹¹³ Sn	1.70E-05 ± 359%
		⁹⁰ Sr	1.40E-04 ± 79%		⁹⁰ Sr	-1.30E-04 ± 100%
		²³⁴ U	1.40E-05 ± 64%		²³⁴ U	1.60E-05 ± 55%
		²³⁵ U	5.70E-06 ± 111%		²³⁵ U	3.50E-06 ± 140%
		²³⁸ U	1.30E-05 ± 61%		²³⁸ U	9.00E-06 ± 64%
		⁶⁵ Zn	-9.60E-05 ± 219%		⁶⁵ Zn	-3.70E-05 ± 324%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-F/DR Interim Safe Storage Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-492	12/29/98 - 3/25/99	¹⁴⁴ Ce	2.90E-04 ± 231%	3/25/99 - 6/29/99	¹⁴⁴ Ce	-2.00E-05 ± 1000%
		⁶⁰ Co	4.10E-05 ± 341%		⁶⁰ Co	-1.10E-04 ± 100%
		¹³⁴ Cs	-1.40E-04 ± 121%		¹³⁴ Cs	-1.00E-04 ± 120%
		¹³⁷ Cs	2.00E-04 ± 110%		¹³⁷ Cs	-4.00E-05 ± 375%
		¹⁵² Eu	-1.20E-04 ± 283%		¹⁵² Eu	1.10E-04 ± 227%
		¹⁵⁴ Eu	1.60E-04 ± 281%		¹⁵⁴ Eu	-5.10E-05 ± 725%
		¹⁵⁵ Eu	3.50E-04 ± 120%		¹⁵⁵ Eu	-1.70E-06 ± 1000%
		²³⁸ Pu	-9.80E-06 ± 204%		²³⁸ Pu	1.40E-05 ± 171%
		^{239,240} Pu	6.10E-05 ± 44%		^{239,240} Pu	7.30E-06 ± 121%
		¹⁰³ Ru	4.40E-05 ± 250%		¹⁰³ Ru	-7.10E-06 ± 1000%
		¹⁰⁶ Ru	1.00E-03 ± 140%		¹⁰⁶ Ru	2.40E-04 ± 417%
		¹²⁵ Sb	3.60E-05 ± 889%		¹²⁵ Sb	-7.40E-06 ± 1000%
		¹¹³ Sn	-8.50E-05 ± 165%		¹¹³ Sn	4.40E-05 ± 250%
		⁹⁰ Sr	1.90E-04 ± 95%		⁹⁰ Sr	2.90E-04 ± 48%
		²³⁴ U	3.60E-05 ± 53%		²³⁴ U	2.10E-05 ± 62%
		²³⁵ U	3.40E-05 ± 56%		²³⁵ U	1.20E-05 ± 73%
		²³⁸ U	1.60E-05 ± 69%		²³⁸ U	2.60E-05 ± 54%
		⁶⁵ Zn	-2.80E-04 ± 121%		⁶⁵ Zn	-2.30E-04 ± 122%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-492	6/29/99 - 10/5/99	¹⁴⁴ Ce	2.00E-04 ± 330%	10/5/99 - 12/28/99	¹⁴⁴ Ce	5.60E-07 ± 1000%
		⁶⁰ Co	3.00E-06 ± 1000%		⁶⁰ Co	1.10E-04 ± 127%
		¹³⁴ Cs	-8.40E-06 ± 1000%		¹³⁴ Cs	3.80E-05 ± 395%
		¹³⁷ Cs	-1.90E-05 ± 684%		¹³⁷ Cs	-3.80E-05 ± 342%
		¹⁵² Eu	1.40E-05 ± 1000%		¹⁵² Eu	-2.60E-04 ± 131%
		¹⁵⁴ Eu	-3.30E-05 ± 1000%		¹⁵⁴ Eu	1.80E-04 ± 261%
		¹⁵⁵ Eu	-1.70E-04 ± 188%		¹⁵⁵ Eu	-1.10E-04 ± 309%
		²³⁸ Pu	1.40E-06 ± 100%		²³⁸ Pu	6.10E-06 ± 459%
		^{239,240} Pu	2.20E-05 ± 59%		^{239,240} Pu	1.50E-06 ± 453%
		¹⁰³ Ru	1.00E-04 ± 100%		¹⁰³ Ru	-2.10E-05 ± 524%
		¹⁰⁶ Ru	7.90E-04 ± 152%		¹⁰⁶ Ru	-6.10E-04 ± 197%
		¹²⁵ Sb	1.00E-04 ± 260%		¹²⁵ Sb	1.90E-04 ± 179%
		¹¹³ Sn	5.80E-06 ± 1000%		¹¹³ Sn	2.30E-05 ± 565%
		⁹⁰ Sr	5.30E-05 ± 208%		⁹⁰ Sr	1.50E-03 ± 30%
		²³⁴ U	4.10E-05 ± 44%		²³⁴ U	1.50E-05 ± 67%
		²³⁵ U	1.10E-05 ± 70%		²³⁵ U	6.10E-06 ± 110%
		²³⁸ U	2.40E-05 ± 50%		²³⁸ U	4.20E-06 ± 119%
		⁶⁵ Zn	2.90E-04 ± 100%		⁶⁵ Zn	2.30E-05 ± 1000%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-493	12/29/98 - 3/25/99	¹⁴⁴ Ce	-2.50E-04 ± 192%	3/25/99 - 6/29/99	¹⁴⁴ Ce	-5.90E-05 ± 1000%
		⁶⁰ Co	2.70E-05 ± 481%		⁶⁰ Co	1.50E-04 ± 140%
		¹³⁴ Cs	-1.20E-04 ± 108%		¹³⁴ Cs	1.30E-05 ± 1000%
		¹³⁷ Cs	4.10E-05 ± 293%		¹³⁷ Cs	1.40E-04 ± 107%
		¹⁵² Eu	2.50E-04 ± 120%		¹⁵² Eu	1.30E-04 ± 300%
		¹⁵⁴ Eu	-6.90E-05 ± 522%		¹⁵⁴ Eu	2.10E-04 ± 210%
		¹⁵⁵ Eu	2.70E-06 ± 1000%		¹⁵⁵ Eu	1.60E-04 ± 238%
		²³⁸ Pu	3.60E-06 ± 389%		²³⁸ Pu	-1.90E-05 ± 142%
		^{239,240} Pu	1.10E-05 ± 100%		^{239,240} Pu	3.30E-06 ± 148%
		¹⁰³ Ru	6.00E-05 ± 167%		¹⁰³ Ru	2.60E-05 ± 462%
		¹⁰⁶ Ru	-1.10E-03 ± 100%		¹⁰⁶ Ru	-1.30E-03 ± 100%
		¹²⁵ Sb	-2.20E-04 ± 132%		¹²⁵ Sb	1.60E-04 ± 219%
		¹¹³ Sn	5.00E-05 ± 260%		¹¹³ Sn	-5.00E-05 ± 300%
		⁹⁰ Sr	3.70E-04 ± 51%		⁹⁰ Sr	1.70E-04 ± 82%
		²³⁴ U	3.80E-05 ± 50%		²³⁴ U	3.60E-05 ± 50%
		²³⁵ U	1.20E-05 ± 83%		²³⁵ U	1.60E-05 ± 69%
		²³⁸ U	2.40E-05 ± 54%		²³⁸ U	2.40E-05 ± 54%
		⁶⁵ Zn	-1.90E-04 ± 142%		⁶⁵ Zn	-2.70E-04 ± 152%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-F/DR Interim Safe Storage Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-493	6/29/99 - 10/5/99	¹⁴⁴ Ce	4.00E-04 ± 120%	10/5/99 - 12/28/99	¹⁴⁴ Ce	-8.70E-05 ± 1000%
		⁶⁰ Co	-5.80E-05 ± 190%		⁶⁰ Co	8.70E-05 ± 195%
		¹³⁴ Cs	7.70E-05 ± 156%		¹³⁴ Cs	1.20E-04 ± 142%
		¹³⁷ Cs	4.10E-05 ± 268%		¹³⁷ Cs	1.90E-04 ± 89%
		¹⁵² Eu	-5.60E-05 ± 464%		¹⁵² Eu	3.30E-04 ± 130%
		¹⁵⁴ Eu	-5.90E-06 ± 1000%		¹⁵⁴ Eu	1.40E-04 ± 379%
		¹⁵⁵ Eu	-9.60E-06 ± 1000%		¹⁵⁵ Eu	2.40E-06 ± 1000%
		²³⁸ Pu	-5.80E-06 ± 362%		²³⁸ Pu	1.20E-05 ± 233%
		^{239,240} Pu	3.00E-06 ± 250%		^{239,240} Pu	1.00E-05 ± 99%
		¹⁰³ Ru	-1.10E-04 ± 118%		¹⁰³ Ru	-2.00E-05 ± 700%
		¹⁰⁶ Ru	-5.80E-05 ± 1000%		¹⁰⁶ Ru	3.50E-04 ± 429%
		¹²⁵ Sb	-4.60E-05 ± 696%		¹²⁵ Sb	-1.70E-04 ± 218%
		¹¹³ Sn	-3.10E-05 ± 355%		¹¹³ Sn	3.10E-05 ± 516%
		⁹⁰ Sr	3.20E-04 ± 50%		⁹⁰ Sr	9.20E-04 ± 40%
		²³⁴ U	2.80E-05 ± 50%		²³⁴ U	1.50E-05 ± 73%
		²³⁵ U	9.70E-06 ± 77%		²³⁵ U	1.10E-05 ± 82%
		²³⁸ U	1.60E-05 ± 60%		²³⁸ U	1.10E-05 ± 77%
		⁶⁵ Zn	-1.60E-04 ± 163%		⁶⁵ Zn	-2.90E-04 ± 131%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-494	12/29/98 - 3/25/99	¹⁴⁴ Ce	8.60E-05 ± 663%	3/25/99 - 6/30/99	¹⁴⁴ Ce	3.20E-04 ± 219%
		⁶⁰ Co	3.20E-05 ± 375%		⁶⁰ Co	6.30E-05 ± 254%
		¹³⁴ Cs	3.00E-05 ± 433%		¹³⁴ Cs	1.70E-04 ± 88%
		¹³⁷ Cs	-2.70E-05 ± 444%		¹³⁷ Cs	1.10E-05 ± 1000%
		¹⁵² Eu	-3.10E-05 ± 935%		¹⁵² Eu	8.10E-05 ± 420%
		¹⁵⁴ Eu	-1.40E-04 ± 243%		¹⁵⁴ Eu	2.60E-04 ± 162%
		¹⁵⁵ Eu	-1.20E-05 ± 1000%		¹⁵⁵ Eu	5.20E-05 ± 654%
		²³⁸ Pu	1.00E-05 ± 120%		²³⁸ Pu	1.20E-06 ± 100%
		^{239,240} Pu	1.60E-05 ± 69%		^{239,240} Pu	5.90E-06 ± 100%
		¹⁰³ Ru	-7.70E-06 ± 1000%		¹⁰³ Ru	-3.40E-05 ± 382%
		¹⁰⁶ Ru	-8.00E-04 ± 125%		¹⁰⁶ Ru	-7.80E-06 ± 1000%
		¹²⁵ Sb	5.90E-05 ± 475%		¹²⁵ Sb	6.90E-05 ± 464%
		¹¹³ Sn	4.70E-05 ± 277%		¹¹³ Sn	7.10E-06 ± 1000%
		⁹⁰ Sr	4.10E-04 ± 51%		⁹⁰ Sr	1.50E-04 ± 93%
		²³⁴ U	2.80E-05 ± 61%		²³⁴ U	1.90E-05 ± 58%
		²³⁵ U	1.40E-05 ± 86%		²³⁵ U	7.90E-06 ± 82%
		²³⁸ U	2.10E-05 ± 67%		²³⁸ U	2.30E-05 ± 52%
		⁶⁵ Zn	-2.20E-04 ± 118%		⁶⁵ Zn	-4.20E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-494	6/30/99 - 10/6/99	¹⁴⁴ Ce	3.00E-04 ± 170%	10/6/99 - 12/28/99	¹⁴⁴ Ce	1.80E-04 ± 389%
		⁶⁰ Co	-4.30E-06 ± 1000%		⁶⁰ Co	-2.00E-06 ± 1000%
		¹³⁴ Cs	1.80E-05 ± 667%		¹³⁴ Cs	-1.30E-04 ± 108%
		¹³⁷ Cs	8.00E-05 ± 138%		¹³⁷ Cs	2.40E-06 ± 1000%
		¹⁵² Eu	-4.60E-05 ± 630%		¹⁵² Eu	1.40E-04 ± 229%
		¹⁵⁴ Eu	-1.50E-04 ± 213%		¹⁵⁴ Eu	3.30E-04 ± 139%
		¹⁵⁵ Eu	-1.40E-04 ± 221%		¹⁵⁵ Eu	-7.80E-06 ± 1000%
		²³⁸ Pu	-1.30E-05 ± 169%		²³⁸ Pu	3.00E-06 ± 833%
		^{239,240} Pu	3.80E-06 ± 150%		^{239,240} Pu	5.80E-06 ± 110%
		¹⁰³ Ru	8.70E-06 ± 1000%		¹⁰³ Ru	-2.50E-05 ± 480%
		¹⁰⁶ Ru	1.00E-04 ± 920%		¹⁰⁶ Ru	4.30E-04 ± 302%
		¹²⁵ Sb	3.10E-06 ± 1000%		¹²⁵ Sb	1.40E-05 ± 1000%
		¹¹³ Sn	1.50E-05 ± 733%		¹¹³ Sn	-8.80E-07 ± 1000%
		⁹⁰ Sr	1.20E-04 ± 117%		⁹⁰ Sr	8.70E-04 ± 40%
		²³⁴ U	3.30E-05 ± 45%		²³⁴ U	1.20E-05 ± 73%
		²³⁵ U	9.50E-06 ± 69%		²³⁵ U	4.40E-06 ± 150%
		²³⁸ U	2.60E-05 ± 50%		²³⁸ U	1.80E-05 ± 61%
		⁶⁵ Zn	-2.00E-04 ± 120%		⁶⁵ Zn	2.70E-04 ± 152%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

100-F/DR Interim Safe Storage Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-495	12/29/98 - 3/25/99	¹⁴⁴ Ce	6.70E-04 ± 119%	3/25/99 - 6/30/99	¹⁴⁴ Ce	5.20E-05 ± 846%
		⁶⁰ Co	7.00E-05 ± 243%		⁶⁰ Co	-7.50E-05 ± 147%
		¹³⁴ Cs	-2.70E-05 ± 593%		¹³⁴ Cs	-9.60E-06 ± 1000%
		¹³⁷ Cs	-5.90E-05 ± 237%		¹³⁷ Cs	1.00E-04 ± 120%
		¹⁵² Eu	1.00E-04 ± 400%		¹⁵² Eu	-2.60E-05 ± 1000%
		¹⁵⁴ Eu	9.00E-05 ± 500%		¹⁵⁴ Eu	-1.40E-04 ± 257%
		¹⁵⁵ Eu	2.20E-04 ± 182%		¹⁵⁵ Eu	3.40E-05 ± 706%
		²³⁸ Pu	-4.80E-06 ± 313%		²³⁸ Pu	7.30E-06 ± 274%
		^{239,240} Pu	1.40E-05 ± 79%		^{239,240} Pu	-1.20E-06 ± 350%
		¹⁰³ Ru	-1.20E-05 ± 1000%		¹⁰³ Ru	-1.00E-05 ± 1000%
		¹⁰⁶ Ru	2.00E-04 ± 700%		¹⁰⁶ Ru	5.80E-06 ± 1000%
		¹²⁵ Sb	-2.20E-04 ± 168%		¹²⁵ Sb	1.00E-04 ± 250%
		¹¹³ Sn	7.50E-06 ± 1000%		¹¹³ Sn	1.00E-05 ± 1000%
		⁹⁰ Sr	3.70E-04 ± 59%		⁹⁰ Sr	2.60E-04 ± 50%
		²³⁴ U	3.40E-05 ± 56%		²³⁴ U	3.60E-05 ± 44%
		²³⁵ U	2.60E-05 ± 62%		²³⁵ U	5.20E-06 ± 94%
		²³⁸ U	1.70E-05 ± 71%		²³⁸ U	1.00E-05 ± 68%
		⁶⁵ Zn	-2.10E-04 ± 181%		⁶⁵ Zn	-1.90E-05 ± 1000%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-495	6/30/99 - 10/6/99	¹⁴⁴ Ce	3.80E-04 ± 171%	10/6/99 - 12/28/99	¹⁴⁴ Ce	7.70E-04 ± 86%
		⁶⁰ Co	-2.80E-05 ± 464%		⁶⁰ Co	-1.30E-04 ± 108%
		¹³⁴ Cs	-8.20E-06 ± 1000%		¹³⁴ Cs	4.40E-05 ± 341%
		¹³⁷ Cs	1.90E-05 ± 684%		¹³⁷ Cs	2.30E-04 ± 61%
		¹⁵² Eu	5.70E-05 ± 544%		¹⁵² Eu	-5.90E-05 ± 475%
		¹⁵⁴ Eu	1.10E-04 ± 327%		¹⁵⁴ Eu	-2.90E-04 ± 148%
		¹⁵⁵ Eu	2.00E-04 ± 170%		¹⁵⁵ Eu	2.50E-04 ± 108%
		²³⁸ Pu	-8.30E-06 ± 325%		²³⁸ Pu	-1.50E-06 ± 1000%
		^{239,240} Pu	3.30E-06 ± 148%		^{239,240} Pu	1.10E-05 ± 91%
		¹⁰³ Ru	1.20E-04 ± 92%		¹⁰³ Ru	-1.10E-05 ± 900%
		¹⁰⁶ Ru	2.00E-04 ± 500%		¹⁰⁶ Ru	-4.80E-04 ± 229%
		¹²⁵ Sb	-8.10E-05 ± 346%		¹²⁵ Sb	1.10E-04 ± 264%
		¹¹³ Sn	3.30E-05 ± 394%		¹¹³ Sn	-4.50E-05 ± 289%
		⁹⁰ Sr	2.00E-04 ± 70%		⁹⁰ Sr	3.00E-04 ± 97%
		²³⁴ U	2.30E-05 ± 52%		²³⁴ U	2.20E-05 ± 59%
		²³⁵ U	4.00E-06 ± 110%		²³⁵ U	6.10E-06 ± 130%
		²³⁸ U	1.40E-05 ± 63%		²³⁸ U	9.80E-06 ± 91%
		⁶⁵ Zn	2.70E-05 ± 1000%		⁶⁵ Zn	1.70E-04 ± 200%

200 East Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-019	12/29/98 - 6/28/99	⁶⁰ Co	3.40E-05 ± 200%	6/28/99 - 12/27/99	⁶⁰ Co	-5.10E-05 ± 139%
		¹³⁴ Cs	-4.30E-06 ± 1000%		¹³⁴ Cs	8.90E-06 ± 820%
		¹³⁷ Cs	3.30E-05 ± 200%		¹³⁷ Cs	2.90E-04 ± 45%
		¹⁵² Eu	7.40E-05 ± 203%		¹⁵² Eu	-4.10E-05 ± 415%
		¹⁵⁴ Eu	-3.90E-05 ± 487%		¹⁵⁴ Eu	8.80E-05 ± 250%
		¹⁵⁵ Eu	-9.90E-05 ± 162%		¹⁵⁵ Eu	-4.60E-05 ± 413%
		²³⁸ Pu	-2.80E-06 ± 357%		²³⁸ Pu	-6.80E-07 ± 1000%
		^{239,240} Pu	4.90E-06 ± 92%		^{239,240} Pu	2.80E-06 ± 111%
		¹⁰³ Ru	1.70E-05 ± 347%		¹⁰³ Ru	-3.90E-05 ± 159%
		¹⁰⁶ Ru	2.00E-04 ± 300%		¹⁰⁶ Ru	-2.60E-04 ± 238%
		¹²⁵ Sb	-1.90E-05 ± 789%		¹²⁵ Sb	-2.40E-05 ± 667%
		¹¹³ Sn	5.10E-05 ± 139%		¹¹³ Sn	-1.00E-05 ± 750%
		⁹⁰ Sr	1.00E-04 ± 85%		⁹⁰ Sr	2.80E-04 ± 35%
		²³⁴ U	1.90E-05 ± 48%		²³⁴ U	3.00E-05 ± 43%
		²³⁵ U	1.10E-05 ± 60%		²³⁵ U	1.00E-05 ± 60%
		²³⁸ U	1.40E-05 ± 55%		²³⁸ U	1.40E-05 ± 52%
		⁶⁵ Zn	1.10E-04 ± 118%		⁶⁵ Zn	5.20E-05 ± 308%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 East Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-158	12/29/98 - 6/29/99	⁶⁰ Co	2.40E-05 ± 279%	6/29/99 - 12/27/99	⁶⁰ Co	3.60E-06 ± 1000%
		¹³⁴ Cs	5.90E-06 ± 1000%		¹³⁴ Cs	5.80E-05 ± 150%
		¹³⁷ Cs	7.40E-05 ± 100%		¹³⁷ Cs	3.20E-04 ± 41%
		¹⁵² Eu	-8.50E-05 ± 165%		¹⁵² Eu	-4.50E-05 ± 422%
		¹⁵⁴ Eu	-1.00E-04 ± 180%		¹⁵⁴ Eu	-1.40E-06 ± 1000%
		¹⁵⁵ Eu	3.90E-06 ± 1000%		¹⁵⁵ Eu	2.20E-04 ± 100%
		²³⁸ Pu	4.50E-06 ± 169%		²³⁸ Pu	-6.00E-06 ± 160%
		^{239,240} Pu	1.90E-06 ± 147%		^{239,240} Pu	6.40E-05 ± 38%
		¹⁰³ Ru	-9.20E-06 ± 674%		¹⁰³ Ru	-1.40E-08 ± 1000%
		¹⁰⁶ Ru	-6.50E-04 ± 100%		¹⁰⁶ Ru	-1.40E-05 ± 1000%
		¹²⁵ Sb	-3.70E-05 ± 378%		¹²⁵ Sb	1.20E-05 ± 1000%
		¹¹³ Sn	5.00E-06 ± 1000%		¹¹³ Sn	2.20E-06 ± 1000%
		⁹⁰ Sr	2.00E-04 ± 35%		⁹⁰ Sr	2.50E-04 ± 40%
		²³⁴ U	1.10E-05 ± 57%		²³⁴ U	3.80E-05 ± 39%
		²³⁵ U	5.00E-06 ± 82%		²³⁵ U	1.70E-05 ± 52%
		²³⁸ U	8.60E-06 ± 67%		²³⁸ U	2.10E-05 ± 47%
		⁶⁵ Zn	7.50E-05 ± 227%		⁶⁵ Zn	-2.50E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-480	12/29/98 - 6/28/99	²⁴¹ Am	2.20E-05 ± 64%	6/28/99 - 12/27/99	²⁴¹ Am	1.60E-05 ± 81%
		⁶⁰ Co	2.70E-05 ± 230%		⁶⁰ Co	1.60E-05 ± 538%
		¹³⁴ Cs	8.50E-05 ± 74%		¹³⁴ Cs	-7.30E-05 ± 100%
		¹³⁷ Cs	5.60E-05 ± 111%		¹³⁷ Cs	7.80E-05 ± 95%
		¹⁵² Eu	-1.30E-04 ± 108%		¹⁵² Eu	1.10E-04 ± 173%
		¹⁵⁴ Eu	8.70E-05 ± 207%		¹⁵⁴ Eu	2.10E-05 ± 1000%
		¹⁵⁵ Eu	3.90E-05 ± 410%		¹⁵⁵ Eu	-6.90E-05 ± 275%
		²³⁸ Pu	1.80E-06 ± 439%		²³⁸ Pu	1.10E-05 ± 200%
		^{239,240} Pu	1.10E-05 ± 60%		^{239,240} Pu	-1.40E-06 ± 350%
		²⁴¹ Pu	-8.10E-04 ± 506%		²⁴¹ Pu	8.10E-04 ± 25%
		¹⁰³ Ru	1.60E-05 ± 413%		¹⁰³ Ru	-3.00E-05 ± 260%
		¹⁰⁶ Ru	-2.00E-04 ± 260%		¹⁰⁶ Ru	6.30E-04 ± 92%
		¹²⁵ Sb	8.50E-05 ± 165%		¹²⁵ Sb	-3.00E-06 ± 1000%
		¹¹³ Sn	4.50E-05 ± 140%		¹¹³ Sn	-8.50E-07 ± 1000%
		⁹⁰ Sr	2.50E-04 ± 40%		⁹⁰ Sr	7.40E-05 ± 100%
		²³⁴ U	2.70E-05 ± 44%		²³⁴ U	7.40E-06 ± 85%
		²³⁵ U	1.50E-05 ± 53%		²³⁵ U	2.90E-06 ± 110%
		²³⁸ U	2.50E-05 ± 44%		²³⁸ U	1.10E-05 ± 57%
		⁶⁵ Zn	-1.90E-04 ± 100%		⁶⁵ Zn	-5.10E-05 ± 314%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-481	12/29/98 - 6/28/99	²⁴¹ Am	2.90E-05 ± 48%	6/28/99 - 12/27/99	²⁴¹ Am	7.00E-06 ± 157%
		⁶⁰ Co	6.80E-05 ± 140%		⁶⁰ Co	-3.30E-05 ± 179%
		¹³⁴ Cs	4.60E-05 ± 161%		¹³⁴ Cs	-1.90E-05 ± 342%
		¹³⁷ Cs	9.70E-05 ± 74%		¹³⁷ Cs	3.00E-05 ± 200%
		¹⁵² Eu	-9.60E-05 ± 198%		¹⁵² Eu	1.00E-04 ± 140%
		¹⁵⁴ Eu	-5.30E-06 ± 1000%		¹⁵⁴ Eu	-5.20E-05 ± 385%
		¹⁵⁵ Eu	1.50E-04 ± 140%		¹⁵⁵ Eu	2.50E-05 ± 560%
		²³⁸ Pu	2.70E-06 ± 370%		²³⁸ Pu	-1.60E-06 ± 1000%
		^{239,240} Pu	6.80E-06 ± 96%		^{239,240} Pu	1.30E-05 ± 85%
		²⁴¹ Pu	-7.20E-04 ± 306%		²⁴¹ Pu	7.40E-04 ± 24%
		¹⁰³ Ru	2.50E-05 ± 352%		¹⁰³ Ru	-3.90E-05 ± 151%
		¹⁰⁶ Ru	1.90E-04 ± 347%		¹⁰⁶ Ru	-2.40E-04 ± 229%
		¹²⁵ Sb	1.20E-04 ± 142%		¹²⁵ Sb	-1.30E-04 ± 123%
		¹¹³ Sn	6.40E-05 ± 130%		¹¹³ Sn	-5.20E-05 ± 100%
		⁹⁰ Sr	2.80E-04 ± 35%		⁹⁰ Sr	-4.00E-07 ± 1000%
		²³⁴ U	1.20E-05 ± 60%		²³⁴ U	6.30E-06 ± 92%
		²³⁵ U	7.90E-06 ± 65%		²³⁵ U	2.60E-06 ± 150%
		²³⁸ U	7.90E-06 ± 67%		²³⁸ U	1.00E-05 ± 63%
		⁶⁵ Zn	-3.30E-05 ± 545%		⁶⁵ Zn	5.80E-05 ± 259%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 East Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-498	12/29/99 - 6/29/99	⁶⁰ Co	-4.40E-04 ± 100%	6/29/99 - 12/27/99	⁶⁰ Co	4.80E-05 ± 150%
		¹³⁴ Cs	1.70E-04 ± 259%		¹³⁴ Cs	2.30E-05 ± 339%
		¹³⁷ Cs	-3.50E-04 ± 120%		¹³⁷ Cs	2.80E-05 ± 239%
		¹⁵² Eu	-4.10E-04 ± 200%		¹⁵² Eu	-3.20E-06 ± 1000%
		¹⁵⁴ Eu	6.60E-05 ± 1970%		¹⁵⁴ Eu	1.40E-04 ± 143%
		¹⁵⁵ Eu	-1.80E-04 ± 500%		¹⁵⁵ Eu	1.40E-04 ± 129%
		²³⁸ Pu	3.80E-05 ± 161%		²³⁸ Pu	5.90E-06 ± 186%
		^{239,240} Pu	8.60E-06 ± 198%		^{239,240} Pu	6.60E-07 ± 150%
		¹⁰³ Ru	-6.70E-05 ± 552%		¹⁰³ Ru	-1.40E-05 ± 450%
		¹⁰⁶ Ru	-1.10E-03 ± 309%		¹⁰⁶ Ru	7.40E-05 ± 824%
		¹²⁵ Sb	-5.70E-04 ± 151%		¹²⁵ Sb	-7.50E-05 ± 227%
		¹¹³ Sn	-3.10E-04 ± 139%		¹¹³ Sn	-6.40E-05 ± 109%
		⁹⁰ Sr	3.60E-04 ± 306%		⁹⁰ Sr	8.90E-05 ± 90%
		²³⁴ U	8.60E-05 ± 56%		²³⁴ U	1.60E-05 ± 88%
		²³⁵ U	4.10E-05 ± 85%		²³⁵ U	5.70E-06 ± 149%
		²³⁸ U	1.00E-04 ± 58%		²³⁸ U	1.60E-05 ± 88%
		⁶⁵ Zn	-1.20E-03 ± 100%		⁶⁵ Zn	-1.60E-04 ± 119%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-499	12/29/99 - 6/29/99	⁶⁰ Co	-4.40E-04 ± 100%	6/29/99 - 12/27/99	⁶⁰ Co	-2.10E-05 ± 271%
		¹³⁴ Cs	1.70E-04 ± 259%		¹³⁴ Cs	-4.70E-05 ± 119%
		¹³⁷ Cs	-3.50E-04 ± 120%		¹³⁷ Cs	-3.10E-05 ± 171%
		¹⁵² Eu	-4.10E-04 ± 200%		¹⁵² Eu	-1.10E-04 ± 109%
		¹⁵⁴ Eu	6.60E-05 ± 1970%		¹⁵⁴ Eu	-4.80E-05 ± 396%
		¹⁵⁵ Eu	-1.80E-04 ± 500%		¹⁵⁵ Eu	8.40E-05 ± 155%
		²³⁸ Pu	3.80E-05 ± 161%		²³⁸ Pu	-2.80E-06 ± 357%
		^{239,240} Pu	8.60E-06 ± 198%		^{239,240} Pu	6.90E-06 ± 81%
		¹⁰³ Ru	-6.70E-05 ± 552%		¹⁰³ Ru	2.30E-05 ± 230%
		¹⁰⁶ Ru	-1.10E-03 ± 309%		¹⁰⁶ Ru	5.70E-04 ± 119%
		¹²⁵ Sb	-5.70E-04 ± 151%		¹²⁵ Sb	1.50E-06 ± 1000%
		¹¹³ Sn	-3.10E-04 ± 139%		¹¹³ Sn	1.10E-06 ± 1000%
		⁹⁰ Sr	3.60E-04 ± 306%		⁹⁰ Sr	5.50E-05 ± 149%
		²³⁴ U	8.60E-05 ± 56%		²³⁴ U	1.50E-05 ± 53%
		²³⁵ U	4.10E-05 ± 85%		²³⁵ U	6.90E-06 ± 72%
		²³⁸ U	1.00E-04 ± 58%		²³⁸ U	1.50E-05 ± 53%
		⁶⁵ Zn	-1.20E-03 ± 100%		⁶⁵ Zn	-8.90E-05 ± 135%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-957	12/29/98 - 6/29/99	⁶⁰ Co	-7.20E-06 ± 1000%	6/29/99 - 12/27/99	⁶⁰ Co	-1.20E-05 ± 550%
		¹³⁴ Cs	3.20E-05 ± 209%		¹³⁴ Cs	1.40E-05 ± 443%
		¹³⁷ Cs	3.20E-05 ± 219%		¹³⁷ Cs	3.50E-05 ± 171%
		¹⁵² Eu	-6.60E-05 ± 242%		¹⁵² Eu	-1.20E-04 ± 133%
		¹⁵⁴ Eu	-1.00E-05 ± 1000%		¹⁵⁴ Eu	1.30E-05 ± 1000%
		¹⁵⁵ Eu	5.10E-05 ± 353%		¹⁵⁵ Eu	-3.30E-05 ± 515%
		²³⁸ Pu	1.40E-06 ± 450%		²³⁸ Pu	2.40E-06 ± 458%
		^{239,240} Pu	-6.80E-07 ± 456%		^{239,240} Pu	7.90E-07 ± 203%
		¹⁰³ Ru	4.70E-05 ± 170%		¹⁰³ Ru	1.40E-05 ± 400%
		¹⁰⁶ Ru	2.30E-04 ± 278%		¹⁰⁶ Ru	-2.80E-04 ± 189%
		¹²⁵ Sb	5.10E-05 ± 275%		¹²⁵ Sb	-3.50E-05 ± 429%
		¹¹³ Sn	1.30E-05 ± 623%		¹¹³ Sn	4.20E-05 ± 160%
		⁹⁰ Sr	2.30E-04 ± 40%		⁹⁰ Sr	1.70E-04 ± 65%
		²³⁴ U	1.20E-05 ± 54%		²³⁴ U	1.40E-05 ± 63%
		²³⁵ U	3.80E-06 ± 100%		²³⁵ U	3.20E-06 ± 109%
		²³⁸ U	1.60E-05 ± 49%		²³⁸ U	1.50E-05 ± 53%
		⁶⁵ Zn	-8.10E-06 ± 1000%		⁶⁵ Zn	-5.70E-05 ± 211%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 East Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-967	12/29/98 - 6/28/99	⁶⁰ Co	1.80E-05 ± 400%	6/28/99 - 12/27/99	⁶⁰ Co	-1.50E-05 ± 433%
		¹³⁴ Cs	-4.80E-06 ± 1000%		¹³⁴ Cs	-3.50E-05 ± 160%
		¹³⁷ Cs	3.70E-05 ± 200%		¹³⁷ Cs	1.10E-05 ± 509%
		¹⁵² Eu	6.50E-07 ± 1000%		¹⁵² Eu	-6.40E-06 ± 1000%
		¹⁵⁴ Eu	-1.50E-04 ± 180%		¹⁵⁴ Eu	-2.90E-05 ± 586%
		¹⁵⁵ Eu	-3.10E-05 ± 613%		¹⁵⁵ Eu	-4.60E-05 ± 283%
		²³⁸ Pu	-3.20E-06 ± 269%		²³⁸ Pu	-4.60E-06 ± 261%
		^{239,240} Pu	9.50E-06 ± 65%		^{239,240} Pu	5.30E-06 ± 92%
		¹⁰³ Ru	5.30E-05 ± 170%		¹⁰³ Ru	-1.20E-05 ± 458%
		¹⁰⁶ Ru	-7.40E-04 ± 100%		¹⁰⁶ Ru	2.60E-04 ± 200%
		¹²⁵ Sb	4.80E-05 ± 375%		¹²⁵ Sb	7.60E-06 ± 1000%
		¹¹³ Sn	-4.00E-05 ± 210%		¹¹³ Sn	-1.40E-05 ± 450%
		⁹⁰ Sr	1.10E-04 ± 70%		⁹⁰ Sr	-6.80E-06 ± 809%
		²³⁴ U	2.10E-05 ± 45%		²³⁴ U	1.20E-05 ± 60%
		²³⁵ U	1.60E-05 ± 52%		²³⁵ U	4.60E-06 ± 100%
		²³⁸ U	1.20E-05 ± 55%		²³⁸ U	5.60E-06 ± 77%
		⁶⁵ Zn	6.70E-05 ± 284%		⁶⁵ Zn	-4.50E-05 ± 289%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-968	12/29/98 - 6/28/99	⁶⁰ Co	6.60E-05 ± 130%	6/28/99 - 12/27/99	⁶⁰ Co	-1.70E-05 ± 447%
		¹³⁴ Cs	7.10E-05 ± 120%		¹³⁴ Cs	-5.00E-06 ± 1000%
		¹³⁷ Cs	-2.10E-05 ± 362%		¹³⁷ Cs	4.50E-06 ± 1000%
		¹⁵² Eu	-3.90E-06 ± 1000%		¹⁵² Eu	4.40E-06 ± 1000%
		¹⁵⁴ Eu	-1.20E-04 ± 183%		¹⁵⁴ Eu	5.50E-05 ± 364%
		¹⁵⁵ Eu	-1.00E-04 ± 180%		¹⁵⁵ Eu	2.10E-04 ± 95%
		²³⁸ Pu	1.60E-05 ± 75%		²³⁸ Pu	6.50E-07 ± 100%
		^{239,240} Pu	6.40E-06 ± 77%		^{239,240} Pu	6.50E-06 ± 75%
		¹⁰³ Ru	8.60E-06 ± 942%		¹⁰³ Ru	9.10E-06 ± 725%
		¹⁰⁶ Ru	-3.40E-05 ± 1000%		¹⁰⁶ Ru	-3.60E-04 ± 169%
		¹²⁵ Sb	-5.40E-05 ± 296%		¹²⁵ Sb	9.60E-05 ± 156%
		¹¹³ Sn	-6.70E-05 ± 119%		¹¹³ Sn	-3.50E-05 ± 209%
		⁹⁰ Sr	1.10E-04 ± 65%		⁹⁰ Sr	-2.70E-05 ± 259%
		²³⁴ U	1.90E-05 ± 50%		²³⁴ U	1.60E-05 ± 52%
		²³⁵ U	3.20E-06 ± 131%		²³⁵ U	3.60E-06 ± 94%
		²³⁸ U	1.30E-05 ± 56%		²³⁸ U	1.60E-05 ± 51%
		⁶⁵ Zn	-9.30E-05 ± 204%		⁶⁵ Zn	-6.30E-05 ± 238%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-969	12/29/98 - 6/28/99	⁶⁰ Co	-9.10E-05 ± 176%	6/29/99 - 12/27/99	⁶⁰ Co	-1.50E-05 ± 440%
		¹³⁴ Cs	5.00E-05 ± 280%		¹³⁴ Cs	4.70E-05 ± 130%
		¹³⁷ Cs	4.10E-05 ± 341%		¹³⁷ Cs	3.50E-05 ± 180%
		¹⁵² Eu	2.20E-04 ± 132%		¹⁵² Eu	6.40E-05 ± 203%
		¹⁵⁴ Eu	-2.10E-04 ± 190%		¹⁵⁴ Eu	-6.30E-05 ± 286%
		¹⁵⁵ Eu	4.90E-05 ± 735%		¹⁵⁵ Eu	5.70E-06 ± 1000%
		²³⁸ Pu	2.30E-05 ± 74%		²³⁸ Pu	-8.40E-06 ± 143%
		^{239,240} Pu	2.30E-06 ± 291%		^{239,240} Pu	2.60E-06 ± 112%
		¹⁰³ Ru	-2.30E-05 ± 739%		¹⁰³ Ru	-1.60E-06 ± 1000%
		¹⁰⁶ Ru	-2.70E-04 ± 444%		¹⁰⁶ Ru	-3.50E-04 ± 140%
		¹²⁵ Sb	-2.00E-04 ± 150%		¹²⁵ Sb	1.40E-06 ± 1000%
		¹¹³ Sn	-1.50E-04 ± 100%		¹¹³ Sn	-9.50E-06 ± 653%
		⁹⁰ Sr	1.00E-03 ± 25%		⁹⁰ Sr	5.60E-05 ± 161%
		²³⁴ U	1.80E-05 ± 61%		²³⁴ U	6.80E-06 ± 76%
		²³⁵ U	1.30E-06 ± 200%		²³⁵ U	3.00E-06 ± 110%
		²³⁸ U	7.30E-06 ± 88%		²³⁸ U	1.70E-05 ± 50%
		⁶⁵ Zn	-3.90E-04 ± 100%		⁶⁵ Zn	-1.40E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 East Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-970	12/29/98 - 6/29/99	⁶⁰ Co	1.00E-05 ± 790%	6/29/99 - 12/27/99	⁶⁰ Co	-2.90E-05 ± 210%
		¹³⁴ Cs	1.10E-05 ± 736%		¹³⁴ Cs	5.00E-05 ± 130%
		¹³⁷ Cs	9.20E-07 ± 1000%		¹³⁷ Cs	4.20E-05 ± 150%
		¹⁵² Eu	2.60E-05 ± 808%		¹⁵² Eu	1.30E-05 ± 1000%
		¹⁵⁴ Eu	6.80E-05 ± 309%		¹⁵⁴ Eu	1.20E-05 ± 1000%
		¹⁵⁵ Eu	9.80E-05 ± 214%		¹⁵⁵ Eu	1.10E-05 ± 1000%
		²³⁸ Pu	1.70E-06 ± 765%		²³⁸ Pu	7.50E-06 ± 133%
		^{239,240} Pu	7.80E-06 ± 97%		^{239,240} Pu	2.90E-05 ± 41%
		¹⁰³ Ru	3.00E-05 ± 300%		¹⁰³ Ru	-1.90E-05 ± 289%
		¹⁰⁶ Ru	2.10E-04 ± 319%		¹⁰⁶ Ru	-2.30E-04 ± 209%
		¹²⁵ Sb	1.70E-05 ± 1000%		¹²⁵ Sb	8.60E-05 ± 174%
		¹¹³ Sn	-8.00E-05 ± 120%		¹¹³ Sn	-1.80E-05 ± 378%
		⁹⁰ Sr	8.50E-05 ± 91%		⁹⁰ Sr	5.50E-05 ± 95%
		²³⁴ U	2.20E-05 ± 42%		²³⁴ U	1.20E-05 ± 57%
		²³⁵ U	4.30E-06 ± 72%		²³⁵ U	2.10E-06 ± 119%
		²³⁸ U	1.40E-05 ± 47%		²³⁸ U	1.60E-05 ± 51%
		⁶⁵ Zn	-3.00E-04 ± 100%		⁶⁵ Zn	-5.90E-05 ± 203%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-972	12/29/98 - 6/29/99	⁶⁰ Co	-7.30E-06 ± 945%	6/29/99 - 12/27/99	⁶⁰ Co	-2.30E-05 ± 352%
		¹³⁴ Cs	2.40E-05 ± 258%		¹³⁴ Cs	1.30E-05 ± 592%
		¹³⁷ Cs	2.20E-05 ± 268%		¹³⁷ Cs	4.60E-05 ± 170%
		¹⁵² Eu	-1.10E-04 ± 127%		¹⁵² Eu	2.50E-05 ± 800%
		¹⁵⁴ Eu	9.10E-05 ± 176%		¹⁵⁴ Eu	6.20E-05 ± 371%
		¹⁵⁵ Eu	8.60E-06 ± 1000%		¹⁵⁵ Eu	-6.50E-05 ± 277%
		²³⁸ Pu	1.00E-05 ± 95%		²³⁸ Pu	-2.70E-06 ± 370%
		^{239,240} Pu	1.90E-05 ± 50%		^{239,240} Pu	1.20E-05 ± 56%
		¹⁰³ Ru	-4.00E-05 ± 180%		¹⁰³ Ru	1.70E-05 ± 418%
		¹⁰⁶ Ru	1.80E-04 ± 300%		¹⁰⁶ Ru	-2.50E-04 ± 252%
		¹²⁵ Sb	-1.60E-04 ± 100%		¹²⁵ Sb	1.40E-04 ± 129%
		¹¹³ Sn	3.40E-05 ± 200%		¹¹³ Sn	-7.70E-06 ± 1000%
		⁹⁰ Sr	2.20E-04 ± 40%		⁹⁰ Sr	1.40E-05 ± 479%
		²³⁴ U	8.10E-06 ± 62%		²³⁴ U	1.50E-05 ± 51%
		²³⁵ U	3.80E-06 ± 100%		²³⁵ U	2.00E-06 ± 120%
		²³⁸ U	1.30E-05 ± 54%		²³⁸ U	1.90E-05 ± 47%
		⁶⁵ Zn	2.30E-05 ± 522%		⁶⁵ Zn	-1.30E-04 ± 138%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-973	12/29/98 - 6/29/99	⁶⁰ Co	4.70E-05 ± 160%	6/29/99 - 12/27/99	⁶⁰ Co	3.60E-06 ± 1000%
		¹³⁴ Cs	-2.70E-05 ± 300%		¹³⁴ Cs	2.80E-05 ± 229%
		¹³⁷ Cs	7.40E-05 ± 109%		¹³⁷ Cs	6.20E-05 ± 110%
		¹⁵² Eu	1.10E-04 ± 164%		¹⁵² Eu	-9.70E-05 ± 155%
		¹⁵⁴ Eu	-3.70E-05 ± 622%		¹⁵⁴ Eu	1.00E-04 ± 180%
		¹⁵⁵ Eu	1.30E-04 ± 138%		¹⁵⁵ Eu	1.10E-04 ± 164%
		²³⁸ Pu	2.80E-06 ± 429%		²³⁸ Pu	8.90E-06 ± 110%
		^{239,240} Pu	5.70E-06 ± 77%		^{239,240} Pu	1.80E-05 ± 50%
		¹⁰³ Ru	-2.90E-05 ± 310%		¹⁰³ Ru	8.80E-06 ± 693%
		¹⁰⁶ Ru	-3.30E-04 ± 209%		¹⁰⁶ Ru	-1.70E-04 ± 329%
		¹²⁵ Sb	9.70E-06 ± 1000%		¹²⁵ Sb	-8.90E-05 ± 157%
		¹¹³ Sn	-2.40E-05 ± 371%		¹¹³ Sn	3.10E-05 ± 210%
		⁹⁰ Sr	2.80E-04 ± 35%		⁹⁰ Sr	1.20E-04 ± 62%
		²³⁴ U	9.40E-06 ± 60%		²³⁴ U	1.60E-05 ± 50%
		²³⁵ U	1.90E-06 ± 100%		²³⁵ U	1.40E-06 ± 150%
		²³⁸ U	1.20E-05 ± 54%		²³⁸ U	1.00E-05 ± 59%
		⁶⁵ Zn	-3.10E-04 ± 100%		⁶⁵ Zn	-2.40E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 East Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-976	12/29/98 - 6/28/99	⁶⁰ Co	-7.70E-05 ± 130%	6/28/99 - 12/27/99	⁶⁰ Co	7.50E-05 ± 120%
		¹³⁴ Cs	5.20E-05 ± 190%		¹³⁴ Cs	-3.50E-05 ± 209%
		¹³⁷ Cs	7.70E-05 ± 119%		¹³⁷ Cs	3.10E-05 ± 229%
		¹⁵² Eu	1.50E-05 ± 1000%		¹⁵² Eu	3.20E-05 ± 625%
		¹⁵⁴ Eu	1.10E-04 ± 273%		¹⁵⁴ Eu	-2.90E-06 ± 1000%
		¹⁵⁵ Eu	-4.90E-05 ± 510%		¹⁵⁵ Eu	-1.70E-04 ± 112%
		²³⁸ Pu	6.70E-06 ± 194%		²³⁸ Pu	-2.90E-06 ± 448%
		^{239,240} Pu	3.00E-06 ± 110%		^{239,240} Pu	-7.50E-07 ± 347%
		¹⁰³ Ru	-1.70E-05 ± 647%		¹⁰³ Ru	2.00E-05 ± 360%
		¹⁰⁶ Ru	2.50E-04 ± 328%		¹⁰⁶ Ru	-1.70E-04 ± 382%
		¹²⁵ Sb	4.70E-05 ± 447%		¹²⁵ Sb	-1.70E-05 ± 1000%
		¹¹³ Sn	9.40E-06 ± 1000%		¹¹³ Sn	-4.80E-05 ± 179%
		⁹⁰ Sr	1.50E-04 ± 62%		⁹⁰ Sr	2.00E-04 ± 45%
		²³⁴ U	1.80E-05 ± 51%		²³⁴ U	1.00E-05 ± 63%
		²³⁵ U	3.40E-06 ± 94%		²³⁵ U	2.20E-06 ± 118%
		²³⁸ U	1.50E-05 ± 52%		²³⁸ U	1.80E-05 ± 49%
		⁶⁵ Zn	-2.80E-04 ± 100%		⁶⁵ Zn	-2.40E-05 ± 792%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-977	12/29/98 - 6/29/99	⁶⁰ Co	-1.40E-05 ± 550%	6/29/99 - 12/27/99	⁶⁰ Co	4.20E-06 ± 1000%
		¹³⁴ Cs	9.00E-06 ± 822%		¹³⁴ Cs	1.40E-06 ± 1000%
		¹³⁷ Cs	9.40E-05 ± 78%		¹³⁷ Cs	7.20E-05 ± 94%
		¹⁵² Eu	4.40E-05 ± 409%		¹⁵² Eu	-5.60E-05 ± 232%
		¹⁵⁴ Eu	4.10E-05 ± 537%		¹⁵⁴ Eu	1.90E-05 ± 895%
		¹⁵⁵ Eu	2.50E-05 ± 760%		¹⁵⁵ Eu	3.40E-05 ± 412%
		²³⁸ Pu	3.30E-06 ± 200%		²³⁸ Pu	9.30E-06 ± 151%
		^{239,240} Pu	3.30E-06 ± 109%		^{239,240} Pu	3.20E-06 ± 131%
		¹⁰³ Ru	5.10E-05 ± 180%		¹⁰³ Ru	3.90E-05 ± 151%
		¹⁰⁶ Ru	-3.70E-04 ± 181%		¹⁰⁶ Ru	3.60E-04 ± 150%
		¹²⁵ Sb	-3.30E-05 ± 515%		¹²⁵ Sb	-7.20E-05 ± 222%
		¹¹³ Sn	-6.10E-05 ± 149%		¹¹³ Sn	-3.10E-05 ± 190%
		⁹⁰ Sr	3.20E-04 ± 30%		⁹⁰ Sr	4.70E-04 ± 26%
		²³⁴ U	1.60E-05 ± 50%		²³⁴ U	1.50E-05 ± 55%
		²³⁵ U	1.00E-05 ± 59%		²³⁵ U	7.20E-07 ± 100%
		²³⁸ U	8.80E-06 ± 59%		²³⁸ U	1.00E-05 ± 65%
		⁶⁵ Zn	-1.90E-04 ± 100%		⁶⁵ Zn	-1.50E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-978	12/29/98 - 6/29/99	⁶⁰ Co	1.60E-05 ± 519%	6/29/99 - 12/27/99	⁶⁰ Co	2.30E-05 ± 352%
		¹³⁴ Cs	4.90E-05 ± 180%		¹³⁴ Cs	-2.40E-06 ± 1000%
		¹³⁷ Cs	-1.50E-05 ± 447%		¹³⁷ Cs	3.50E-05 ± 209%
		¹⁵² Eu	3.80E-05 ± 474%		¹⁵² Eu	7.10E-05 ± 282%
		¹⁵⁴ Eu	-9.30E-05 ± 237%		¹⁵⁴ Eu	2.90E-05 ± 828%
		¹⁵⁵ Eu	1.30E-04 ± 154%		¹⁵⁵ Eu	-1.30E-04 ± 162%
		²³⁸ Pu	6.30E-07 ± 921%		²³⁸ Pu	-4.40E-06 ± 295%
		^{239,240} Pu	6.20E-06 ± 69%		^{239,240} Pu	4.40E-06 ± 86%
		¹⁰³ Ru	-4.60E-05 ± 239%		¹⁰³ Ru	-1.80E-05 ± 439%
		¹⁰⁶ Ru	-6.60E-05 ± 1000%		¹⁰⁶ Ru	5.80E-04 ± 121%
		¹²⁵ Sb	2.70E-04 ± 67%		¹²⁵ Sb	4.80E-05 ± 396%
		¹¹³ Sn	1.00E-05 ± 920%		¹¹³ Sn	1.00E-05 ± 880%
		⁹⁰ Sr	9.10E-05 ± 82%		⁹⁰ Sr	1.30E-04 ± 72%
		²³⁴ U	1.80E-05 ± 46%		²³⁴ U	1.40E-05 ± 58%
		²³⁵ U	6.90E-06 ± 70%		²³⁵ U	3.50E-06 ± 109%
		²³⁸ U	1.40E-05 ± 49%		²³⁸ U	1.80E-05 ± 53%
		⁶⁵ Zn	5.50E-05 ± 327%		⁶⁵ Zn	-2.50E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 East Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-984	12/29/98 - 6/28/99	⁶⁰ Co	-2.50E-06 ± 1000%	6/28/99 - 12/27/99	⁶⁰ Co	-8.20E-05 ± 100%
		¹³⁴ Cs	1.60E-05 ± 381%		¹³⁴ Cs	9.60E-05 ± 91%
		¹³⁷ Cs	1.30E-04 ± 63%		¹³⁷ Cs	1.40E-04 ± 58%
		¹⁵² Eu	7.80E-05 ± 179%		¹⁵² Eu	4.90E-05 ± 347%
		¹⁵⁴ Eu	-6.80E-05 ± 235%		¹⁵⁴ Eu	-5.90E-05 ± 407%
		¹⁵⁵ Eu	-9.50E-05 ± 168%		¹⁵⁵ Eu	1.80E-05 ± 1000%
		²³⁸ Pu	3.30E-06 ± 179%		²³⁸ Pu	4.20E-06 ± 286%
		^{239,240} Pu	8.30E-06 ± 69%		^{239,240} Pu	4.20E-06 ± 88%
		¹⁰³ Ru	-1.90E-05 ± 421%		¹⁰³ Ru	-3.30E-06 ± 1000%
		¹⁰⁶ Ru	-1.40E-04 ± 393%		¹⁰⁶ Ru	-2.60E-04 ± 262%
		¹²⁵ Sb	-8.70E-05 ± 172%		¹²⁵ Sb	-7.00E-06 ± 1000%
		¹¹³ Sn	-1.30E-05 ± 523%		¹¹³ Sn	-1.90E-05 ± 411%
		⁹⁰ Sr	1.80E-04 ± 50%		⁹⁰ Sr	2.20E-04 ± 41%
		²³⁴ U	1.50E-05 ± 50%		²³⁴ U	1.20E-05 ± 57%
		²³⁵ U	4.70E-06 ± 91%		²³⁵ U	6.00E-06 ± 77%
		²³⁸ U	1.40E-05 ± 53%		²³⁸ U	1.40E-05 ± 54%
		⁶⁵ Zn	-1.80E-04 ± 100%		⁶⁵ Zn	4.40E-05 ± 386%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-985	12/29/98 - 6/29/99	⁶⁰ Co	-8.80E-07 ± 1000%	6/29/99 - 12/27/99	⁶⁰ Co	-3.60E-05 ± 169%
		¹³⁴ Cs	8.10E-05 ± 90%		¹³⁴ Cs	-5.60E-06 ± 1000%
		¹³⁷ Cs	7.20E-05 ± 99%		¹³⁷ Cs	4.20E-05 ± 160%
		¹⁵² Eu	-4.90E-05 ± 306%		¹⁵² Eu	1.10E-05 ± 1000%
		¹⁵⁴ Eu	8.60E-05 ± 244%		¹⁵⁴ Eu	-1.80E-04 ± 111%
		¹⁵⁵ Eu	1.30E-04 ± 123%		¹⁵⁵ Eu	3.10E-05 ± 419%
		²³⁸ Pu	6.70E-06 ± 164%		²³⁸ Pu	1.20E-05 ± 100%
		^{239,240} Pu	9.60E-06 ± 70%		^{239,240} Pu	6.40E-07 ± 1000%
		¹⁰³ Ru	5.60E-05 ± 139%		¹⁰³ Ru	2.60E-05 ± 238%
		¹⁰⁶ Ru	4.70E-05 ± 1000%		¹⁰⁶ Ru	-2.10E-04 ± 271%
		¹²⁵ Sb	-1.10E-04 ± 136%		¹²⁵ Sb	-1.20E-04 ± 142%
		¹¹³ Sn	1.40E-06 ± 1000%		¹¹³ Sn	-6.10E-05 ± 110%
		⁹⁰ Sr	3.10E-04 ± 39%		⁹⁰ Sr	1.70E-04 ± 55%
		²³⁴ U	3.10E-05 ± 45%		²³⁴ U	1.30E-05 ± 58%
		²³⁵ U	9.60E-06 ± 68%		²³⁵ U	4.80E-06 ± 88%
		²³⁸ U	1.20E-05 ± 60%		²³⁸ U	1.50E-05 ± 54%
		⁶⁵ Zn	2.40E-05 ± 750%		⁶⁵ Zn	-3.90E-05 ± 410%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-999	12/29/98 - 6/29/99	⁶⁰ Co	8.50E-07 ± 1000%	6/29/99 - 12/27/99	⁶⁰ Co	-8.10E-06 ± 778%
		¹³⁴ Cs	-9.50E-06 ± 863%		¹³⁴ Cs	4.20E-05 ± 150%
		¹³⁷ Cs	-2.00E-05 ± 360%		¹³⁷ Cs	3.10E-05 ± 200%
		¹⁵² Eu	-1.70E-04 ± 100%		¹⁵² Eu	1.90E-05 ± 684%
		¹⁵⁴ Eu	8.80E-05 ± 295%		¹⁵⁴ Eu	4.30E-06 ± 1000%
		¹⁵⁵ Eu	-2.40E-05 ± 750%		¹⁵⁵ Eu	4.30E-05 ± 302%
		²³⁸ Pu	-6.50E-06 ± 149%		²³⁸ Pu	2.60E-06 ± 300%
		^{239,240} Pu	6.50E-06 ± 89%		^{239,240} Pu	2.60E-06 ± 112%
		¹⁰³ Ru	-4.10E-05 ± 220%		¹⁰³ Ru	1.40E-05 ± 421%
		¹⁰⁶ Ru	-2.50E-04 ± 252%		¹⁰⁶ Ru	-2.40E-04 ± 229%
		¹²⁵ Sb	5.10E-05 ± 294%		¹²⁵ Sb	-4.30E-05 ± 302%
		¹¹³ Sn	6.80E-05 ± 129%		¹¹³ Sn	-1.80E-05 ± 378%
		⁹⁰ Sr	1.70E-04 ± 45%		⁹⁰ Sr	1.90E-04 ± 45%
		²³⁴ U	1.90E-05 ± 58%		²³⁴ U	1.90E-05 ± 50%
		²³⁵ U	4.90E-06 ± 131%		²³⁵ U	1.70E-06 ± 200%
		²³⁸ U	1.70E-05 ± 55%		²³⁸ U	1.20E-05 ± 60%
		⁶⁵ Zn	-1.10E-04 ± 145%		⁶⁵ Zn	-9.90E-05 ± 152%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 West Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-155	12/28/98 - 6/28/99	⁶⁰ Co	-4.90E-05 ± 149%	6/28/99 - 12/27/99	⁶⁰ Co	-3.00E-05 ± 320%
		¹³⁴ Cs	-1.30E-05 ± 623%		¹³⁴ Cs	3.90E-06 ± 1000%
		¹³⁷ Cs	4.30E-04 ± 42%		¹³⁷ Cs	6.00E-04 ± 27%
		¹⁵² Eu	5.20E-05 ± 327%		¹⁵² Eu	2.70E-05 ± 926%
		¹⁵⁴ Eu	-1.80E-04 ± 122%		¹⁵⁴ Eu	-1.60E-05 ± 1000%
		¹⁵⁵ Eu	-1.10E-05 ± 1000%		¹⁵⁵ Eu	7.40E-05 ± 284%
		²³⁸ Pu	-9.60E-06 ± 100%		²³⁸ Pu	-4.70E-06 ± 200%
		^{239,240} Pu	1.10E-05 ± 66%		^{239,240} Pu	9.70E-06 ± 65%
		¹⁰³ Ru	3.10E-05 ± 229%		¹⁰³ Ru	2.20E-06 ± 1000%
		¹⁰⁶ Ru	-4.40E-05 ± 1000%		¹⁰⁶ Ru	1.00E-04 ± 720%
		¹²⁵ Sb	6.90E-05 ± 246%		¹²⁵ Sb	-1.30E-04 ± 154%
		¹¹³ Sn	3.40E-05 ± 259%		¹¹³ Sn	3.40E-05 ± 259%
		⁹⁰ Sr	1.80E-04 ± 45%		⁹⁰ Sr	4.60E-04 ± 30%
		²³⁴ U	1.50E-05 ± 51%		²³⁴ U	4.00E-05 ± 40%
		²³⁵ U	5.40E-06 ± 93%		²³⁵ U	1.70E-05 ± 55%
		²³⁸ U	1.10E-05 ± 58%		²³⁸ U	3.20E-05 ± 44%
		⁶⁵ Zn	2.80E-05 ± 571%		⁶⁵ Zn	-3.30E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-161	12/28/98 - 6/28/99	⁶⁰ Co	1.20E-05 ± 517%	6/28/99 - 12/27/99	⁶⁰ Co	-2.10E-05 ± 300%
		¹³⁴ Cs	3.80E-05 ± 179%		¹³⁴ Cs	1.30E-05 ± 462%
		¹³⁷ Cs	1.10E-04 ± 62%		¹³⁷ Cs	2.00E-05 ± 330%
		¹⁵² Eu	5.70E-05 ± 263%		¹⁵² Eu	-3.70E-05 ± 378%
		¹⁵⁴ Eu	-1.40E-04 ± 129%		¹⁵⁴ Eu	1.30E-04 ± 131%
		¹⁵⁵ Eu	7.30E-05 ± 247%		¹⁵⁵ Eu	1.50E-05 ± 867%
		²³⁸ Pu	-2.80E-06 ± 393%		²³⁸ Pu	-3.00E-06 ± 333%
		^{239,240} Pu	1.00E-04 ± 35%		^{239,240} Pu	1.10E-05 ± 60%
		¹⁰³ Ru	1.50E-06 ± 1000%		¹⁰³ Ru	-5.40E-06 ± 963%
		¹⁰⁶ Ru	-7.50E-05 ± 787%		¹⁰⁶ Ru	2.80E-04 ± 179%
		¹²⁵ Sb	-5.80E-05 ± 241%		¹²⁵ Sb	-5.80E-06 ± 1000%
		¹¹³ Sn	-8.50E-06 ± 871%		¹¹³ Sn	7.20E-06 ± 806%
		⁹⁰ Sr	3.20E-04 ± 31%		⁹⁰ Sr	1.70E-04 ± 51%
		²³⁴ U	1.80E-05 ± 49%		²³⁴ U	2.00E-05 ± 43%
		²³⁵ U	3.50E-06 ± 94%		²³⁵ U	1.40E-05 ± 50%
		²³⁸ U	1.20E-05 ± 56%		²³⁸ U	1.40E-05 ± 48%
		⁶⁵ Zn	-8.00E-05 ± 213%		⁶⁵ Zn	-1.90E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-165	12/28/98 - 6/28/99	⁶⁰ Co	4.30E-05 ± 628%	6/28/99 - 12/27/99	⁶⁰ Co	-2.10E-07 ± 1000%
		¹³⁴ Cs	1.70E-04 ± 159%		¹³⁴ Cs	6.70E-05 ± 130%
		¹³⁷ Cs	2.10E-04 ± 119%		¹³⁷ Cs	1.10E-04 ± 87%
		¹⁵² Eu	-7.50E-05 ± 773%		¹⁵² Eu	-8.20E-05 ± 280%
		¹⁵⁴ Eu	2.40E-04 ± 308%		¹⁵⁴ Eu	4.40E-05 ± 568%
		¹⁵⁵ Eu	1.10E-04 ± 582%		¹⁵⁵ Eu	1.10E-04 ± 191%
		²³⁸ Pu	-1.90E-05 ± 121%		²³⁸ Pu	-3.20E-06 ± 344%
		^{239,240} Pu	6.20E-05 ± 48%		^{239,240} Pu	7.30E-05 ± 36%
		¹⁰³ Ru	-1.10E-04 ± 218%		¹⁰³ Ru	-4.20E-05 ± 169%
		¹⁰⁶ Ru	5.80E-05 ± 1000%		¹⁰⁶ Ru	-1.90E-04 ± 379%
		¹²⁵ Sb	-2.00E-04 ± 290%		¹²⁵ Sb	1.60E-05 ± 1000%
		¹¹³ Sn	1.00E-04 ± 260%		¹¹³ Sn	-1.70E-05 ± 547%
		⁹⁰ Sr	6.20E-04 ± 40%		⁹⁰ Sr	1.50E-04 ± 60%
		²³⁴ U	2.40E-05 ± 71%		²³⁴ U	2.50E-05 ± 44%
		²³⁵ U	6.40E-06 ± 120%		²³⁵ U	1.70E-05 ± 53%
		²³⁸ U	2.10E-05 ± 67%		²³⁸ U	1.50E-05 ± 52%
		⁶⁵ Zn	1.20E-04 ± 508%		⁶⁵ Zn	-1.20E-04 ± 183%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 West Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-168	12/28/98 - 6/28/99	⁶⁰ Co	-2.40E-05 ± 279%	6/28/99 - 12/27/99	⁶⁰ Co	1.70E-04 ± 76%
		¹³⁴ Cs	1.40E-05 ± 400%		¹³⁴ Cs	-1.50E-05 ± 467%
		¹³⁷ Cs	1.70E-04 ± 44%		¹³⁷ Cs	9.20E-05 ± 93%
		¹⁵² Eu	-5.50E-05 ± 236%		¹⁵² Eu	-1.40E-04 ± 121%
		¹⁵⁴ Eu	-1.80E-05 ± 1000%		¹⁵⁴ Eu	-1.60E-04 ± 150%
		¹⁵⁵ Eu	7.60E-06 ± 1000%		¹⁵⁵ Eu	-4.90E-06 ± 1000%
		²³⁸ Pu	1.00E-05 ± 110%		²³⁸ Pu	-2.50E-06 ± 328%
		^{239,240} Pu	8.90E-06 ± 65%		^{239,240} Pu	1.10E-05 ± 58%
		¹⁰³ Ru	-2.50E-05 ± 220%		¹⁰³ Ru	-6.80E-06 ± 985%
		¹⁰⁶ Ru	-1.60E-04 ± 350%		¹⁰⁶ Ru	3.20E-04 ± 219%
		¹²⁵ Sb	-3.10E-05 ± 387%		¹²⁵ Sb	6.10E-05 ± 279%
		¹¹³ Sn	-3.40E-05 ± 179%		¹¹³ Sn	-3.60E-05 ± 219%
		⁹⁰ Sr	1.30E-04 ± 60%		⁹⁰ Sr	3.20E-04 ± 34%
		²³⁴ U	1.40E-05 ± 53%		²³⁴ U	1.80E-05 ± 45%
		²³⁵ U	6.30E-06 ± 73%		²³⁵ U	3.90E-06 ± 85%
		²³⁸ U	1.30E-05 ± 53%		²³⁸ U	1.30E-05 ± 48%
		⁶⁵ Zn	-1.00E-04 ± 140%		⁶⁵ Zn	3.90E-05 ± 462%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-200	12/30/98 - 7/1/99	⁶⁰ Co	9.30E-06 ± 699%	7/1/99 - 12/29/99	⁶⁰ Co	-4.20E-06 ± 1000%
		¹³⁴ Cs	4.80E-05 ± 160%		¹³⁴ Cs	1.00E-05 ± 620%
		¹³⁷ Cs	6.50E-05 ± 98%		¹³⁷ Cs	7.20E-06 ± 819%
		¹⁵² Eu	6.20E-06 ± 1000%		¹⁵² Eu	-1.90E-05 ± 684%
		¹⁵⁴ Eu	1.30E-04 ± 138%		¹⁵⁴ Eu	6.20E-05 ± 306%
		¹⁵⁵ Eu	-6.00E-05 ± 267%		¹⁵⁵ Eu	-9.70E-05 ± 134%
		²³⁸ Pu	1.40E-05 ± 79%		²³⁸ Pu	2.10E-06 ± 571%
		^{239,240} Pu	6.40E-06 ± 70%		^{239,240} Pu	3.40E-06 ± 121%
		¹⁰³ Ru	1.30E-06 ± 1000%		¹⁰³ Ru	4.70E-06 ± 1000%
		¹⁰⁶ Ru	2.10E-04 ± 248%		¹⁰⁶ Ru	-1.20E-04 ± 408%
		¹²⁵ Sb	2.40E-05 ± 542%		¹²⁵ Sb	-7.60E-05 ± 211%
		¹¹³ Sn	2.90E-05 ± 200%		¹¹³ Sn	-1.80E-05 ± 339%
		⁹⁰ Sr	1.00E-04 ± 70%		⁹⁰ Sr	2.10E-04 ± 42%
		²³⁴ U	2.20E-05 ± 45%		²³⁴ U	2.10E-05 ± 48%
		²³⁵ U	3.20E-06 ± 109%		²³⁵ U	1.10E-05 ± 62%
		²³⁸ U	1.60E-05 ± 50%		²³⁸ U	2.20E-05 ± 45%
		⁶⁵ Zn	-1.10E-04 ± 136%		⁶⁵ Zn	9.80E-05 ± 143%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-304	12/28/98 - 6/28/99	⁶⁰ Co	-3.60E-05 ± 219%	6/28/99 - 12/27/99	⁶⁰ Co	-5.10E-05 ± 180%
		¹³⁴ Cs	-3.60E-05 ± 219%		¹³⁴ Cs	4.90E-06 ± 1000%
		¹³⁷ Cs	-1.50E-05 ± 553%		¹³⁷ Cs	4.10E-06 ± 1000%
		¹⁵² Eu	1.00E-04 ± 210%		¹⁵² Eu	-1.60E-04 ± 138%
		¹⁵⁴ Eu	1.90E-04 ± 142%		¹⁵⁴ Eu	-1.30E-05 ± 1000%
		¹⁵⁵ Eu	-1.20E-04 ± 167%		¹⁵⁵ Eu	1.40E-04 ± 150%
		²³⁸ Pu	6.90E-06 ± 159%		²³⁸ Pu	4.20E-06 ± 169%
		^{239,240} Pu	1.30E-05 ± 57%		^{239,240} Pu	4.90E-06 ± 92%
		¹⁰³ Ru	-9.50E-06 ± 895%		¹⁰³ Ru	1.40E-06 ± 1000%
		¹⁰⁶ Ru	5.30E-04 ± 130%		¹⁰⁶ Ru	2.00E-04 ± 300%
		¹²⁵ Sb	-2.00E-04 ± 100%		¹²⁵ Sb	7.70E-05 ± 234%
		¹¹³ Sn	-5.00E-05 ± 190%		¹¹³ Sn	-1.80E-05 ± 489%
		⁹⁰ Sr	8.30E-05 ± 80%		⁹⁰ Sr	2.50E-04 ± 40%
		²³⁴ U	1.60E-05 ± 54%		²³⁴ U	1.40E-05 ± 71%
		²³⁵ U	8.30E-06 ± 67%		²³⁵ U	-1.60E-06 ± 450%
		²³⁸ U	9.10E-06 ± 74%		²³⁸ U	1.50E-05 ± 73%
		⁶⁵ Zn	2.30E-04 ± 61%		⁶⁵ Zn	2.90E-05 ± 793%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 West Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-433	12/28/98 - 6/28/99	⁶⁰ Co	8.70E-05 ± 86%	6/28/99 - 12/27/99	⁶⁰ Co	3.80E-05 ± 211%
		¹³⁴ Cs	-1.20E-05 ± 692%		¹³⁴ Cs	2.10E-05 ± 338%
		¹³⁷ Cs	2.40E-05 ± 300%		¹³⁷ Cs	6.10E-05 ± 120%
		¹⁵² Eu	-1.30E-04 ± 154%		¹⁵² Eu	-5.20E-05 ± 365%
		¹⁵⁴ Eu	-6.10E-05 ± 393%		¹⁵⁴ Eu	-1.30E-04 ± 169%
		¹⁵⁵ Eu	-8.50E-05 ± 212%		¹⁵⁵ Eu	3.90E-05 ± 487%
		²³⁸ Pu	-3.80E-06 ± 221%		²³⁸ Pu	6.10E-07 ± 1000%
		^{239,240} Pu	1.20E-05 ± 59%		^{239,240} Pu	5.50E-06 ± 91%
		¹⁰³ Ru	2.60E-05 ± 269%		¹⁰³ Ru	-2.80E-05 ± 321%
		¹⁰⁶ Ru	-1.10E-04 ± 527%		¹⁰⁶ Ru	2.30E-04 ± 270%
		¹²⁵ Sb	-2.30E-05 ± 696%		¹²⁵ Sb	6.00E-05 ± 283%
		¹¹³ Sn	5.10E-05 ± 161%		¹¹³ Sn	-4.40E-05 ± 200%
		⁹⁰ Sr	4.40E-04 ± 30%		⁹⁰ Sr	8.10E-05 ± 110%
		²³⁴ U	1.10E-05 ± 57%		²³⁴ U	1.20E-05 ± 83%
		²³⁵ U	3.60E-06 ± 94%		²³⁵ U	1.30E-06 ± 100%
		²³⁸ U	6.80E-06 ± 68%		²³⁸ U	1.10E-05 ± 85%
		⁶⁵ Zn	-4.20E-05 ± 429%		⁶⁵ Zn	-7.80E-05 ± 256%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-441	12/28/98 - 6/28/99	⁶⁰ Co	-3.50E-05 ± 189%	6/28/99 - 12/27/99	⁶⁰ Co	1.20E-04 ± 92%
		¹³⁴ Cs	3.20E-05 ± 200%		¹³⁴ Cs	2.70E-05 ± 407%
		¹³⁷ Cs	2.10E-04 ± 57%		¹³⁷ Cs	1.10E-04 ± 100%
		¹⁵² Eu	9.20E-05 ± 163%		¹⁵² Eu	-7.30E-05 ± 315%
		¹⁵⁴ Eu	1.10E-04 ± 136%		¹⁵⁴ Eu	-2.90E-04 ± 110%
		¹⁵⁵ Eu	-1.20E-04 ± 117%		¹⁵⁵ Eu	-4.20E-05 ± 619%
		²³⁸ Pu	3.10E-06 ± 319%		²³⁸ Pu	-1.90E-06 ± 737%
		^{239,240} Pu	9.60E-06 ± 73%		^{239,240} Pu	7.70E-06 ± 92%
		¹⁰³ Ru	1.90E-05 ± 332%		¹⁰³ Ru	2.20E-05 ± 409%
		¹⁰⁶ Ru	1.50E-04 ± 380%		¹⁰⁶ Ru	-8.30E-05 ± 1000%
		¹²⁵ Sb	7.70E-05 ± 195%		¹²⁵ Sb	6.80E-05 ± 324%
		¹¹³ Sn	-1.10E-06 ± 1000%		¹¹³ Sn	-2.70E-05 ± 359%
		⁹⁰ Sr	2.90E-04 ± 41%		⁹⁰ Sr	9.40E-06 ± 1000%
		²³⁴ U	1.60E-05 ± 56%		²³⁴ U	1.50E-05 ± 80%
		²³⁵ U	1.50E-05 ± 59%		²³⁵ U	1.80E-06 ± 350%
		²³⁸ U	2.10E-05 ± 48%		²³⁸ U	8.40E-06 ± 95%
		⁶⁵ Zn	-1.00E-04 ± 160%		⁶⁵ Zn	1.20E-05 ± 1000%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-442	12/28/98 - 6/28/99	⁶⁰ Co	1.20E-05 ± 517%	6/28/99 - 12/27/99	⁶⁰ Co	-2.00E-05 ± 430%
		¹³⁴ Cs	1.20E-05 ± 542%		¹³⁴ Cs	1.80E-05 ± 400%
		¹³⁷ Cs	1.30E-04 ± 58%		¹³⁷ Cs	1.00E-04 ± 99%
		¹⁵² Eu	9.20E-05 ± 163%		¹⁵² Eu	-6.50E-05 ± 246%
		¹⁵⁴ Eu	-5.90E-05 ± 305%		¹⁵⁴ Eu	-1.70E-04 ± 129%
		¹⁵⁵ Eu	-1.90E-04 ± 100%		¹⁵⁵ Eu	1.20E-04 ± 158%
		²³⁸ Pu	-4.50E-06 ± 180%		²³⁸ Pu	3.10E-06 ± 229%
		^{239,240} Pu	1.70E-05 ± 56%		^{239,240} Pu	1.90E-06 ± 121%
		¹⁰³ Ru	1.40E-05 ± 421%		¹⁰³ Ru	4.10E-05 ± 161%
		¹⁰⁶ Ru	4.90E-04 ± 120%		¹⁰⁶ Ru	6.10E-05 ± 1000%
		¹²⁵ Sb	1.30E-05 ± 1000%		¹²⁵ Sb	5.50E-05 ± 273%
		¹¹³ Sn	-2.10E-05 ± 319%		¹¹³ Sn	1.20E-05 ± 600%
		⁹⁰ Sr	3.30E-04 ± 39%		⁹⁰ Sr	6.10E-05 ± 149%
		²³⁴ U	1.90E-05 ± 48%		²³⁴ U	1.20E-05 ± 83%
		²³⁵ U	1.20E-05 ± 54%		²³⁵ U	3.30E-06 ± 252%
		²³⁸ U	8.30E-06 ± 59%		²³⁸ U	7.50E-06 ± 120%
		⁶⁵ Zn	-1.50E-04 ± 100%		⁶⁵ Zn	-1.90E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 West Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-449	12/28/98 - 6/28/99	⁶⁰ Co	2.30E-05 ± 430%	6/28/99 - 12/27/99	⁶⁰ Co	5.90E-06 ± 1000%
		¹³⁴ Cs	4.60E-05 ± 200%		¹³⁴ Cs	4.20E-05 ± 160%
		¹³⁷ Cs	1.10E-04 ± 91%		¹³⁷ Cs	4.70E-05 ± 119%
		¹⁵² Eu	1.40E-04 ± 150%		¹⁵² Eu	-9.30E-08 ± 1000%
		¹⁵⁴ Eu	4.90E-05 ± 592%		¹⁵⁴ Eu	4.50E-05 ± 333%
		¹⁵⁵ Eu	1.30E-05 ± 1000%		¹⁵⁵ Eu	5.50E-05 ± 291%
		²³⁸ Pu	4.90E-06 ± 169%		²³⁸ Pu	1.40E-05 ± 79%
		^{239,240} Pu	2.40E-06 ± 121%		^{239,240} Pu	2.60E-06 ± 112%
		¹⁰³ Ru	6.20E-06 ± 1000%		¹⁰³ Ru	3.90E-05 ± 141%
		¹⁰⁶ Ru	-2.10E-06 ± 1000%		¹⁰⁶ Ru	2.20E-04 ± 241%
		¹²⁵ Sb	1.50E-04 ± 153%		¹²⁵ Sb	6.40E-05 ± 219%
		¹¹³ Sn	-4.50E-05 ± 244%		¹¹³ Sn	-3.50E-06 ± 1000%
		⁹⁰ Sr	4.20E-04 ± 31%		⁹⁰ Sr	1.30E-04 ± 75%
		²³⁴ U	5.40E-06 ± 85%		²³⁴ U	1.90E-05 ± 84%
		²³⁵ U	5.80E-06 ± 72%		²³⁵ U	2.10E-06 ± 100%
		²³⁸ U	4.80E-06 ± 85%		²³⁸ U	4.20E-06 ± 150%
		⁶⁵ Zn	-1.30E-04 ± 177%		⁶⁵ Zn	-1.80E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-456	12/28/98 - 6/28/99	⁶⁰ Co	4.20E-05 ± 181%	6/28/99 - 12/27/99	⁶⁰ Co	-4.20E-05 ± 200%
		¹³⁴ Cs	6.40E-05 ± 120%		¹³⁴ Cs	1.00E-04 ± 76%
		¹³⁷ Cs	1.00E-04 ± 73%		¹³⁷ Cs	8.40E-06 ± 893%
		¹⁵² Eu	-9.40E-05 ± 170%		¹⁵² Eu	-6.00E-06 ± 1000%
		¹⁵⁴ Eu	1.90E-04 ± 100%		¹⁵⁴ Eu	2.40E-05 ± 833%
		¹⁵⁵ Eu	-2.50E-05 ± 680%		¹⁵⁵ Eu	-1.00E-04 ± 200%
		²³⁸ Pu	-2.60E-06 ± 262%		²³⁸ Pu	7.00E-07 ± 100%
		^{239,240} Pu	3.80E-06 ± 100%		^{239,240} Pu	1.40E-06 ± 150%
		¹⁰³ Ru	1.50E-05 ± 520%		¹⁰³ Ru	5.60E-06 ± 1000%
		¹⁰⁶ Ru	-9.30E-05 ± 677%		¹⁰⁶ Ru	-5.30E-06 ± 1000%
		¹²⁵ Sb	2.60E-05 ± 615%		¹²⁵ Sb	-5.50E-06 ± 1000%
		¹¹³ Sn	-8.20E-05 ± 100%		¹¹³ Sn	-1.20E-05 ± 708%
		⁹⁰ Sr	7.00E-05 ± 120%		⁹⁰ Sr	6.30E-05 ± 140%
		²³⁴ U	2.90E-05 ± 41%		²³⁴ U	2.20E-05 ± 91%
		²³⁵ U	9.10E-06 ± 67%		²³⁵ U	-6.80E-06 ± 147%
		²³⁸ U	2.10E-05 ± 47%		²³⁸ U	9.10E-06 ± 176%
		⁶⁵ Zn	-1.20E-04 ± 133%		⁶⁵ Zn	-2.30E-04 ± 100%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-457	12/28/98 - 6/28/99	⁶⁰ Co	-1.40E-05 ± 443%	6/28/99 - 12/27/99	⁶⁰ Co	-4.10E-05 ± 200%
		¹³⁴ Cs	-2.70E-05 ± 241%		¹³⁴ Cs	2.70E-06 ± 1000%
		¹³⁷ Cs	1.20E-04 ± 54%		¹³⁷ Cs	9.10E-05 ± 84%
		¹⁵² Eu	5.50E-06 ± 1000%		¹⁵² Eu	-1.20E-04 ± 158%
		¹⁵⁴ Eu	3.40E-05 ± 441%		¹⁵⁴ Eu	2.10E-06 ± 1000%
		¹⁵⁵ Eu	-9.50E-05 ± 158%		¹⁵⁵ Eu	-6.00E-05 ± 317%
		²³⁸ Pu	-2.10E-06 ± 310%		²³⁸ Pu	2.50E-06 ± 360%
		^{239,240} Pu	2.50E-05 ± 48%		^{239,240} Pu	4.30E-05 ± 40%
		¹⁰³ Ru	-5.60E-06 ± 1000%		¹⁰³ Ru	-8.60E-06 ± 756%
		¹⁰⁶ Ru	-6.80E-05 ± 824%		¹⁰⁶ Ru	5.30E-05 ± 1000%
		¹²⁵ Sb	1.40E-04 ± 93%		¹²⁵ Sb	2.40E-05 ± 708%
		¹¹³ Sn	2.20E-05 ± 300%		¹¹³ Sn	-2.60E-05 ± 300%
		⁹⁰ Sr	6.00E-04 ± 20%		⁹⁰ Sr	1.40E-04 ± 60%
		²³⁴ U	2.20E-05 ± 45%		²³⁴ U	1.20E-05 ± 74%
		²³⁵ U	1.40E-05 ± 53%		²³⁵ U	1.00E-06 ± 350%
		²³⁸ U	1.70E-05 ± 48%		²³⁸ U	9.60E-06 ± 70%
		⁶⁵ Zn	-2.80E-05 ± 464%		⁶⁵ Zn	1.00E-04 ± 190%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 West Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-956	12/28/98 - 6/28/99	⁶⁰ Co	8.30E-06 ± 988%	6/28/99 - 12/27/99	⁶⁰ Co	-2.50E-05 ± 312%
		¹³⁴ Cs	-1.40E-05 ± 550%		¹³⁴ Cs	3.70E-06 ± 1000%
		¹³⁷ Cs	2.50E-04 ± 60%		¹³⁷ Cs	4.90E-04 ± 27%
		¹⁵² Eu	1.50E-04 ± 133%		¹⁵² Eu	4.50E-05 ± 422%
		¹⁵⁴ Eu	5.60E-05 ± 393%		¹⁵⁴ Eu	-6.50E-06 ± 1000%
		¹⁵⁵ Eu	-4.70E-05 ± 404%		¹⁵⁵ Eu	1.70E-04 ± 118%
		²³⁸ Pu	6.10E-06 ± 130%		²³⁸ Pu	7.20E-07 ± 1000%
		^{239,240} Pu	8.90E-06 ± 63%		^{239,240} Pu	1.40E-05 ± 54%
		¹⁰³ Ru	-2.60E-05 ± 300%		¹⁰³ Ru	-6.90E-05 ± 110%
		¹⁰⁶ Ru	-4.90E-04 ± 131%		¹⁰⁶ Ru	5.00E-04 ± 130%
		¹²⁵ Sb	1.80E-05 ± 1000%		¹²⁵ Sb	-8.90E-05 ± 202%
		¹¹³ Sn	-1.00E-05 ± 800%		¹¹³ Sn	-1.20E-05 ± 750%
		⁹⁰ Sr	1.50E-04 ± 55%		⁹⁰ Sr	1.90E-04 ± 50%
		²³⁴ U	3.10E-05 ± 42%		²³⁴ U	1.20E-05 ± 70%
		²³⁵ U	2.70E-05 ± 44%		²³⁵ U	1.50E-06 ± 200%
		²³⁸ U	3.10E-05 ± 42%		²³⁸ U	9.80E-06 ± 66%
		⁶⁵ Zn	1.50E-04 ± 120%		⁶⁵ Zn	6.30E-05 ± 286%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-963	12/28/98 - 6/28/99	⁶⁰ Co	-3.20E-05 ± 241%	6/28/99 - 12/27/99	⁶⁰ Co	3.10E-05 ± 252%
		¹³⁴ Cs	5.90E-05 ± 110%		¹³⁴ Cs	-3.40E-06 ± 1000%
		¹³⁷ Cs	7.10E-05 ± 99%		¹³⁷ Cs	7.10E-05 ± 130%
		¹⁵² Eu	-5.10E-05 ± 275%		¹⁵² Eu	6.20E-05 ± 323%
		¹⁵⁴ Eu	9.90E-05 ± 212%		¹⁵⁴ Eu	4.20E-05 ± 571%
		¹⁵⁵ Eu	-1.40E-05 ± 1000%		¹⁵⁵ Eu	-1.00E-04 ± 190%
		²³⁸ Pu	3.50E-06 ± 343%		²³⁸ Pu	1.10E-05 ± 118%
		^{239,240} Pu	1.20E-05 ± 62%		^{239,240} Pu	8.50E-06 ± 76%
		¹⁰³ Ru	-1.20E-05 ± 667%		¹⁰³ Ru	3.60E-05 ± 211%
		¹⁰⁶ Ru	-5.70E-04 ± 111%		¹⁰⁶ Ru	-2.50E-04 ± 272%
		¹²⁵ Sb	-2.50E-05 ± 640%		¹²⁵ Sb	-7.90E-05 ± 228%
		¹¹³ Sn	-2.50E-05 ± 300%		¹¹³ Sn	8.30E-05 ± 92%
		⁹⁰ Sr	3.60E-04 ± 31%		⁹⁰ Sr	1.40E-06 ± 1000%
		²³⁴ U	1.00E-05 ± 68%		²³⁴ U	1.30E-05 ± 60%
		²³⁵ U	7.90E-06 ± 70%		²³⁵ U	2.30E-06 ± 148%
		²³⁸ U	1.20E-05 ± 61%		²³⁸ U	9.20E-06 ± 63%
		⁶⁵ Zn	-2.00E-05 ± 750%		⁶⁵ Zn	-7.10E-05 ± 239%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-964	12/28/98 - 6/28/99	⁶⁰ Co	-2.80E-06 ± 1000%	6/28/99 - 12/27/99	⁶⁰ Co	3.70E-05 ± 141%
		¹³⁴ Cs	-2.00E-05 ± 320%		¹³⁴ Cs	1.70E-05 ± 388%
		¹³⁷ Cs	1.70E-05 ± 447%		¹³⁷ Cs	3.60E-06 ± 1000%
		¹⁵² Eu	-2.00E-05 ± 650%		¹⁵² Eu	4.00E-06 ± 1000%
		¹⁵⁴ Eu	3.00E-05 ± 567%		¹⁵⁴ Eu	6.80E-05 ± 221%
		¹⁵⁵ Eu	-7.70E-05 ± 208%		¹⁵⁵ Eu	-6.10E-06 ± 1000%
		²³⁸ Pu	3.50E-06 ± 280%		²³⁸ Pu	1.80E-05 ± 78%
		^{239,240} Pu	1.60E-05 ± 52%		^{239,240} Pu	1.80E-05 ± 55%
		¹⁰³ Ru	3.20E-05 ± 269%		¹⁰³ Ru	1.60E-05 ± 363%
		¹⁰⁶ Ru	-3.00E-04 ± 190%		¹⁰⁶ Ru	-1.70E-05 ± 1000%
		¹²⁵ Sb	9.00E-05 ± 144%		¹²⁵ Sb	-5.70E-05 ± 246%
		¹¹³ Sn	-2.30E-06 ± 1000%		¹¹³ Sn	-2.70E-05 ± 241%
		⁹⁰ Sr	1.20E-04 ± 60%		⁹⁰ Sr	4.90E-05 ± 180%
		²³⁴ U	1.30E-05 ± 52%		²³⁴ U	1.80E-05 ± 53%
		²³⁵ U	4.00E-06 ± 83%		²³⁵ U	5.20E-06 ± 87%
		²³⁸ U	1.10E-05 ± 53%		²³⁸ U	1.70E-05 ± 53%
		⁶⁵ Zn	-3.40E-05 ± 412%		⁶⁵ Zn	-3.10E-05 ± 387%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 West Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-965	12/28/98 - 6/28/99	⁶⁰ Co	2.50E-05 ± 340%	6/28/99 - 12/27/99	⁶⁰ Co	1.10E-04 ± 75%
		¹³⁴ Cs	-1.90E-05 ± 447%		¹³⁴ Cs	-7.50E-06 ± 973%
		¹³⁷ Cs	7.20E-05 ± 119%		¹³⁷ Cs	5.30E-05 ± 140%
		¹⁵² Eu	3.20E-05 ± 625%		¹⁵² Eu	-4.70E-06 ± 1000%
		¹⁵⁴ Eu	3.90E-05 ± 615%		¹⁵⁴ Eu	-6.10E-05 ± 344%
		¹⁵⁵ Eu	-1.20E-04 ± 192%		¹⁵⁵ Eu	8.20E-05 ± 232%
		²³⁸ Pu	4.40E-06 ± 250%		²³⁸ Pu	2.60E-06 ± 281%
		^{239,240} Pu	1.10E-05 ± 76%		^{239,240} Pu	1.30E-05 ± 54%
		¹⁰³ Ru	-1.80E-05 ± 550%		¹⁰³ Ru	-4.90E-05 ± 120%
		¹⁰⁶ Ru	1.20E-04 ± 633%		¹⁰⁶ Ru	-2.20E-04 ± 282%
		¹²⁵ Sb	5.90E-05 ± 322%		¹²⁵ Sb	3.70E-05 ± 459%
		¹¹³ Sn	6.30E-06 ± 1000%		¹¹³ Sn	-3.30E-05 ± 261%
		⁹⁰ Sr	2.80E-04 ± 50%		⁹⁰ Sr	-1.30E-05 ± 608%
		²³⁴ U	2.10E-05 ± 52%		²³⁴ U	2.00E-05 ± 50%
		²³⁵ U	1.60E-05 ± 57%		²³⁵ U	5.00E-06 ± 86%
		²³⁸ U	1.50E-05 ± 62%		²³⁸ U	1.00E-05 ± 63%
		⁶⁵ Zn	-2.00E-04 ± 100%		⁶⁵ Zn	-9.70E-05 ± 165%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-966	12/28/98 - 6/28/99	⁶⁰ Co	-3.40E-06 ± 1000%	6/28/99 - 12/27/99	⁶⁰ Co	-2.90E-05 ± 259%
		¹³⁴ Cs	2.60E-05 ± 331%		¹³⁴ Cs	6.60E-05 ± 120%
		¹³⁷ Cs	2.50E-05 ± 300%		¹³⁷ Cs	4.50E-07 ± 1000%
		¹⁵² Eu	1.40E-04 ± 150%		¹⁵² Eu	-8.10E-05 ± 198%
		¹⁵⁴ Eu	-8.70E-05 ± 322%		¹⁵⁴ Eu	1.20E-04 ± 167%
		¹⁵⁵ Eu	1.40E-04 ± 157%		¹⁵⁵ Eu	-1.60E-04 ± 131%
		²³⁸ Pu	-9.40E-07 ± 1000%		²³⁸ Pu	-1.40E-06 ± 621%
		^{239,240} Pu	3.40E-05 ± 44%		^{239,240} Pu	2.90E-05 ± 45%
		¹⁰³ Ru	-5.10E-05 ± 196%		¹⁰³ Ru	-1.90E-06 ± 1000%
		¹⁰⁶ Ru	5.30E-04 ± 140%		¹⁰⁶ Ru	-2.20E-04 ± 300%
		¹²⁵ Sb	-1.20E-04 ± 167%		¹²⁵ Sb	-3.70E-05 ± 432%
		¹¹³ Sn	-4.20E-05 ± 238%		¹¹³ Sn	6.10E-06 ± 1000%
		⁹⁰ Sr	7.80E-05 ± 121%		⁹⁰ Sr	6.20E-05 ± 140%
		²³⁴ U	1.40E-05 ± 49%		²³⁴ U	1.20E-05 ± 66%
		²³⁵ U	5.80E-06 ± 71%		²³⁵ U	5.60E-06 ± 86%
		²³⁸ U	1.10E-05 ± 56%		²³⁸ U	8.30E-06 ± 67%
		⁶⁵ Zn	-6.60E-05 ± 273%		⁶⁵ Zn	-8.80E-05 ± 182%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-974	12/28/98 - 6/28/99	⁶⁰ Co	-2.00E-06 ± 1000%	6/28/99 - 12/27/99	⁶⁰ Co	-9.50E-05 ± 100%
		¹³⁴ Cs	1.70E-05 ± 359%		¹³⁴ Cs	3.10E-06 ± 1000%
		¹³⁷ Cs	4.20E-06 ± 1000%		¹³⁷ Cs	2.90E-05 ± 248%
		¹⁵² Eu	-8.30E-05 ± 157%		¹⁵² Eu	3.90E-05 ± 462%
		¹⁵⁴ Eu	-2.30E-05 ± 826%		¹⁵⁴ Eu	-9.50E-05 ± 211%
		¹⁵⁵ Eu	-1.60E-04 ± 100%		¹⁵⁵ Eu	9.70E-05 ± 186%
		²³⁸ Pu	8.80E-06 ± 110%		²³⁸ Pu	1.90E-06 ± 358%
		^{239,240} Pu	5.20E-06 ± 92%		^{239,240} Pu	1.30E-06 ± 154%
		¹⁰³ Ru	6.20E-06 ± 1000%		¹⁰³ Ru	1.70E-05 ± 388%
		¹⁰⁶ Ru	3.50E-04 ± 140%		¹⁰⁶ Ru	-5.50E-06 ± 1000%
		¹²⁵ Sb	-3.90E-05 ± 333%		¹²⁵ Sb	-4.10E-05 ± 390%
		¹¹³ Sn	-9.80E-05 ± 133%		¹¹³ Sn	-4.20E-05 ± 190%
		⁹⁰ Sr	1.40E-04 ± 61%		⁹⁰ Sr	3.60E-04 ± 31%
		²³⁴ U	8.80E-06 ± 70%		²³⁴ U	1.00E-05 ± 66%
		²³⁵ U	1.40E-06 ± 250%		²³⁵ U	2.80E-06 ± 129%
		²³⁸ U	5.90E-06 ± 73%		²³⁸ U	5.70E-06 ± 74%
		⁶⁵ Zn	-1.50E-04 ± 100%		⁶⁵ Zn	-6.50E-05 ± 292%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

200 West Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-975	12/28/98 - 6/28/99	⁶⁰ Co	-3.90E-05 ± 169%	6/28/99 - 12/27/99	⁶⁰ Co	3.90E-06 ± 1000%
		¹³⁴ Cs	-4.60E-05 ± 139%		¹³⁴ Cs	3.20E-05 ± 200%
		¹³⁷ Cs	1.50E-04 ± 62%		¹³⁷ Cs	4.00E-05 ± 220%
		¹⁵² Eu	-2.10E-05 ± 762%		¹⁵² Eu	-1.60E-05 ± 875%
		¹⁵⁴ Eu	-5.00E-05 ± 440%		¹⁵⁴ Eu	4.70E-05 ± 404%
		¹⁵⁵ Eu	5.50E-05 ± 309%		¹⁵⁵ Eu	-1.00E-04 ± 170%
		²³⁸ Pu	3.10E-06 ± 355%		²³⁸ Pu	6.20E-07 ± 1000%
		^{239,240} Pu	3.90E-05 ± 41%		^{239,240} Pu	1.70E-05 ± 49%
		¹⁰³ Ru	-7.10E-07 ± 1000%		¹⁰³ Ru	1.60E-05 ± 400%
		¹⁰⁶ Ru	-8.90E-05 ± 640%		¹⁰⁶ Ru	-2.90E-05 ± 1000%
		¹²⁵ Sb	5.40E-05 ± 278%		¹²⁵ Sb	-2.20E-04 ± 100%
		¹¹³ Sn	-7.90E-06 ± 975%		¹¹³ Sn	-5.70E-05 ± 119%
		⁹⁰ Sr	1.60E-04 ± 51%		⁹⁰ Sr	1.30E-04 ± 70%
		²³⁴ U	1.60E-05 ± 47%		²³⁴ U	1.30E-05 ± 66%
		²³⁵ U	6.90E-06 ± 62%		²³⁵ U	4.20E-06 ± 100%
		²³⁸ U	7.90E-06 ± 58%		²³⁸ U	1.00E-05 ± 64%
		⁶⁵ Zn	-2.40E-04 ± 100%		⁶⁵ Zn	-1.80E-05 ± 778%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-987	12/28/98 - 6/28/99	⁶⁰ Co	2.20E-05 ± 400%	6/28/99 - 12/27/99	⁶⁰ Co	-3.40E-05 ± 209%
		¹³⁴ Cs	-1.10E-04 ± 100%		¹³⁴ Cs	2.10E-05 ± 348%
		¹³⁷ Cs	2.60E-04 ± 42%		¹³⁷ Cs	2.10E-04 ± 62%
		¹⁵² Eu	1.10E-05 ± 1000%		¹⁵² Eu	-8.40E-05 ± 214%
		¹⁵⁴ Eu	9.50E-06 ± 1000%		¹⁵⁴ Eu	-6.30E-05 ± 333%
		¹⁵⁵ Eu	-2.20E-05 ± 909%		¹⁵⁵ Eu	6.00E-05 ± 300%
		²³⁸ Pu	-5.20E-06 ± 190%		²³⁸ Pu	2.00E-06 ± 450%
		^{239,240} Pu	1.50E-05 ± 62%		^{239,240} Pu	2.00E-06 ± 120%
		¹⁰³ Ru	3.60E-05 ± 278%		¹⁰³ Ru	-2.90E-05 ± 241%
		¹⁰⁶ Ru	-3.70E-04 ± 200%		¹⁰⁶ Ru	-2.40E-04 ± 271%
		¹²⁵ Sb	-2.90E-05 ± 655%		¹²⁵ Sb	-6.40E-05 ± 250%
		¹¹³ Sn	-7.20E-05 ± 139%		¹¹³ Sn	-3.70E-05 ± 241%
		⁹⁰ Sr	5.00E-04 ± 30%		⁹⁰ Sr	2.80E-04 ± 35%
		²³⁴ U	2.10E-05 ± 46%		²³⁴ U	1.10E-05 ± 64%
		²³⁵ U	6.40E-06 ± 80%		²³⁵ U	3.60E-06 ± 111%
		²³⁸ U	1.20E-05 ± 56%		²³⁸ U	1.40E-05 ± 55%
		⁶⁵ Zn	-1.20E-04 ± 142%		⁶⁵ Zn	-8.00E-05 ± 225%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-994	12/28/98 - 6/28/99	⁶⁰ Co	-1.70E-05 ± 471%	6/28/99 - 12/27/99	⁶⁰ Co	6.00E-05 ± 130%
		¹³⁴ Cs	1.30E-05 ± 623%		¹³⁴ Cs	-5.30E-05 ± 140%
		¹³⁷ Cs	6.90E-05 ± 100%		¹³⁷ Cs	-1.20E-06 ± 1000%
		¹⁵² Eu	-2.00E-04 ± 100%		¹⁵² Eu	4.40E-05 ± 386%
		¹⁵⁴ Eu	8.60E-05 ± 279%		¹⁵⁴ Eu	9.30E-05 ± 226%
		¹⁵⁵ Eu	-4.70E-05 ± 404%		¹⁵⁵ Eu	-6.00E-05 ± 317%
		²³⁸ Pu	7.40E-06 ± 120%		²³⁸ Pu	6.10E-06 ± 161%
		^{239,240} Pu	2.80E-06 ± 161%		^{239,240} Pu	6.10E-06 ± 80%
		¹⁰³ Ru	6.10E-05 ± 161%		¹⁰³ Ru	-1.30E-05 ± 600%
		¹⁰⁶ Ru	-3.30E-05 ± 1000%		¹⁰⁶ Ru	3.00E-04 ± 230%
		¹²⁵ Sb	5.80E-05 ± 293%		¹²⁵ Sb	-1.30E-04 ± 123%
		¹¹³ Sn	-1.90E-05 ± 468%		¹¹³ Sn	-3.40E-05 ± 250%
		⁹⁰ Sr	6.70E-06 ± 1000%		⁹⁰ Sr	7.80E-05 ± 110%
		²³⁴ U	1.50E-05 ± 52%		²³⁴ U	1.00E-05 ± 60%
		²³⁵ U	9.40E-06 ± 64%		²³⁵ U	5.10E-06 ± 90%
		²³⁸ U	1.60E-05 ± 48%		²³⁸ U	1.10E-05 ± 64%
		⁶⁵ Zn	-2.30E-04 ± 100%		⁶⁵ Zn	3.60E-05 ± 500%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

600 Area, Air Sampling Results (pCi/m3 ± Overall Analytical Error)

EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-981	12/30/98 - 6/30/99	⁶⁰ Co	3.50E-05 ± 189%	6/30/99 - 12/29/99	⁶⁰ Co	6.70E-06 ± 1000%
		¹³⁴ Cs	1.90E-05 ± 300%		¹³⁴ Cs	5.10E-05 ± 151%
		¹³⁷ Cs	8.20E-06 ± 744%		¹³⁷ Cs	-1.80E-05 ± 422%
		¹⁵² Eu	4.20E-05 ± 310%		¹⁵² Eu	-1.60E-05 ± 1000%
		¹⁵⁴ Eu	-1.20E-04 ± 150%		¹⁵⁴ Eu	1.40E-04 ± 150%
		¹⁵⁵ Eu	1.30E-04 ± 100%		¹⁵⁵ Eu	1.20E-04 ± 158%
		²³⁸ Pu	5.30E-06 ± 149%		²³⁸ Pu	9.80E-06 ± 122%
		^{239,240} Pu	3.90E-06 ± 110%		^{239,240} Pu	1.80E-05 ± 50%
		¹⁰³ Ru	7.90E-06 ± 924%		¹⁰³ Ru	-1.30E-06 ± 1000%
		¹⁰⁶ Ru	4.90E-04 ± 110%		¹⁰⁶ Ru	8.50E-04 ± 78%
		¹²⁵ Sb	-1.30E-05 ± 1000%		¹²⁵ Sb	-1.10E-04 ± 164%
		¹¹³ Sn	2.30E-05 ± 270%		¹¹³ Sn	7.00E-05 ± 130%
		⁹⁰ Sr	8.80E-05 ± 80%		⁹⁰ Sr	1.30E-04 ± 61%
		²³⁴ U	1.80E-05 ± 49%		²³⁴ U	1.30E-05 ± 56%
		²³⁵ U	1.20E-05 ± 56%		²³⁵ U	6.00E-06 ± 77%
		²³⁸ U	2.20E-05 ± 45%		²³⁸ U	1.00E-05 ± 60%
		⁶⁵ Zn	1.80E-05 ± 833%		⁶⁵ Zn	-2.50E-04 ± 100%

Environmental Restoration Disposal Facility, Air Sampling Results (pCi/m3 ± Overall Analytical Error)

EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-482	12/30/98 - 7/1/99	¹⁴⁴ Ce	2.20E-04 ± 191%	7/1/99 - 12/29/99	¹⁴⁴ Ce	2.00E-05 ± 1000%
		⁶⁰ Co	2.80E-05 ± 321%		⁶⁰ Co	1.90E-05 ± 389%
		¹³⁴ Cs	2.90E-05 ± 279%		¹³⁴ Cs	-1.00E-04 ± 100%
		¹³⁷ Cs	1.90E-05 ± 400%		¹³⁷ Cs	3.80E-05 ± 200%
		¹⁵² Eu	4.90E-05 ± 408%		¹⁵² Eu	-1.10E-04 ± 145%
		¹⁵⁴ Eu	3.90E-05 ± 538%		¹⁵⁴ Eu	1.70E-04 ± 112%
		¹⁵⁵ Eu	7.30E-06 ± 1000%		¹⁵⁵ Eu	6.50E-06 ± 1000%
		²³⁸ Pu	4.10E-06 ± 190%		²³⁸ Pu	8.50E-06 ± 118%
		^{239,240} Pu	9.60E-06 ± 63%		^{239,240} Pu	4.10E-06 ± 88%
		¹⁰³ Ru	5.00E-05 ± 200%		¹⁰³ Ru	7.00E-05 ± 130%
		¹⁰⁶ Ru	-2.80E-04 ± 239%		¹⁰⁶ Ru	8.50E-05 ± 953%
		¹²⁵ Sb	7.20E-05 ± 264%		¹²⁵ Sb	1.50E-04 ± 113%
		¹¹³ Sn	-2.70E-05 ± 330%		¹¹³ Sn	-7.00E-06 ± 1000%
		⁹⁰ Sr	2.00E-04 ± 41%		⁹⁰ Sr	5.70E-05 ± 149%
		²³⁴ U	3.40E-05 ± 41%		²³⁴ U	1.60E-05 ± 52%
		²³⁵ U	1.00E-05 ± 64%		²³⁵ U	5.10E-06 ± 82%
		²³⁸ U	2.20E-05 ± 45%		²³⁸ U	2.30E-05 ± 48%
		⁶⁵ Zn	-4.70E-05 ± 404%		⁶⁵ Zn	-1.40E-04 ± 129%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-483	12/30/98 - 7/1/99	¹⁴⁴ Ce	2.40E-04 ± 171%	7/1/99 - 12/29/99	¹⁴⁴ Ce	7.70E-05 ± 325%
		⁶⁰ Co	8.30E-05 ± 95%		⁶⁰ Co	1.20E-05 ± 600%
		¹³⁴ Cs	4.80E-05 ± 171%		¹³⁴ Cs	-8.90E-06 ± 719%
		¹³⁷ Cs	2.00E-05 ± 380%		¹³⁷ Cs	-1.90E-06 ± 1000%
		¹⁵² Eu	2.90E-05 ± 655%		¹⁵² Eu	1.20E-05 ± 1000%
		¹⁵⁴ Eu	-5.70E-05 ± 386%		¹⁵⁴ Eu	4.70E-05 ± 383%
		¹⁵⁵ Eu	-1.40E-04 ± 143%		¹⁵⁵ Eu	7.20E-05 ± 194%
		²³⁸ Pu	6.80E-07 ± 868%		²³⁸ Pu	7.90E-07 ± 1000%
		^{239,240} Pu	4.80E-06 ± 81%		^{239,240} Pu	5.60E-06 ± 91%
		¹⁰³ Ru	-6.80E-05 ± 147%		¹⁰³ Ru	2.20E-04 ± 28%
		¹⁰⁶ Ru	-6.20E-06 ± 1000%		¹⁰⁶ Ru	4.70E-04 ± 119%
		¹²⁵ Sb	-6.20E-05 ± 290%		¹²⁵ Sb	1.40E-04 ± 121%
		¹¹³ Sn	-3.70E-05 ± 259%		¹¹³ Sn	-4.80E-05 ± 140%
		⁹⁰ Sr	2.40E-04 ± 40%		⁹⁰ Sr	-6.50E-05 ± 129%
		²³⁴ U	2.00E-05 ± 49%		²³⁴ U	1.70E-05 ± 50%
		²³⁵ U	5.00E-06 ± 82%		²³⁵ U	9.40E-06 ± 70%
		²³⁸ U	1.80E-05 ± 50%		²³⁸ U	2.60E-05 ± 46%
		⁶⁵ Zn	-2.80E-04 ± 100%		⁶⁵ Zn	-2.60E-05 ± 538%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

Environmental Restoration Disposal Facility, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-484	12/30/98 - 7/1/99	¹⁴⁴ Ce	-1.70E-04 ± 218%	7/1/99 - 12/29/99	¹⁴⁴ Ce	-1.00E-04 ± 250%
		⁶⁰ Co	5.90E-05 ± 131%		⁶⁰ Co	-6.80E-06 ± 926%
		¹³⁴ Cs	6.30E-05 ± 121%		¹³⁴ Cs	2.60E-06 ± 1000%
		¹³⁷ Cs	-1.10E-05 ± 645%		¹³⁷ Cs	5.20E-05 ± 119%
		¹⁵² Eu	-8.20E-05 ± 207%		¹⁵² Eu	-3.80E-05 ± 342%
		¹⁵⁴ Eu	1.10E-04 ± 218%		¹⁵⁴ Eu	9.00E-05 ± 200%
		¹⁵⁵ Eu	7.60E-05 ± 263%		¹⁵⁵ Eu	-4.10E-06 ± 1000%
		²³⁸ Pu	4.10E-06 ± 210%		²³⁸ Pu	1.10E-05 ± 100%
		^{239,240} Pu	3.40E-06 ± 94%		^{239,240} Pu	9.50E-06 ± 63%
		¹⁰³ Ru	-5.50E-05 ± 182%		¹⁰³ Ru	3.90E-06 ± 1000%
		¹⁰⁶ Ru	2.40E-04 ± 279%		¹⁰⁶ Ru	-2.80E-05 ± 1000%
		¹²⁵ Sb	2.70E-05 ± 630%		¹²⁵ Sb	3.40E-05 ± 412%
		¹¹³ Sn	-8.60E-05 ± 110%		¹¹³ Sn	1.70E-05 ± 359%
		⁹⁰ Sr	6.50E-05 ± 120%		⁹⁰ Sr	1.40E-05 ± 600%
		²³⁴ U	3.50E-05 ± 40%		²³⁴ U	1.30E-05 ± 53%
		²³⁵ U	1.40E-05 ± 53%		²³⁵ U	1.40E-06 ± 200%
		²³⁸ U	1.90E-05 ± 49%		²³⁸ U	8.80E-06 ± 68%
		⁶⁵ Zn	-1.60E-04 ± 119%		⁶⁵ Zn	-1.10E-04 ± 127%

200-CW-1 Operable Unit Remedial Investigation Project (Gable Mt. Pond)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-516	Sampler on line: 8/16/99			8/16/99 - 12/14/99	⁶⁰ Co	2.00E-04 ± 220%
					¹³⁴ Cs	-8.20E-06 ± 1000%
					¹³⁷ Cs	-1.30E-04 ± 277%
					¹⁵² Eu	-6.10E-04 ± 130%
					¹⁵⁴ Eu	-8.20E-04 ± 110%
					¹⁵⁵ Eu	-1.00E-04 ± 970%
					²³⁸ Pu	-5.50E-05 ± 120%
					^{239,240} Pu	4.20E-06 ± 452%
					¹⁰³ Ru	-1.90E-04 ± 211%
					¹⁰⁶ Ru	1.30E-04 ± 1000%
					¹²⁵ Sb	-2.30E-04 ± 361%
					¹¹³ Sn	-3.30E-05 ± 1000%
					⁹⁰ Sr	1.70E-04 ± 329%
					²³⁴ U	8.50E-05 ± 56%
					²³⁵ U	3.10E-05 ± 100%
					²³⁸ U	6.80E-05 ± 68%
					⁶⁵ Zn	-8.50E-04 ± 100%

300-FF-1 Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-485	12/30/98 - 6/30/99	¹⁴⁴ Ce	-5.60E-05 ± 429%	6/30/99 - 12/29/99	¹⁴⁴ Ce	2.00E-04 ± 150%
		⁶⁰ Co	3.70E-05 ± 181%		⁶⁰ Co	4.10E-06 ± 1000%
		¹³⁴ Cs	-1.80E-05 ± 350%		¹³⁴ Cs	-1.50E-05 ± 433%
		¹³⁷ Cs	1.10E-05 ± 518%		¹³⁷ Cs	-7.50E-06 ± 800%
		¹⁵² Eu	-3.10E-05 ± 387%		¹⁵² Eu	1.00E-05 ± 1000%
		¹⁵⁴ Eu	-1.20E-04 ± 142%		¹⁵⁴ Eu	-1.60E-04 ± 113%
		¹⁵⁵ Eu	-2.10E-05 ± 619%		¹⁵⁵ Eu	-2.10E-04 ± 100%
		¹⁰³ Ru	-1.90E-05 ± 247%		¹⁰³ Ru	1.80E-05 ± 350%
		¹⁰⁶ Ru	-1.50E-04 ± 380%		¹⁰⁶ Ru	-3.10E-04 ± 181%
		¹²⁵ Sb	9.70E-05 ± 144%		¹²⁵ Sb	8.50E-06 ± 1000%
		¹¹³ Sn	-4.20E-05 ± 140%		¹¹³ Sn	-5.30E-05 ± 130%
		²³⁴ U	1.20E-04 ± 35%		²³⁴ U	2.10E-05 ± 47%
		²³⁵ U	6.00E-05 ± 38%		²³⁵ U	4.90E-06 ± 92%
		²³⁸ U	4.70E-05 ± 40%		²³⁸ U	2.00E-05 ± 48%
		⁶⁵ Zn	-6.20E-05 ± 258%		⁶⁵ Zn	-1.40E-04 ± 100%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

300-FF-1 Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-486	12/30/98 - 6/30/99	¹⁴⁴ Ce	-1.70E-04 ± 147%	6/30/99 - 12/29/99	¹⁴⁴ Ce	-1.90E-04 ± 179%
		⁶⁰ Co	1.20E-05 ± 500%		⁶⁰ Co	2.40E-06 ± 1000%
		¹³⁴ Cs	4.30E-06 ± 1000%		¹³⁴ Cs	-5.90E-06 ± 1000%
		¹³⁷ Cs	-3.30E-05 ± 191%		¹³⁷ Cs	2.60E-05 ± 262%
		¹⁵² Eu	-5.20E-05 ± 288%		¹⁵² Eu	9.80E-05 ± 163%
		¹⁵⁴ Eu	-1.50E-04 ± 120%		¹⁵⁴ Eu	-3.10E-05 ± 677%
		¹⁵⁵ Eu	3.70E-04 ± 78%		¹⁵⁵ Eu	9.60E-05 ± 177%
		¹⁰³ Ru	8.20E-06 ± 634%		¹⁰³ Ru	3.00E-05 ± 220%
		¹⁰⁶ Ru	-6.10E-04 ± 100%		¹⁰⁶ Ru	9.00E-05 ± 656%
		¹²⁵ Sb	4.60E-05 ± 283%		¹²⁵ Sb	2.00E-05 ± 750%
		¹¹³ Sn	1.70E-05 ± 371%		¹¹³ Sn	3.60E-05 ± 189%
		²³⁴ U	2.10E-04 ± 34%		²³⁴ U	2.70E-05 ± 44%
		²³⁵ U	1.00E-04 ± 37%		²³⁵ U	5.50E-06 ± 82%
		²³⁸ U	4.90E-05 ± 41%		²³⁸ U	1.80E-05 ± 50%
		⁶⁵ Zn	-1.10E-04 ± 127%		⁶⁵ Zn	7.30E-05 ± 192%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-487	12/30/98 - 6/30/99	¹⁴⁴ Ce	-2.00E-04 ± 200%	6/30/99 - 12/29/99	¹⁴⁴ Ce	-1.10E-04 ± 209%
		⁶⁰ Co	-2.00E-05 ± 380%		⁶⁰ Co	-3.30E-05 ± 179%
		¹³⁴ Cs	-1.30E-05 ± 562%		¹³⁴ Cs	1.30E-05 ± 469%
		¹³⁷ Cs	7.00E-05 ± 100%		¹³⁷ Cs	1.50E-05 ± 400%
		¹⁵² Eu	-6.40E-06 ± 1000%		¹⁵² Eu	-2.70E-05 ± 481%
		¹⁵⁴ Eu	2.20E-05 ± 1000%		¹⁵⁴ Eu	-3.10E-05 ± 548%
		¹⁵⁵ Eu	-6.30E-05 ± 333%		¹⁵⁵ Eu	-3.80E-06 ± 1000%
		¹⁰³ Ru	3.10E-05 ± 219%		¹⁰³ Ru	-1.60E-05 ± 388%
		¹⁰⁶ Ru	3.70E-04 ± 181%		¹⁰⁶ Ru	2.10E-04 ± 248%
		¹²⁵ Sb	-7.90E-05 ± 215%		¹²⁵ Sb	-4.70E-06 ± 1000%
		¹¹³ Sn	-2.50E-05 ± 312%		¹¹³ Sn	-6.40E-06 ± 1000%
		²³⁴ U	3.70E-04 ± 32%		²³⁴ U	7.70E-05 ± 36%
		²³⁵ U	1.50E-04 ± 35%		²³⁵ U	1.10E-05 ± 60%
		²³⁸ U	1.40E-04 ± 35%		²³⁸ U	7.70E-05 ± 36%
		⁶⁵ Zn	-8.30E-06 ± 1000%		⁶⁵ Zn	-1.10E-04 ± 118%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-488	12/30/98 - 6/30/99	¹⁴⁴ Ce	-1.30E-04 ± 208%	6/30/99 - 12/29/99	¹⁴⁴ Ce	-2.80E-04 ± 100%
		⁶⁰ Co	-2.20E-05 ± 282%		⁶⁰ Co	2.20E-07 ± 1000%
		¹³⁴ Cs	-2.20E-05 ± 282%		¹³⁴ Cs	5.80E-06 ± 966%
		¹³⁷ Cs	-6.60E-06 ± 864%		¹³⁷ Cs	5.50E-05 ± 109%
		¹⁵² Eu	-1.10E-04 ± 127%		¹⁵² Eu	9.70E-05 ± 155%
		¹⁵⁴ Eu	-7.90E-05 ± 215%		¹⁵⁴ Eu	9.00E-05 ± 189%
		¹⁵⁵ Eu	1.00E-04 ± 150%		¹⁵⁵ Eu	8.80E-05 ± 182%
		¹⁰³ Ru	-8.70E-06 ± 644%		¹⁰³ Ru	6.20E-05 ± 100%
		¹⁰⁶ Ru	-5.10E-04 ± 139%		¹⁰⁶ Ru	-1.60E-04 ± 350%
		¹²⁵ Sb	4.80E-06 ± 1000%		¹²⁵ Sb	-1.70E-05 ± 824%
		¹¹³ Sn	5.10E-05 ± 129%		¹¹³ Sn	5.80E-06 ± 1000%
		²³⁴ U	1.20E-04 ± 34%		²³⁴ U	5.70E-05 ± 39%
		²³⁵ U	1.40E-05 ± 55%		²³⁵ U	4.40E-06 ± 86%
		²³⁸ U	9.50E-05 ± 35%		²³⁸ U	4.80E-05 ± 40%
		⁶⁵ Zn	-2.10E-04 ± 100%		⁶⁵ Zn	-5.00E-05 ± 280%

Table 2-2 Near Facility Air Sampling Results, 1999 (cont)

300-FF-1 Remedial Action Project, Air Sampling Results (pCi/m3 ± Overall Analytical Error)						
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-489	12/30/98 - 6/30/99	¹⁴⁴ Ce	-1.90E-05 ± 1000%	6/30/99 - 12/29/99	¹⁴⁴ Ce	8.40E-05 ± 405%
		⁶⁰ Co	-1.10E-05 ± 727%		⁶⁰ Co	5.90E-06 ± 1000%
		¹³⁴ Cs	-3.50E-05 ± 200%		¹³⁴ Cs	6.30E-05 ± 121%
		¹³⁷ Cs	1.00E-05 ± 720%		¹³⁷ Cs	1.60E-04 ± 69%
		¹⁵² Eu	3.10E-05 ± 548%		¹⁵² Eu	-4.30E-05 ± 372%
		¹⁵⁴ Eu	3.60E-06 ± 1000%		¹⁵⁴ Eu	-5.10E-05 ± 412%
		¹⁵⁵ Eu	-3.40E-05 ± 529%		¹⁵⁵ Eu	-6.80E-05 ± 250%
		¹⁰³ Ru	5.60E-06 ± 1000%		¹⁰³ Ru	-3.00E-05 ± 250%
		¹⁰⁶ Ru	-6.30E-05 ± 1000%		¹⁰⁶ Ru	-1.10E-04 ± 645%
		¹²⁵ Sb	-7.00E-05 ± 214%		¹²⁵ Sb	-3.10E-05 ± 581%
		¹¹³ Sn	5.80E-05 ± 121%		¹¹³ Sn	4.10E-06 ± 1000%
		²³⁴ U	8.20E-05 ± 37%		²³⁴ U	4.00E-05 ± 40%
		²³⁵ U	1.20E-05 ± 59%		²³⁵ U	6.20E-06 ± 81%
		²³⁸ U	6.80E-05 ± 35%		²³⁸ U	4.90E-05 ± 39%
		⁶⁵ Zn	3.20E-05 ± 500%		⁶⁵ Zn	-2.00E-05 ± 700%
EDP Code	Composite Period	Isotope	Result ± Error	Composite Period	Isotope	Result ± Error
N-130	12/30/98 - 6/30/99	⁶⁰ Co	-2.00E-06 ± 1000%	6/30/99 - 12/29/99	⁶⁰ Co	-5.20E-05 ± 119%
		¹³⁴ Cs	1.30E-05 ± 623%		¹³⁴ Cs	1.10E-05 ± 545%
		¹³⁷ Cs	6.90E-05 ± 110%		¹³⁷ Cs	-2.80E-05 ± 211%
		¹⁵² Eu	6.00E-05 ± 333%		¹⁵² Eu	1.10E-04 ± 127%
		¹⁵⁴ Eu	-1.60E-04 ± 138%		¹⁵⁴ Eu	2.20E-05 ± 818%
		¹⁵⁵ Eu	-1.20E-04 ± 167%		¹⁵⁵ Eu	-6.20E-05 ± 226%
		²³⁸ Pu	2.50E-06 ± 308%		²³⁸ Pu	2.00E-06 ± 480%
		^{239,240} Pu	1.20E-05 ± 57%		^{239,240} Pu	1.20E-05 ± 56%
		¹⁰³ Ru	-3.00E-05 ± 240%		¹⁰³ Ru	9.70E-06 ± 546%
		¹⁰⁶ Ru	-1.80E-04 ± 372%		¹⁰⁶ Ru	-5.50E-04 ± 100%
		¹²⁵ Sb	-2.50E-04 ± 100%		¹²⁵ Sb	-9.20E-05 ± 163%
		¹¹³ Sn	2.80E-06 ± 1000%		¹¹³ Sn	-5.70E-05 ± 100%
		⁹⁰ Sr	7.60E-05 ± 95%		⁹⁰ Sr	1.40E-04 ± 70%
		²³⁴ U	1.40E-05 ± 50%		²³⁴ U	2.00E-05 ± 50%
		²³⁵ U	9.60E-06 ± 56%		²³⁵ U	3.80E-06 ± 111%
		²³⁸ U	8.20E-06 ± 63%		²³⁸ U	1.60E-05 ± 52%
		⁶⁵ Zn	-2.20E-04 ± 100%		⁶⁵ Zn	-8.20E-05 ± 195%

Table 2-3 Pacific Northwest National Laboratory Air Sampling Data, 1999

Station #28, YAKIMA BARRICADE, Air Sampling Results (pCi/m³ ± Overall Analytical Error)

Composite Period	Isotope	Result ± % Error	Composite Period	Isotope	Result ± % Error
12/30/99 - 4/7/99	⁶⁰ Co	-1.1E-04 ± 265%	4/7/99 - 6/30/99	⁶⁰ Co	2.5E-04 ± 150%
	⁹⁰ Sr	2.3E-05 ± 100%		⁹⁰ Sr	-6.8E-06 ± 264%
	¹⁰⁶ Ru	-1.7E-03 ± 161%		¹⁰⁶ Ru	-5.3E-04 ± 600%
	¹²⁵ Sb	7.5E-04 ± 85%		¹²⁵ Sb	4.5E-04 ± 187%
	¹³⁴ Cs	-2.6E-04 ± 112%		¹³⁴ Cs	-5.3E-04 ± 66%
	¹³⁷ Cs	-1.1E-04 ± 223%		¹³⁷ Cs	-1.1E-04 ± 295%
	¹⁵⁴ Eu	-5.2E-04 ± 179%		¹⁵⁴ Eu	-6.2E-04 ± 157%
	¹⁵⁵ Eu	-1.8E-04 ± 328%		¹⁵⁵ Eu	4.3E-04 ± 153%
	²³⁸ Pu	-1.4E-07 ± 333%		²³⁸ Pu	-1.8E-07 ± 246%
	^{239/240} Pu	7.3E-07 ± 109%		^{239/240} Pu	2.8E-08 ± 1237%
Composite Period	Isotope	Result ± % Error	Composite Period	Isotope	Result ± % Error
6/30/99 - 10/6/99	⁶⁰ Co	-4.1E-05 ± 896%	10/6/99 - 12/29/99	⁶⁰ Co	2.2E-04 ± 168%
	⁹⁰ Sr	1.4E-05 ± 113%		⁹⁰ Sr	5.5E-05 ± 33%
	¹⁰⁶ Ru	-1.4E-03 ± 201%		¹⁰⁶ Ru	-6.3E-04 ± 506%
	¹²⁵ Sb	-5.9E-04 ± 128%		¹²⁵ Sb	3.9E-05 ± 2143%
	¹³⁴ Cs	-3.6E-04 ± 89%		¹³⁴ Cs	-2.5E-04 ± 134%
	¹³⁷ Cs	-6.4E-05 ± 438%		¹³⁷ Cs	-4.9E-05 ± 649%
	¹⁵⁴ Eu	1.7E-04 ± 640%		¹⁵⁴ Eu	1.1E-04 ± 734%
	¹⁵⁵ Eu	-3.0E-04 ± 212%		¹⁵⁵ Eu	4.1E-04 ± 150%
	²³⁸ Pu	2.1E-07 ± 299%		²³⁸ Pu	-3.6E-08 ± 1833%
	^{239/240} Pu	3.7E-07 ± 161%		^{239/240} Pu	9.8E-07 ± 94%

Table 2-3 Pacific Northwest National Laboratory Air Sampling Data, 1999 (cont)

Station #11, 200 West SE, Air Sampling Results (pCi/m³ ± Overall Analytical Error)

Composite Period	Isotope	Result ± % Error	Composite Period	Isotope	Result ± % Error
1/5/99 - 3/31/99	⁶⁰ Co	2.5E-05 ± 2146%	3/31/99 - 7/7/99	⁶⁰ Co	-1.1E-04 ± 463%
	⁹⁰ Sr	1.3E-04 ± 62%		⁹⁰ Sr	-1.9E-05 ± 234%
	¹⁰⁶ Ru	-4.3E-03 ± 134%		¹⁰⁶ Ru	-3.5E-03 ± 130%
	¹²⁵ Sb	1.2E-04 ± 1148%		¹²⁵ Sb	7.6E-05 ± 1715%
	¹³⁴ Cs	7.4E-04 ± 80%		¹³⁴ Cs	-1.7E-04 ± 313%
	¹³⁷ Cs	8.6E-05 ± 639%		¹³⁷ Cs	3.1E-04 ± 163%
	¹⁵⁴ Eu	3.5E-04 ± 551%		¹⁵⁴ Eu	-4.1E-04 ± 343%
	¹⁵⁵ Eu	-2.9E-04 ± 331%		¹⁵⁵ Eu	-1.0E-04 ± 883%
	²³⁴ U	1.5E-05 ± 68%		²³⁴ U	2.0E-05 ± 45%
	²³⁵ U	-1.5E-06 ± 205%		²³⁵ U	-1.7E-06 ± 76%
	²³⁸ U	1.7E-05 ± 60%		²³⁸ U	2.3E-05 ± 42%
	²³⁸ Pu	-9.5E-07 ± 95%		²³⁸ Pu	-4.0E-07 ± 327%
	^{239/240} Pu	2.6E-07 ± 388%		^{239/240} Pu	1.1E-06 ± 158%
Composite Period	Isotope	Result ± % Error			
7/7/99 - 9/27/99	⁶⁰ Co	1.2E-04 ± 576%			
	⁹⁰ Sr	-5.5E-06 ± 1053%			
	¹⁰⁶ Ru	8.5E-04 ± 646%			
	¹²⁵ Sb	1.0E-05 ± 13592%			
	¹³⁴ Cs	-1.6E-04 ± 375%			
	¹³⁷ Cs	1.4E-04 ± 463%			
	¹⁵⁴ Eu	1.4E-03 ± 121%			
	¹⁵⁵ Eu	-5.9E-05 ± 2041%			
	²³⁴ U	2.3E-05 ± 53%			
	²³⁵ U	2.8E-07 ± 1111%			
	²³⁸ Pu	2.4E-05 ± 51%			
	²³⁸ U	1.1E-07 ± 1681%			
	^{239,240} Pu	1.9E-06 ± 131%			

Table 2-3 Pacific Northwest National Laboratory Air Sampling Data, 1999 (cont)

Station #14, 300 TRENCH, Air Sampling Results (pCi/m3 ± Overall Analytical Error)

Composite Period	Isotope	Result ± % Error	Composite Period	Isotope	Result ± % Error
12/30/99 - 4/7/99	⁶⁰ Co	5.5E-05 ± 709%	4/7/99 - 6/30/99	⁶⁰ Co	-1.5E-05 ± 4589%
	¹⁰⁶ Ru	-2.6E-03 ± 172%		¹⁰⁶ Ru	1.8E-03 ± 304%
	¹²⁵ Sb	-7.6E-04 ± 157%		¹²⁵ Sb	2.4E-04 ± 581%
	¹³⁴ Cs	-2.3E-04 ± 235%		¹³⁴ Cs	-5.6E-04 ± 112%
	¹³⁷ Cs	3.3E-04 ± 137%		¹³⁷ Cs	-1.1E-04 ± 476%
	¹⁵⁴ Eu	4.9E-04 ± 264%		¹⁵⁴ Eu	-3.5E-04 ± 452%
	¹⁵⁵ Eu	8.2E-04 ± 109%		¹⁵⁵ Eu	5.0E-04 ± 219%
	²³⁴ U	3.8E-05 ± 40%		²³⁴ U	4.7E-05 ± 32%
	²³⁵ U	2.6E-06 ± 167%		²³⁵ U	2.2E-07 ± 1473%
	²³⁸ U	2.8E-05 ± 43%		²³⁸ U	3.5E-05 ± 37%
Composite Period	Isotope	Result ± % Error	Composite Period	Isotope	Result ± % Error
6/30/99 - 10/6/99	⁶⁰ Co	2.1E-04 ± 254%	10/6/99 - 12/29/99	⁶⁰ Co	2.7E-06 ± 15809%
	¹⁰⁶ Ru	-5.0E-03 ± 113%		¹⁰⁶ Ru	-2.2E-03 ± 205%
	¹²⁵ Sb	-6.3E-04 ± 207%		¹²⁵ Sb	7.2E-04 ± 166%
	¹³⁴ Cs	-2.7E-04 ± 204%		¹³⁴ Cs	3.0E-05 ± 1628%
	¹³⁷ Cs	7.6E-05 ± 672%		¹³⁷ Cs	1.2E-04 ± 400%
	¹⁵⁴ Eu	-1.0E-03 ± 173%		¹⁵⁴ Eu	-1.4E-03 ± 102%
	¹⁵⁵ Eu	1.3E-04 ± 768%		¹⁵⁵ Eu	-3.7E-04 ± 220%
	²³⁴ U	5.8E-05 ± 29%		²³⁴ U	2.0E-05 ± 51%
	²³⁵ U	1.1E-06 ± 330%		²³⁵ U	4.1E-07 ± 947%
	²³⁸ U	4.1E-05 ± 34%		²³⁸ U	1.7E-05 ± 66%
Composite Period	Isotope	Result ± % Error			
12/30/98 - 1/27/99	³ H	1.8E+00 ± 42%			
1/27/99 - 2/24/99	³ H	3.6E+00 ± 27%			
2/24/99 - 3/25/99	³ H	2.8E+00 ± 34%			
3/25/99 - 4/20/99	³ H	3.8E+00 ± 34%			
4/20/99 - 5/19/99	³ H	5.7E+00 ± 21%			
5/19/99 - 6/17/99	³ H	3.2E+00 ± 50%			
6/17/99 - 7/15/99	³ H	1.1E+01 ± 14%			
7/15/99 - 8/11/99	³ H	4.8E+00 ± 31%			
8/11/99 - 9/8/99	³ H	3.8E+00 ± 42%			
9/8/99 - 10/6/99	³ H	2.3E+00 ± 53%			
10/6/99 - 11/3/99	³ H	1.7E+00 ± 51%			
11/3/99 - 12/1/99	³ H	3.4E+00 ± 33%			
12/1/99 - 12/29/99	³ H	4.6E+00 ± 18%			

Table 2-3 Pacific Northwest National Laboratory Air Sampling Data, 1999 (cont)

Station #15, 300 NE, Air Sampling Results (pCi/m³ ± Overall Analytical Error)

Composite Period	Isotope	Result ± % Error	Composite Period	Isotope	Result ± % Error
12/30/98 - 4/7/99	⁶⁰ Co	1.6E-04 ± 327%	4/7/99 - 6/30/99	⁶⁰ Co	2.7E-04 ± 259%
	⁹⁰ Sr	-1.1E-05 ± 229%		⁹⁰ Sr	-5.7E-07 ± 5604%
	¹⁰⁶ Ru	-2.7E-03 ± 180%		¹⁰⁶ Ru	5.3E-03 ± 137%
	¹²⁵ Sb	-6.1E-04 ± 180%		¹²⁵ Sb	2.1E-05 ± 8057%
	¹³⁴ Cs	-4.3E-05 ± 1168%		¹³⁴ Cs	-3.9E-04 ± 191%
	¹³⁷ Cs	-6.2E-05 ± 712%		¹³⁷ Cs	5.3E-04 ± 138%
	¹⁵⁴ Eu	3.9E-04 ± 331%		¹⁵⁴ Eu	1.6E-04 ± 1420%
	¹⁵⁵ Eu	-3.1E-04 ± 292%		¹⁵⁵ Eu	6.1E-04 ± 197%
	²³⁴ U	8.5E-05 ± 31%		²³⁴ U	8.5E-05 ± 25%
	²³⁵ U	-9.0E-07 ± 365%		²³⁵ U	3.3E-07 ± 879%
	²³⁸ U	9.2E-05 ± 29%		²³⁸ U	8.2E-05 ± 24%
	²³⁸ Pu	3.7E-07 ± 216%		²³⁸ Pu	5.1E-08 ± 1518%
	^{239,240} Pu	1.7E-06 ± 77%		^{239,240} Pu	1.3E-06 ± 111%
Composite Period	Isotope	Result ± % Error	Composite Period	Isotope	Result ± % Error
6/30/99 - 10/6/99	⁶⁰ Co	6.3E-05 ± 1008%	10/6/99 - 12/29/99	⁶⁰ Co	3.9E-04 ± 161%
	⁹⁰ Sr	-9.6E-06 ± 251%		⁹⁰ Sr	1.6E-04 ± 37%
	¹⁰⁶ Ru	7.7E-04 ± 571%		¹⁰⁶ Ru	3.6E-03 ± 140%
	¹²⁵ Sb	-8.9E-05 ± 1348%		¹²⁵ Sb	9.9E-04 ± 121%
	¹³⁴ Cs	-3.1E-04 ± 154%		¹³⁴ Cs	2.9E-05 ± 1815%
	¹³⁷ Cs	-3.2E-04 ± 149%		¹³⁷ Cs	-3.6E-04 ± 160%
	¹⁵⁴ Eu	-1.1E-03 ± 155%		¹⁵⁴ Eu	9.6E-04 ± 187%
	¹⁵⁵ Eu	2.0E-04 ± 435%		¹⁵⁵ Eu	3.0E-04 ± 373%
	²³⁴ U	5.3E-05 ± 32%		²³⁴ U	6.2E-05 ± 29%
	²³⁵ U	2.5E-06 ± 150%		²³⁵ U	1.6E-06 ± 248%
	²³⁸ U	5.6E-05 ± 30%		²³⁸ U	4.7E-05 ± 32%
	²³⁸ Pu	-8.5E-07 ± 80%		²³⁸ Pu	-1.9E-07 ± 290%
	^{239,240} Pu	6.4E-07 ± 171%		^{239,240} Pu	9.5E-08 ± 556%
Composite Period	Isotope	Result ± % Error			
12/30/98 - 1/27/99	³ H	3.0E+00 ± 37%			
1/27/99 - 2/24/99	³ H	4.2E+00 ± 26%			
3/2/99 - 3/25/99	³ H	3.0E+00 ± 22%			
3/25/99 - 4/20/99	³ H	3.5E+00 ± 40%			
4/20/99 - 5/19/99	³ H	5.5E+00 ± 18%			
5/19/99 - 6/17/99	³ H	2.8E+00 ± 39%			
6/17/99 - 7/15/99	³ H	5.3E+00 ± 25%			
7/15/99 - 8/11/99	³ H	6.1E+00 ± 30%			
8/11/99 - 9/8/99	³ H	7.3E+00 ± 26%			
9/8/99 - 10/6/99	³ H	3.9E+00 ± 39%			
10/6/99 - 11/3/99	³ H	1.7E+00 ± 72%			
11/3/99 - 12/1/99	³ H	3.2E+00 ± 23%			
12/1/99 - 12/29/99	³ H	1.0E+01 ± 13%			

3.0 GROUNDWATER MONITORING

Groundwater sampling was not conducted by the Near-Facility Environmental Monitoring program in 1999.

Groundwater monitoring at the Hanford Site is integrated through the Groundwater/Vadose Zone Integration project as described in the *Hanford Site Groundwater Protection Management Plan* (RL 1994). This plan integrates monitoring at active waste disposal facilities to comply with monitoring requirements of the *Resources Conservation and Recovery Act of 1976* (RCRA) and Washington State regulations, as well as requirements for operational monitoring around reactor and chemical processing facilities, and environmental surveillance monitoring. Pacific Northwest National Laboratory manages these monitoring efforts through the Groundwater Monitoring Project. This project is responsible for assessing the distribution and movement of existing groundwater contamination, identifying potential and emerging groundwater contamination problems, and integrating the various groundwater projects to minimize redundancy. Summary results for 1999 are discussed in PNNL-13230, Section 6.1, "Hanford Groundwater Monitoring Project."

Information on groundwater contaminant distribution and transport are integrated into a site-wide evaluation of groundwater quality, which is documented in an annual groundwater monitoring report (Hartman 2000). Groundwater monitoring is also carried out during cleanup investigations under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA). These investigations are managed by the Environmental Restoration Contractor.

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4.0 SOIL AND VEGETATION MONITORING

The radionuclide content of soil and vegetation was measured to evaluate long-term trends in environmental accumulation of radioactivity in the 100, 200/600, and 300/400 Areas. Soil and vegetation samples were collected on or near facilities that store, handle, or dispose of radioactive waste. The number of soil and vegetation samples collected in 1999 and their locations are shown in Table 4-1.

Table 4-1 Soil and Vegetation Samples and Locations, 1999

Sample Type	Number of Sample Locations	Operational Area						
		100-B,C	100-D,DR	100-H	100-N	ERDF ^(a)	200/600	300/400
Soil	83	2	2	2	5	1	58	13
Vegetation	70	0	0	0	10	0	47	13

a – Environmental Restoration Disposal Facility.

Soil sampling locations are illustrated in Figures 4-1 through 4-9. Historical results for 100-N Area soil sampling are displayed in Tables 4-2 and 4-3. The 1999 soil sampling results for all areas are provided in Tables 4-4 through 4-7.

Vegetation sampling locations are illustrated in Figures 4-10 through 4-15. Historical results for 100-N Area and N-Springs shoreline vegetation sampling are displayed in Tables 4-8 through 4-10. The 1999 vegetation sampling results for all areas are provided in Tables 4-11 through 4-13.

Radionuclide analyses indicated that cobalt-60, strontium-90, cesium-137, plutonium-239,240, and uranium were consistently detectable in both soil and vegetation samples in 1999. Generally, the predominant radionuclides observed in soil samples were activation products and strontium-90 in the 100-N Area, fission products in the 200 Areas, and uranium in the 300 Area. For vegetation samples, the predominant radionuclides were generally activation and fission products in the 100 Areas, fission products in the 200 Areas, and uranium in the 300 Area.

Additional discussion of the 1999 results can be found in Section 3.2 of the *Hanford Site Environmental Report for Calendar Year 1999* (PNNL-13230).

Figure 4-1 1999 Soil Sampling Locations, 100-B/C Area

Figure 4-2 1999 Soil Sampling Locations, 100-D/DR Area

Figure 4-3 1999 Soil Sampling Locations, 100-H Area

Figure 4-4 1999 Soil Sampling Locations, 100-N Area

Figure 4-5 1999 Soil Sampling Locations, 200 East Area

WMN/EMI/8-98/FIG-2

Figure 4-6 1999 Soil Sampling Locations, 200 West Area

WMNW/EMI/IS-99/FIGE-3

Figure 4-7 1999 Soil Sampling Locations, 600 Area

WMNW/EMI/7-98/FIG-4

Figure 4-8 1999 Soil Sampling Locations, 300 Area

Figure 4-9 1999 Soil Sampling Locations, 400 Area

Table 4-2 Historical Average of Selected Radionuclide Concentrations Detected in Soil Samples Near the 1301-N Liquid Waste Disposal Facility (pCi/g)

Year	⁶⁰ Co	⁹⁰ Sr	¹³⁷ Cs	²³⁸ Pu	^{239,240} Pu
1980	1.3 E+01	3.5 E-01	4.1 E+00	NR	2.5 E-02
1981	4.0 E+00	7.0 E-01	6.1 E+00	NR	4.4 E-02
1982	6.3 E+00	2.7 E-01	2.7 E+00	NR	1.8 E-02
1983	5.4 E+00	1.3 E+00	3.8 E+00	NR	4.3 E-02
1984	2.8 E+00	2.1 E-01	1.1 E+00	NR	1.7 E-02
1985	1.3 E+01	6.5 E-01	3.9 E+00	NR	3.2 E-02
1986	4.5 E+00	2.2 E-01	2.5 E+00	NR	1.7 E-02
1987	5.1 E+00	3.4 E-01	1.6 E+00	5.4 E-03	2.2 E-02
1988	7.8 E+00	3.5 E-01	2.0 E+00	2.3 E-03	1.7 E-02
1989	2.3 E+00	1.5 E-01	5.0 E-01	6.4 E-03	4.0 E-02
1990	4.7 E+00	3.2 E-01	1.7 E+00	4.6 E-03	3.5 E-02
1991	1.3 E+01	2.7 E-01	1.3 E+00	7.7 E-03	5.3 E-02
1992	6.7 E+00	2.2 E-01	1.1 E+00	3.5 E-03	2.3 E-02
1993	1.0 E+00	8.7 E-01	6.2 E+00	1.3 E-02	6.9 E-02
1994	3.7 E+00	3.3 E-01	1.5 E+00	9.3 E-03	2.8 E-02
1995	2.1 E+00	1.5 E-01	7.7 E-01	2.0 E-03	1.0 E-02
1996	2.5 E+00	2.3 E-01	9.8 E-01	5.4 E-02	4.8 E-02
1997	4.3 E+00	5.8 E+00	1.5 E+00	2.2 E-01	9.8 E-01
1998	8.5 E+00	1.6 E+00	5.2 E+00	5.7 E-02	1.9E-01
1999	8.1 E-01	1.4 E+00	1.3 E+00	<1.3 E-02	1.7 E-02

ND = Not Detected.

NR = Not Reported.

**Table 4-3 Historical Average of Selected Radionuclide Concentrations
Detected in Soil Samples in the 100-N Area (pCi/g)**

Year	⁶⁰ Co	⁹⁰ Sr	¹³⁷ Cs	²³⁸ Pu	^{239,240} Pu
1980	8.5 E-01	1.8 E-01	5.0 E-01	NR	1.8 E-02
1981	1.3 E+00	2.1 E-01	1.0 E+00	NR	1.1 E-02
1982	1.6 E+00	9.9 E-02	3.4 E-01	NR	5.0 E-03
1983	2.7 E+00	2.9 E-01	4.4 E-01	NR	8.5 E-03
1984	8.8 E-01	2.8 E-01	6.2 E-01	NR	1.4 E-02
1985	1.2 E+00	1.3 E-01	5.2 E-01	NR	1.3 E-02
1986	4.1 E-01	8.3 E-02	5.0 E-01	NR	8.2 E-03
1987	4.1 E-01	1.1 E-01	3.9 E-01	1.1 E-03	6.7 E-03
1988	3.4 E-01	1.6 E-01	3.9 E-01	4.5 E-04	9.5 E-03
1989	1.4 E-01	2.1 E-01	1.3 E-01	1.1 E-03	1.3 E-02
1990	3.0 E-01	1.2 E-01	4.4 E-01	6.7 E-04	1.0 E-02
1991	4.3 E-01	1.1 E-01	4.5 E-01	6.2 E-04	7.8 E-03
1992	8.6 E-02	9.5 E-02	3.6 E-01	5.1 E-04	7.6 E-03
1993	3.0 E-02	1.2 E-01	1.6 E-01	1.8 E-04	3.4 E-03
1994	1.6 E+00	1.9 E-01	8.1 E-01	4.2 E-03	1.6 E-02
1995	9.4 E-01	1.3 E-01	5.1 E-01	1.9 E-03	1.4 E-02
1996	1.5 E+00	2.0 E-01	7.7 E-01	1.2 E-02	4.3 E-02
1997	2.5 E+00	3.9 E+00	8.9 E-01	7.8 E-01	9.1 E-01
1998	4.9 E+00	1.2 E+00	3.1 E+00	5.7 E-02	1.5 E-01
1999	1.6 E+00	2.0 E+00	8.4 E-01	<1.1E-02	2.9 E-02

ND = Not Detected.

NR = Not Reported.

Table 4-4 1999 Soil Sampling Results, 100-N Area (pCi/g $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error
Y602	⁶⁰ Co	1.0E+00 $\pm$ 8%
	⁶⁵ Zn	5.5E-03 $\pm$ 382%
	⁹⁰ Sr	3.2E-01 $\pm$ 66%
	¹⁰³ Ru	9.8E-04 $\pm$ 837%
	¹⁰⁶ Ru	2.3E-02 $\pm$ 248%
	¹¹³ Sn	-5.1E-03 $\pm$ 171%
	¹²⁵ Sb	9.1E-03 $\pm$ 176%
	¹³⁴ Cs	3.8E-02 $\pm$ 37%
	¹³⁷ Cs	1.0E-01 $\pm$ 19%
	¹⁴⁴ Ce	1.9E-02 $\pm$ 242%
	¹⁵² Eu	-1.2E-03 $\pm$ 1000%
	¹⁵⁴ Eu	-2.2E-03 $\pm$ 864%
	¹⁵⁵ Eu	-6.0E-03 $\pm$ 383%
	²³⁴ U	2.3E-01 $\pm$ 35%
	²³⁵ U	1.8E-02 $\pm$ 72%
	²³⁸ U	2.0E-01 $\pm$ 35%
	²³⁸ Pu	-4.8E-03 $\pm$ 500%
	^{239,240} Pu	1.4E-02 $\pm$ 86%

Location	Isotope	Result $\pm$ Error
Y603	⁶⁰ Co	6.1E+00 $\pm$ 8%
	⁶⁵ Zn	-6.6E-03 $\pm$ 515%
	⁹⁰ Sr	6.1E+00 $\pm$ 15%
	¹⁰³ Ru	-2.3E-03 $\pm$ 609%
	¹⁰⁶ Ru	-4.7E-02 $\pm$ 200%
	¹¹³ Sn	-2.7E-03 $\pm$ 519%
	¹²⁵ Sb	2.5E-03 $\pm$ 1000%
	¹³⁴ Cs	1.2E-02 $\pm$ 108%
	¹³⁷ Cs	1.3E+00 $\pm$ 14%
	¹⁴⁴ Ce	4.3E-02 $\pm$ 160%
	¹⁵² Eu	-2.1E-02 $\pm$ 138%
	¹⁵⁴ Eu	5.4E-02 $\pm$ 54%
	¹⁵⁵ Eu	5.1E-02 $\pm$ 75%
	²³⁴ U	1.5E-01 $\pm$ 37%
	²³⁵ U	1.2E-02 $\pm$ 82%
	²³⁸ U	1.4E-01 $\pm$ 38%
	²³⁸ Pu	-1.6E-03 $\pm$ 1000%
	^{239,240} Pu	6.8E-02 $\pm$ 43%

Location	Isotope	Result $\pm$ Error
Y604	⁶⁰ Co	6.2E-01 $\pm$ 8%
	⁶⁵ Zn	2.6E-03 $\pm$ 654%
	⁹⁰ Sr	2.4E+00 $\pm$ 20%
	¹⁰³ Ru	-3.1E-03 $\pm$ 355%
	¹⁰⁶ Ru	2.3E-02 $\pm$ 270%
	¹¹³ Sn	2.1E-03 $\pm$ 571%
	¹²⁵ Sb	1.3E-02 $\pm$ 169%
	¹³⁴ Cs	3.7E-02 $\pm$ 38%
	¹³⁷ Cs	2.4E+00 $\pm$ 13%
	¹⁴⁴ Ce	1.2E-02 $\pm$ 567%
	¹⁵² Eu	8.7E-03 $\pm$ 264%
	¹⁵⁴ Eu	6.8E-03 $\pm$ 265%
	¹⁵⁵ Eu	8.8E-02 $\pm$ 57%
	²³⁴ U	2.5E-01 $\pm$ 35%
	²³⁵ U	1.2E-02 $\pm$ 83%
	²³⁸ U	2.3E-01 $\pm$ 36%
	²³⁸ Pu	2.8E-02 $\pm$ 111%
	^{239,240} Pu	2.0E-02 $\pm$ 80%

Location	Isotope	Result $\pm$ Error
Y610	⁶⁰ Co	6.1E-02 $\pm$ 16%
	⁶⁵ Zn	-6.1E-03 $\pm$ 246%
	⁹⁰ Sr	3.2E-01 $\pm$ 59%
	¹⁰³ Ru	-3.4E-03 $\pm$ 250%
	¹⁰⁶ Ru	-2.8E-02 $\pm$ 189%
	¹¹³ Sn	-5.2E-03 $\pm$ 169%
	¹²⁵ Sb	3.5E-03 $\pm$ 486%
	¹³⁴ Cs	4.5E-02 $\pm$ 27%
	¹³⁷ Cs	2.2E-01 $\pm$ 15%
	¹⁴⁴ Ce	-1.5E-02 $\pm$ 387%
	¹⁵² Eu	-4.2E-03 $\pm$ 452%
	¹⁵⁴ Eu	-7.9E-03 $\pm$ 215%
	¹⁵⁵ Eu	1.3E-02 $\pm$ 223%
	²³⁴ U	2.2E-01 $\pm$ 35%
	²³⁵ U	1.7E-02 $\pm$ 82%
	²³⁸ U	2.0E-01 $\pm$ 36%
	²³⁸ Pu	1.7E-02 $\pm$ 153%
	^{239,240} Pu	1.9E-02 $\pm$ 68%

Table 4-4 1999 Soil Sampling Results, 100-N Area (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error
Y611	⁶⁰ Co	2.7E-02 $\pm$ 30%
	⁶⁵ Zn	-4.5E-03 $\pm$ 422%
	⁹⁰ Sr	6.1E-01 $\pm$ 39%
	¹⁰³ Ru	3.9E-03 $\pm$ 256%
	¹⁰⁶ Ru	3.9E-02 $\pm$ 159%
	¹¹³ Sn	-8.9E-04 $\pm$ 1000%
	¹²⁵ Sb	1.3E-03 $\pm$ 1000%
	¹³⁴ Cs	4.3E-02 $\pm$ 35%
	¹³⁷ Cs	1.7E-01 $\pm$ 17%
	¹⁴⁴ Ce	4.5E-02 $\pm$ 169%
	¹⁵² Eu	9.7E-03 $\pm$ 309%
	¹⁵⁴ Eu	-2.1E-02 $\pm$ 100%
	¹⁵⁵ Eu	4.1E-02 $\pm$ 83%
	²³⁴ U	2.5E-01 $\pm$ 35%
	²³⁵ U	2.1E-02 $\pm$ 71%
	²³⁸ U	2.3E-01 $\pm$ 36%
	²³⁸ Pu	1.8E-03 $\pm$ 1000%
	^{239,240} Pu	9.1E-03 $\pm$ 95%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D001	⁶⁰ Co	3.8E-03 $\pm$ 200%	D003	⁶⁰ Co	3.1E-03 $\pm$ 200%
	⁶⁵ Zn	-5.5E-03 $\pm$ 410%		⁶⁵ Zn	4.5E-03 $\pm$ 378%
	⁹⁰ Sr	5.5E-03 $\pm$ >999%		⁹⁰ Sr	1.6E-01 $\pm$ 119%
	¹⁰³ Ru	-1.8E-03 $\pm$ 430%		¹⁰³ Ru	-3.0E-03 $\pm$ 230%
	¹⁰⁶ Ru	-2.5E-02 $\pm$ 280%		¹⁰⁶ Ru	-2.5E-02 $\pm$ 232%
	¹¹³ Sn	-2.8E-03 $\pm$ 350%		¹¹³ Sn	-2.6E-03 $\pm$ 381%
	¹²⁵ Sb	3.6E-03 $\pm$ 600%		¹²⁵ Sb	-8.1E-03 $\pm$ 259%
	¹³⁴ Cs	3.4E-02 $\pm$ 45%		¹³⁴ Cs	3.8E-02 $\pm$ 32%
	¹³⁷ Cs	1.4E-01 $\pm$ 18%		¹³⁷ Cs	7.8E-01 $\pm$ 13%
	¹⁴⁴ Ce	-4.4E-02 $\pm$ 150%		¹⁴⁴ Ce	-5.8E-02 $\pm$ 100%
	¹⁵² Eu	-1.6E-02 $\pm$ 160%		¹⁵² Eu	4.3E-03 $\pm$ 512%
	¹⁵⁴ Eu	-9.5E-03 $\pm$ 270%		¹⁵⁴ Eu	6.0E-03 $\pm$ 317%
	¹⁵⁵ Eu	5.1E-02 $\pm$ 69%		¹⁵⁵ Eu	4.6E-02 $\pm$ 89%
	²³⁴ U	2.0E-01 $\pm$ 15%		²³⁴ U	2.0E-01 $\pm$ 36%
	²³⁵ U	2.0E-02 $\pm$ 51%		²³⁵ U	1.3E-02 $\pm$ 92%
	²³⁸ U	2.1E-01 $\pm$ 15%		²³⁸ U	1.9E-01 $\pm$ 36%
	²³⁸ Pu	4.0E-03 $\pm$ 170%		²³⁸ Pu	6.3E-03 $\pm$ 286%
	^{239,240} Pu	1.0E-02 $\pm$ 82%		^{239,240} Pu	2.7E-02 $\pm$ 70%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D005	⁶⁰ Co	-5.9E-03 $\pm$ 110%	D007	⁶⁰ Co	-1.7E-03 $\pm$ 382%
	⁶⁵ Zn	8.5E-03 $\pm$ 212%		⁶⁵ Zn	2.2E-04 $\pm$ 1000%
	⁹⁰ Sr	2.2E-01 $\pm$ 82%		⁹⁰ Sr	3.0E-01 $\pm$ 83%
	¹⁰³ Ru	-2.7E-04 $\pm$ 1000%		¹⁰³ Ru	-2.4E-03 $\pm$ 258%
	¹⁰⁶ Ru	-2.4E-02 $\pm$ 258%		¹⁰⁶ Ru	-3.7E-02 $\pm$ 159%
	¹¹³ Sn	-2.1E-03 $\pm$ 448%		¹¹³ Sn	-3.0E-03 $\pm$ 280%
	¹²⁵ Sb	1.3E-02 $\pm$ 162%		¹²⁵ Sb	-1.2E-03 $\pm$ 1000%
	¹³⁴ Cs	2.4E-02 $\pm$ 46%		¹³⁴ Cs	7.9E-03 $\pm$ 100%
	¹³⁷ Cs	5.1E-02 $\pm$ 27%		¹³⁷ Cs	2.2E-01 $\pm$ 16%
	¹⁴⁴ Ce	4.4E-02 $\pm$ 159%		¹⁴⁴ Ce	-5.8E-02 $\pm$ 121%
	¹⁵² Eu	-2.5E-03 $\pm$ 1000%		¹⁵² Eu	-1.2E-02 $\pm$ 208%
	¹⁵⁴ Eu	-3.1E-03 $\pm$ 677%		¹⁵⁴ Eu	-3.2E-03 $\pm$ 625%
	¹⁵⁵ Eu	9.9E-03 $\pm$ 333%		¹⁵⁵ Eu	3.4E-02 $\pm$ 88%
	²³⁴ U	1.9E-01 $\pm$ 37%		²³⁴ U	1.6E-01 $\pm$ 38%
	²³⁵ U	1.2E-02 $\pm$ 100%		²³⁵ U	1.8E-02 $\pm$ 78%
	²³⁸ U	1.4E-01 $\pm$ 38%		²³⁸ U	1.5E-01 $\pm$ 38%
	²³⁸ Pu	3.9E-03 $\pm$ 410%		²³⁸ Pu	1.2E-03 $\pm$ 600%
	^{239,240} Pu	1.9E-03 $\pm$ 1000%		^{239,240} Pu	9.1E-02 $\pm$ 35%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D009	⁶⁰ Co	3.2E-04 $\pm$ 1000%	D011	⁶⁰ Co	-6.3E-03 $\pm$ 159%
	⁶⁵ Zn	-2.0E-02 $\pm$ 100%		⁶⁵ Zn	-1.1E-03 $\pm$ 1000%
	⁹⁰ Sr	1.5E-01 $\pm$ 140%		⁹⁰ Sr	2.0E-01 $\pm$ 100%
	¹⁰³ Ru	4.9E-04 $\pm$ 1000%		¹⁰³ Ru	3.2E-03 $\pm$ 406%
	¹⁰⁶ Ru	-2.2E-02 $\pm$ 232%		¹⁰⁶ Ru	5.8E-02 $\pm$ 172%
	¹¹³ Sn	-6.8E-03 $\pm$ 110%		¹¹³ Sn	6.8E-04 $\pm$ 1000%
	¹²⁵ Sb	1.0E-02 $\pm$ 160%		¹²⁵ Sb	1.2E-03 $\pm$ 1000%
	¹³⁴ Cs	9.4E-03 $\pm$ 56%		¹³⁴ Cs	2.6E-02 $\pm$ 54%
	¹³⁷ Cs	1.7E-01 $\pm$ 17%		¹³⁷ Cs	2.5E+00 $\pm$ 14%
	¹⁴⁴ Ce	-1.7E-02 $\pm$ 271%		¹⁴⁴ Ce	5.7E-02 $\pm$ 193%
	¹⁵² Eu	-4.4E-03 $\pm$ 386%		¹⁵² Eu	-7.3E-03 $\pm$ 644%
	¹⁵⁴ Eu	-2.8E-02 $\pm$ 100%		¹⁵⁴ Eu	-3.9E-02 $\pm$ 100%
	¹⁵⁵ Eu	2.9E-02 $\pm$ 79%		¹⁵⁵ Eu	-1.0E-03 $\pm$ 1000%
	²³⁴ U	1.5E-01 $\pm$ 38%		²³⁴ U	1.8E-01 $\pm$ 37%
	²³⁵ U	2.0E-02 $\pm$ 70%		²³⁵ U	5.5E-03 $\pm$ 200%
	²³⁸ U	1.8E-01 $\pm$ 37%		²³⁸ U	2.5E-01 $\pm$ 35%
	²³⁸ Pu	-4.6E-03 $\pm$ 435%		²³⁸ Pu	1.1E-02 $\pm$ 273%
	^{239,240} Pu	7.0E-03 $\pm$ 186%		^{239,240} Pu	1.2E-01 $\pm$ 41%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D013	⁶⁰ Co	-2.2E-03 $\pm$ 418%	D015	⁶⁰ Co	-1.3E-03 $\pm$ 477%
	⁶⁵ Zn	-1.4E-03 $\pm$ 1000%		⁶⁵ Zn	1.4E-04 $\pm$ 1000%
	⁹⁰ Sr	3.8E+00 $\pm$ 20%		⁹⁰ Sr	5.0E-01 $\pm$ 50%
	¹⁰³ Ru	9.5E-03 $\pm$ 105%		¹⁰³ Ru	2.6E-03 $\pm$ 300%
	¹⁰⁶ Ru	-4.7E-02 $\pm$ 189%		¹⁰⁶ Ru	3.3E-03 $\pm$ 1000%
	¹¹³ Sn	1.3E-03 $\pm$ 1000%		¹¹³ Sn	-1.8E-03 $\pm$ 556%
	¹²⁵ Sb	1.3E-02 $\pm$ 246%		¹²⁵ Sb	7.8E-03 $\pm$ 295%
	¹³⁴ Cs	2.2E-02 $\pm$ 45%		¹³⁴ Cs	2.7E-02 $\pm$ 52%
	¹³⁷ Cs	2.1E+00 $\pm$ 16%		¹³⁷ Cs	2.0E+00 $\pm$ 14%
	¹⁴⁴ Ce	-8.2E-02 $\pm$ 100%		¹⁴⁴ Ce	-9.3E-02 $\pm$ 100%
	¹⁵² Eu	-1.5E-02 $\pm$ 207%		¹⁵² Eu	-1.7E-02 $\pm$ 153%
	¹⁵⁴ Eu	-3.5E-03 $\pm$ 857%		¹⁵⁴ Eu	-2.0E-02 $\pm$ 100%
	¹⁵⁵ Eu	5.7E-02 $\pm$ 67%		¹⁵⁵ Eu	2.6E-02 $\pm$ 119%
	²³⁴ U	1.9E-01 $\pm$ 37%		²³⁴ U	1.8E-01 $\pm$ 37%
	²³⁵ U	2.0E-02 $\pm$ 75%		²³⁵ U	3.1E-02 $\pm$ 61%
	²³⁸ U	2.0E-01 $\pm$ 37%		²³⁸ U	1.8E-01 $\pm$ 37%
	²³⁸ Pu	1.8E-02 $\pm$ 1000%		²³⁸ Pu	5.6E-03 $\pm$ 518%
	^{239,240} Pu	2.1E-02 $\pm$ 76%		^{239,240} Pu	2.2E-02 $\pm$ 73%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D017	⁶⁰ Co	-6.6E-03 $\pm$ 100%	D019	⁶⁰ Co	1.7E-03 $\pm$ 382%
	⁶⁵ Zn	-6.5E-03 $\pm$ 308%		⁶⁵ Zn	3.4E-03 $\pm$ 471%
	⁹⁰ Sr	5.3E-02 $\pm$ 321%		⁹⁰ Sr	3.2E-01 $\pm$ 63%
	¹⁰³ Ru	-7.0E-03 $\pm$ 120%		¹⁰³ Ru	7.0E-03 $\pm$ 110%
	¹⁰⁶ Ru	4.6E-02 $\pm$ 150%		¹⁰⁶ Ru	3.4E-02 $\pm$ 179%
	¹¹³ Sn	-3.3E-03 $\pm$ 333%		¹¹³ Sn	-2.2E-03 $\pm$ 545%
	¹²⁵ Sb	2.1E-02 $\pm$ 119%		¹²⁵ Sb	3.6E-03 $\pm$ 611%
	¹³⁴ Cs	3.3E-02 $\pm$ 42%		¹³⁴ Cs	1.1E-02 $\pm$ 84%
	¹³⁷ Cs	1.6E+00 $\pm$ 15%		¹³⁷ Cs	1.4E+00 $\pm$ 14%
	¹⁴⁴ Ce	6.3E-02 $\pm$ 121%		¹⁴⁴ Ce	-2.3E-02 $\pm$ 322%
	¹⁵² Eu	2.3E-03 $\pm$ 1000%		¹⁵² Eu	-9.9E-03 $\pm$ 232%
	¹⁵⁴ Eu	-9.2E-03 $\pm$ 228%		¹⁵⁴ Eu	2.4E-02 $\pm$ 92%
	¹⁵⁵ Eu	-6.8E-03 $\pm$ 515%		¹⁵⁵ Eu	9.4E-03 $\pm$ 362%
	²³⁴ U	1.6E-01 $\pm$ 37%		²³⁴ U	1.9E-01 $\pm$ 37%
	²³⁵ U	9.7E-03 $\pm$ 100%		²³⁵ U	3.2E-02 $\pm$ 63%
	²³⁸ U	1.5E-01 $\pm$ 38%		²³⁸ U	1.9E-01 $\pm$ 37%
	²³⁸ Pu	-4.1E-03 $\pm$ 829%		²³⁸ Pu	4.2E-02 $\pm$ 81%
	^{239,240} Pu	4.9E-02 $\pm$ 51%		^{239,240} Pu	3.5E-02 $\pm$ 66%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D021	⁶⁰ Co	5.3E-03 $\pm$ 130%	D023	⁶⁰ Co	4.6E-03 $\pm$ 161%
	⁶⁵ Zn	-5.2E-03 $\pm$ 365%		⁶⁵ Zn	-8.1E-03 $\pm$ 272%
	⁹⁰ Sr	1.9E-01 $\pm$ 100%		⁹⁰ Sr	5.3E-01 $\pm$ 45%
	¹⁰³ Ru	-7.6E-03 $\pm$ 100%		¹⁰³ Ru	-2.3E-03 $\pm$ 522%
	¹⁰⁶ Ru	5.2E-02 $\pm$ 131%		¹⁰⁶ Ru	-4.6E-02 $\pm$ 239%
	¹¹³ Sn	-9.5E-03 $\pm$ 105%		¹¹³ Sn	9.8E-03 $\pm$ 173%
	¹²⁵ Sb	2.9E-03 $\pm$ 655%		¹²⁵ Sb	1.5E-02 $\pm$ 247%
	¹³⁴ Cs	2.5E-02 $\pm$ 40%		¹³⁴ Cs	2.6E-02 $\pm$ 46%
	¹³⁷ Cs	2.1E-01 $\pm$ 15%		¹³⁷ Cs	4.9E+00 $\pm$ 15%
	¹⁴⁴ Ce	-4.3E-03 $\pm$ 1000%		¹⁴⁴ Ce	-6.7E-02 $\pm$ 130%
	¹⁵² Eu	-2.6E-02 $\pm$ 100%		¹⁵² Eu	3.0E-02 $\pm$ 150%
	¹⁵⁴ Eu	6.8E-03 $\pm$ 382%		¹⁵⁴ Eu	-1.1E-03 $\pm$ 1000%
	¹⁵⁵ Eu	5.0E-02 $\pm$ 68%		¹⁵⁵ Eu	1.7E-02 $\pm$ 282%
	²³⁴ U	1.9E-01 $\pm$ 36%		²³⁴ U	1.7E-01 $\pm$ 39%
	²³⁵ U	3.5E-02 $\pm$ 54%		²³⁵ U	4.5E-02 $\pm$ 60%
	²³⁸ U	1.7E-01 $\pm$ 36%		²³⁸ U	2.0E-01 $\pm$ 39%
	²³⁸ Pu	-9.6E-02 $\pm$ 100%		²³⁸ Pu	-5.5E-03 $\pm$ 455%
	^{239,240} Pu	2.0E-02 $\pm$ 80%		^{239,240} Pu	7.7E-02 $\pm$ 44%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D025	⁶⁰ Co	3.5E-03 $\pm$ 160%	D027	⁶⁰ Co	4.8E-03 $\pm$ 90%
	⁶⁵ Zn	2.1E-03 $\pm$ 667%		⁶⁵ Zn	-1.5E-02 $\pm$ 100%
	⁹⁰ Sr	4.5E-01 $\pm$ 49%		⁹⁰ Sr	2.7E-01 $\pm$ 70%
	¹⁰³ Ru	-2.6E-03 $\pm$ 369%		¹⁰³ Ru	-1.3E-03 $\pm$ 369%
	¹⁰⁶ Ru	-8.1E-03 $\pm$ 815%		¹⁰⁶ Ru	5.1E-03 $\pm$ 784%
	¹¹³ Sn	-2.6E-03 $\pm$ 500%		¹¹³ Sn	2.5E-03 $\pm$ 260%
	¹²⁵ Sb	-1.3E-02 $\pm$ 223%		¹²⁵ Sb	-5.3E-03 $\pm$ 264%
	¹³⁴ Cs	3.4E-02 $\pm$ 26%		¹³⁴ Cs	1.7E-02 $\pm$ 52%
	¹³⁷ Cs	6.2E+00 $\pm$ 13%		¹³⁷ Cs	3.4E-01 $\pm$ 13%
	¹⁴⁴ Ce	5.5E-02 $\pm$ 129%		¹⁴⁴ Ce	3.5E-03 $\pm$ 1000%
	¹⁵² Eu	-1.5E-02 $\pm$ 187%		¹⁵² Eu	-3.6E-03 $\pm$ 417%
	¹⁵⁴ Eu	-2.3E-02 $\pm$ 100%		¹⁵⁴ Eu	6.5E-03 $\pm$ 215%
	¹⁵⁵ Eu	2.9E-02 $\pm$ 121%		¹⁵⁵ Eu	-2.3E-03 $\pm$ 1000%
	²³⁴ U	1.5E-01 $\pm$ 40%		²³⁴ U	2.0E-01 $\pm$ 36%
	²³⁵ U	2.0E-02 $\pm$ 80%		²³⁵ U	1.9E-02 $\pm$ 79%
	²³⁸ U	1.8E-01 $\pm$ 38%		²³⁸ U	2.2E-01 $\pm$ 35%
	²³⁸ Pu	1.7E-03 $\pm$ 1000%		²³⁸ Pu	1.2E-02 $\pm$ 217%
	^{239,240} Pu	4.9E-01 $\pm$ 33%		^{239,240} Pu	2.2E-02 $\pm$ 68%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D029	⁶⁰ Co	-5.9E-04 $\pm$ 932%	D031	⁶⁰ Co	-3.7E-05 $\pm$ 1000%
	⁶⁵ Zn	-4.7E-03 $\pm$ 319%		⁶⁵ Zn	-2.1E-04 $\pm$ 1000%
	⁹⁰ Sr	5.8E-01 $\pm$ 40%		⁹⁰ Sr	1.0E+00 $\pm$ 30%
	¹⁰³ Ru	1.7E-03 $\pm$ 441%		¹⁰³ Ru	-2.5E-03 $\pm$ 280%
	¹⁰⁶ Ru	4.9E-02 $\pm$ 120%		¹⁰⁶ Ru	7.1E-03 $\pm$ 775%
	¹¹³ Sn	7.5E-03 $\pm$ 129%		¹¹³ Sn	1.0E-02 $\pm$ 100%
	¹²⁵ Sb	5.1E-04 $\pm$ 1000%		¹²⁵ Sb	7.6E-03 $\pm$ 276%
	¹³⁴ Cs	2.6E-02 $\pm$ 38%		¹³⁴ Cs	2.8E-02 $\pm$ 39%
	¹³⁷ Cs	1.9E+00 $\pm$ 14%		¹³⁷ Cs	2.7E+00 $\pm$ 16%
	¹⁴⁴ Ce	-9.1E-04 $\pm$ 1000%		¹⁴⁴ Ce	7.9E-03 $\pm$ 620%
	¹⁵² Eu	6.5E-03 $\pm$ 385%		¹⁵² Eu	-4.5E-03 $\pm$ 467%
	¹⁵⁴ Eu	-1.0E-02 $\pm$ 180%		¹⁵⁴ Eu	-8.2E-03 $\pm$ 256%
	¹⁵⁵ Eu	3.4E-02 $\pm$ 100%		¹⁵⁵ Eu	3.5E-02 $\pm$ 71%
	²³⁴ U	2.1E-01 $\pm$ 36%		²³⁴ U	2.1E-01 $\pm$ 37%
	²³⁵ U	1.0E-02 $\pm$ 110%		²³⁵ U	4.7E-02 $\pm$ 57%
	²³⁸ U	1.6E-01 $\pm$ 37%		²³⁸ U	2.7E-01 $\pm$ 36%
	²³⁸ Pu	2.5E-03 $\pm$ 880%		²³⁸ Pu	2.7E-03 $\pm$ 1000%
	^{239,240} Pu	3.8E-01 $\pm$ 34%		^{239,240} Pu	1.5E-01 $\pm$ 42%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D033	⁶⁰ Co	-1.9E-03 $\pm$ 247%	D035	⁶⁰ Co	-8.4E-04 $\pm$ 286%
	⁶⁵ Zn	-9.7E-03 $\pm$ 134%		⁶⁵ Zn	-4.6E-03 $\pm$ 139%
	⁹⁰ Sr	9.3E-01 $\pm$ 25%		⁹⁰ Sr	6.1E-01 $\pm$ 34%
	¹⁰³ Ru	5.8E-03 $\pm$ 140%		¹⁰³ Ru	-1.0E-03 $\pm$ 290%
	¹⁰⁶ Ru	-1.4E-02 $\pm$ 407%		¹⁰⁶ Ru	-2.2E-02 $\pm$ 109%
	¹¹³ Sn	-1.2E-03 $\pm$ 917%		¹¹³ Sn	4.1E-04 $\pm$ 1000%
	¹²⁵ Sb	-4.0E-03 $\pm$ 600%		¹²⁵ Sb	-2.4E-03 $\pm$ 379%
	¹³⁴ Cs	2.2E-02 $\pm$ 32%		¹³⁴ Cs	1.1E-02 $\pm$ 34%
	¹³⁷ Cs	5.4E+00 $\pm$ 14%		¹³⁷ Cs	1.2E+00 $\pm$ 14%
	¹⁴⁴ Ce	-9.6E-02 $\pm$ 100%		¹⁴⁴ Ce	-1.6E-02 $\pm$ 131%
	¹⁵² Eu	9.3E-03 $\pm$ 269%		¹⁵² Eu	-2.1E-03 $\pm$ 524%
	¹⁵⁴ Eu	-4.1E-03 $\pm$ 366%		¹⁵⁴ Eu	-6.0E-03 $\pm$ 130%
	¹⁵⁵ Eu	-8.4E-03 $\pm$ 381%		¹⁵⁵ Eu	2.3E-03 $\pm$ 435%
	²³⁴ U	2.1E-01 $\pm$ 37%		²³⁴ U	2.5E-01 $\pm$ 35%
	²³⁵ U	2.7E-02 $\pm$ 70%		²³⁵ U	2.6E-02 $\pm$ 65%
	²³⁸ U	2.4E-01 $\pm$ 36%		²³⁸ U	2.3E-01 $\pm$ 36%
	²³⁸ Pu	8.5E-03 $\pm$ 165%		²³⁸ Pu	-1.7E-02 $\pm$ 118%
	^{239,240} Pu	9.1E-02 $\pm$ 42%		^{239,240} Pu	2.9E-02 $\pm$ 59%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D037	⁶⁰ Co	1.6E-03 $\pm$ 281%	D039	⁶⁰ Co	1.0E-03 $\pm$ 470%
	⁶⁵ Zn	-7.5E-03 $\pm$ 173%		⁶⁵ Zn	-2.2E-03 $\pm$ 591%
	⁹⁰ Sr	2.5E+00 $\pm$ 20%		⁹⁰ Sr	7.4E-01 $\pm$ 35%
	¹⁰³ Ru	1.7E-03 $\pm$ 371%		¹⁰³ Ru	2.8E-04 $\pm$ 1000%
	¹⁰⁶ Ru	1.3E-02 $\pm$ 392%		¹⁰⁶ Ru	-5.0E-02 $\pm$ 100%
	¹¹³ Sn	9.7E-04 $\pm$ 866%		¹¹³ Sn	4.0E-03 $\pm$ 190%
	¹²⁵ Sb	-1.1E-02 $\pm$ 164%		¹²⁵ Sb	1.6E-02 $\pm$ 100%
	¹³⁴ Cs	3.1E-02 $\pm$ 32%		¹³⁴ Cs	2.9E-02 $\pm$ 33%
	¹³⁷ Cs	1.7E+00 $\pm$ 13%		¹³⁷ Cs	1.0E+00 $\pm$ 13%
	¹⁴⁴ Ce	-4.3E-02 $\pm$ 121%		¹⁴⁴ Ce	-1.7E-03 $\pm$ 1000%
	¹⁵² Eu	-1.3E-02 $\pm$ 138%		¹⁵² Eu	-1.0E-03 $\pm$ 1000%
	¹⁵⁴ Eu	3.7E-03 $\pm$ 432%		¹⁵⁴ Eu	-3.7E-04 $\pm$ 1000%
	¹⁵⁵ Eu	4.2E-02 $\pm$ 64%		¹⁵⁵ Eu	2.3E-02 $\pm$ 109%
	²³⁴ U	2.8E-01 $\pm$ 35%		²³⁴ U	2.4E-01 $\pm$ 36%
	²³⁵ U	2.4E-02 $\pm$ 67%		²³⁵ U	1.6E-02 $\pm$ 94%
	²³⁸ U	2.9E-01 $\pm$ 34%		²³⁸ U	1.8E-01 $\pm$ 37%
	²³⁸ Pu	-7.3E-03 $\pm$ 205%		²³⁸ Pu	2.0E-02 $\pm$ 130%
	^{239,240} Pu	2.4E-02 $\pm$ 71%		^{239,240} Pu	5.0E-01 $\pm$ 32%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D041	⁶⁰ Co	-9.8E-04 $\pm$ 469%	D043	⁶⁰ Co	-2.2E-03 $\pm$ 250%
	⁶⁵ Zn	-7.5E-03 $\pm$ 173%		⁶⁵ Zn	-2.6E-03 $\pm$ 577%
	⁹⁰ Sr	2.9E-01 $\pm$ 66%		⁹⁰ Sr	7.1E-01 $\pm$ 23%
	¹⁰³ Ru	2.2E-03 $\pm$ 268%		¹⁰³ Ru	3.6E-03 $\pm$ 211%
	¹⁰⁶ Ru	-1.5E-02 $\pm$ 307%		¹⁰⁶ Ru	1.5E-03 $\pm$ 1000%
	¹¹³ Sn	-5.5E-03 $\pm$ 140%		¹¹³ Sn	-1.8E-03 $\pm$ 556%
	¹²⁵ Sb	1.2E-02 $\pm$ 133%		¹²⁵ Sb	-2.8E-03 $\pm$ 750%
	¹³⁴ Cs	3.4E-02 $\pm$ 25%		¹³⁴ Cs	3.5E-02 $\pm$ 34%
	¹³⁷ Cs	8.8E-01 $\pm$ 13%		¹³⁷ Cs	1.5E+00 $\pm$ 15%
	¹⁴⁴ Ce	-5.2E-02 $\pm$ 100%		¹⁴⁴ Ce	3.2E-02 $\pm$ 219%
	¹⁵² Eu	-1.9E-03 $\pm$ 947%		¹⁵² Eu	-9.3E-03 $\pm$ 312%
	¹⁵⁴ Eu	-1.5E-03 $\pm$ 1000%		¹⁵⁴ Eu	-1.1E-02 $\pm$ 173%
	¹⁵⁵ Eu	2.9E-02 $\pm$ 97%		¹⁵⁵ Eu	1.7E-02 $\pm$ 188%
	²³⁴ U	2.0E-01 $\pm$ 36%		²³⁴ U	4.1E-01 $\pm$ 39%
	²³⁵ U	2.1E-02 $\pm$ 71%		²³⁵ U	3.6E-02 $\pm$ 94%
	²³⁸ U	1.8E-01 $\pm$ 37%		²³⁸ U	3.8E-01 $\pm$ 42%
	²³⁸ Pu	-8.0E-03 $\pm$ 513%		²³⁸ Pu	4.1E-03 $\pm$ 1000%
	^{239,240} Pu	5.0E-02 $\pm$ 54%		^{239,240} Pu	6.1E-02 $\pm$ 61%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D045	⁶⁰ Co	2.4E-03 $\pm$ 258%	D047	⁶⁰ Co	-2.1E-03 $\pm$ 262%
	⁶⁵ Zn	3.3E-03 $\pm$ 485%		⁶⁵ Zn	-1.8E-03 $\pm$ 778%
	⁹⁰ Sr	2.2E+00 $\pm$ 20%		⁹⁰ Sr	3.2E-01 $\pm$ 41%
	¹⁰³ Ru	-6.0E-04 $\pm$ 1000%		¹⁰³ Ru	-8.3E-04 $\pm$ 843%
	¹⁰⁶ Ru	-7.9E-03 $\pm$ 911%		¹⁰⁶ Ru	-4.2E-02 $\pm$ 119%
	¹¹³ Sn	-1.2E-02 $\pm$ 108%		¹¹³ Sn	2.1E-03 $\pm$ 419%
	¹²⁵ Sb	2.3E-03 $\pm$ 1000%		¹²⁵ Sb	9.4E-03 $\pm$ 213%
	¹³⁴ Cs	2.8E-02 $\pm$ 36%		¹³⁴ Cs	2.5E-02 $\pm$ 35%
	¹³⁷ Cs	5.2E+00 $\pm$ 14%		¹³⁷ Cs	2.5E+00 $\pm$ 16%
	¹⁴⁴ Ce	-4.4E-03 $\pm$ 1000%		¹⁴⁴ Ce	-1.5E-02 $\pm$ 300%
	¹⁵² Eu	-2.1E-02 $\pm$ 138%		¹⁵² Eu	-1.1E-02 $\pm$ 164%
	¹⁵⁴ Eu	1.9E-02 $\pm$ 111%		¹⁵⁴ Eu	-1.3E-02 $\pm$ 131%
	¹⁵⁵ Eu	3.1E-02 $\pm$ 119%		¹⁵⁵ Eu	1.6E-02 $\pm$ 138%
	²³⁴ U	3.1E-01 $\pm$ 35%		²³⁴ U	4.9E-01 $\pm$ 35%
	²³⁵ U	2.5E-02 $\pm$ 72%		²³⁵ U	4.8E-02 $\pm$ 71%
	²³⁸ U	2.6E-01 $\pm$ 36%		²³⁸ U	5.0E-01 $\pm$ 34%
	²³⁸ Pu	6.1E-03 $\pm$ 557%		²³⁸ Pu	8.9E-02 $\pm$ 52%
	^{239,240} Pu	1.8E-01 $\pm$ 37%		^{239,240} Pu	4.6E-01 $\pm$ 35%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D049	⁶⁰ Co	9.5E-04 $\pm$ 558%	D051	⁶⁰ Co	-1.9E-03 $\pm$ 311%
	⁶⁵ Zn	-8.8E-03 $\pm$ 159%		⁶⁵ Zn	-1.6E-02 $\pm$ 100%
	⁹⁰ Sr	6.7E-02 $\pm$ 119%		⁹⁰ Sr	3.1E-01 $\pm$ 39%
	¹⁰³ Ru	-1.6E-03 $\pm$ 338%		¹⁰³ Ru	1.3E-03 $\pm$ 500%
	¹⁰⁶ Ru	-2.1E-02 $\pm$ 229%		¹⁰⁶ Ru	3.8E-02 $\pm$ 150%
	¹¹³ Sn	2.5E-03 $\pm$ 300%		¹¹³ Sn	-7.9E-03 $\pm$ 120%
	¹²⁵ Sb	6.3E-03 $\pm$ 254%		¹²⁵ Sb	-1.3E-02 $\pm$ 162%
	¹³⁴ Cs	3.0E-02 $\pm$ 33%		¹³⁴ Cs	2.6E-02 $\pm$ 35%
	¹³⁷ Cs	4.5E-01 $\pm$ 15%		¹³⁷ Cs	8.5E-01 $\pm$ 15%
	¹⁴⁴ Ce	-2.4E-02 $\pm$ 200%		¹⁴⁴ Ce	-6.5E-02 $\pm$ 109%
	¹⁵² Eu	3.2E-03 $\pm$ 594%		¹⁵² Eu	-1.1E-02 $\pm$ 227%
	¹⁵⁴ Eu	-1.9E-02 $\pm$ 100%		¹⁵⁴ Eu	1.7E-03 $\pm$ 1000%
	¹⁵⁵ Eu	2.5E-02 $\pm$ 120%		¹⁵⁵ Eu	2.6E-02 $\pm$ 119%
	²³⁴ U	2.0E-01 $\pm$ 36%		²³⁴ U	2.0E-01 $\pm$ 37%
	²³⁵ U	1.2E-02 $\pm$ 100%		²³⁵ U	2.7E-02 $\pm$ 74%
	²³⁸ U	2.2E-01 $\pm$ 36%		²³⁸ U	2.0E-01 $\pm$ 37%
²³⁸ Pu	²³⁸ Pu	2.7E-03 $\pm$ 1000%	²³⁸ Pu	²³⁸ Pu	3.8E-02 $\pm$ 100%
	^{239,240} Pu	4.0E-02 $\pm$ 60%		^{239,240} Pu	9.8E-02 $\pm$ 44%

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D053	⁶⁰ Co	-3.8E-03 $\pm$ 189%	D055	⁶⁰ Co	-1.3E-04 $\pm$ 1000%
	⁶⁵ Zn	6.0E-03 $\pm$ 300%		⁶⁵ Zn	2.0E-04 $\pm$ 1000%
	⁹⁰ Sr	2.1E-01 $\pm$ 48%		⁹⁰ Sr	2.0E-01 $\pm$ 60%
	¹⁰³ Ru	-4.0E-03 $\pm$ 250%		¹⁰³ Ru	-4.1E-03 $\pm$ 210%
	¹⁰⁶ Ru	1.8E-02 $\pm$ 378%		¹⁰⁶ Ru	4.4E-03 $\pm$ 1000%
	¹¹³ Sn	-5.0E-03 $\pm$ 220%		¹¹³ Sn	5.8E-03 $\pm$ 207%
	¹²⁵ Sb	7.7E-03 $\pm$ 338%		¹²⁵ Sb	1.0E-03 $\pm$ 1000%
	¹³⁴ Cs	3.7E-02 $\pm$ 30%		¹³⁴ Cs	1.9E-02 $\pm$ 38%
	¹³⁷ Cs	4.2E+00 $\pm$ 16%		¹³⁷ Cs	5.5E+00 $\pm$ 14%
	¹⁴⁴ Ce	-5.1E-02 $\pm$ 120%		¹⁴⁴ Ce	1.7E-02 $\pm$ 353%
	¹⁵² Eu	-2.5E-03 $\pm$ 1000%		¹⁵² Eu	1.2E-02 $\pm$ 242%
	¹⁵⁴ Eu	-1.2E-02 $\pm$ 192%		¹⁵⁴ Eu	3.0E-03 $\pm$ 567%
	¹⁵⁵ Eu	3.2E-02 $\pm$ 91%		¹⁵⁵ Eu	4.7E-02 $\pm$ 72%
	²³⁴ U	2.7E-01 $\pm$ 37%		²³⁴ U	1.8E-01 $\pm$ 37%
	²³⁵ U	1.4E-02 $\pm$ 107%		²³⁵ U	1.3E-02 $\pm$ 85%
	²³⁸ U	2.6E-01 $\pm$ 38%		²³⁸ U	1.7E-01 $\pm$ 38%
²³⁸ Pu	²³⁸ Pu	1.8E-02 $\pm$ 200%	²³⁸ Pu	²³⁸ Pu	-2.2E-02 $\pm$ 141%
	^{239,240} Pu	9.2E-03 $\pm$ 152%		^{239,240} Pu	1.2E-02 $\pm$ 133%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D057	⁶⁰ Co	2.1E-03 $\pm$ 271%	D059	⁶⁰ Co	-3.8E-03 $\pm$ 139%
	⁶⁵ Zn	6.5E-03 $\pm$ 215%		⁶⁵ Zn	-1.1E-02 $\pm$ 145%
	⁹⁰ Sr	5.9E+00 $\pm$ 20%		⁹⁰ Sr	3.7E-01 $\pm$ 46%
	¹⁰³ Ru	3.7E-03 $\pm$ 297%		¹⁰³ Ru	2.4E-03 $\pm$ 300%
	¹⁰⁶ Ru	1.0E-03 $\pm$ 1000%		¹⁰⁶ Ru	6.1E-02 $\pm$ 100%
	¹¹³ Sn	4.4E-03 $\pm$ 341%		¹¹³ Sn	-1.3E-03 $\pm$ 754%
	¹²⁵ Sb	5.1E-03 $\pm$ 686%		¹²⁵ Sb	3.7E-05 $\pm$ 1000%
	¹³⁴ Cs	1.7E-02 $\pm$ 55%		¹³⁴ Cs	1.8E-02 $\pm$ 56%
	¹³⁷ Cs	9.6E+00 $\pm$ 13%		¹³⁷ Cs	1.7E+00 $\pm$ 15%
	¹⁴⁴ Ce	-2.6E-02 $\pm$ 312%		¹⁴⁴ Ce	3.8E-02 $\pm$ 189%
	¹⁵² Eu	-6.4E-03 $\pm$ 516%		¹⁵² Eu	-8.7E-04 $\pm$ 1000%
	¹⁵⁴ Eu	-1.7E-02 $\pm$ 112%		¹⁵⁴ Eu	-2.1E-02 $\pm$ 100%
	¹⁵⁵ Eu	3.8E-02 $\pm$ 100%		¹⁵⁵ Eu	1.4E-02 $\pm$ 229%
	²³⁴ U	1.9E-01 $\pm$ 37%		²³⁴ U	2.5E-01 $\pm$ 35%
	²³⁵ U	2.1E-02 $\pm$ 71%		²³⁵ U	1.8E-02 $\pm$ 78%
	²³⁸ U	1.7E-01 $\pm$ 38%		²³⁸ U	1.8E-01 $\pm$ 37%
	²³⁸ Pu	3.4E-02 $\pm$ 121%		²³⁸ Pu	-6.8E-03 $\pm$ 265%
	^{239,240} Pu	3.2E-02 $\pm$ 66%		^{239,240} Pu	2.3E-02 $\pm$ 70%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D061	⁶⁰ Co	-3.2E-03 $\pm$ 200%	D063	⁶⁰ Co	-1.8E-03 $\pm$ 261%
	⁶⁵ Zn	-1.7E-02 $\pm$ 112%		⁶⁵ Zn	-8.6E-03 $\pm$ 163%
	⁹⁰ Sr	4.6E-01 $\pm$ 39%		⁹⁰ Sr	1.3E+00 $\pm$ 25%
	¹⁰³ Ru	-3.3E-03 $\pm$ 200%		¹⁰³ Ru	7.6E-04 $\pm$ 750%
	¹⁰⁶ Ru	-2.7E-02 $\pm$ 219%		¹⁰⁶ Ru	-3.6E-02 $\pm$ 131%
	¹¹³ Sn	3.8E-03 $\pm$ 250%		¹¹³ Sn	-2.0E-03 $\pm$ 380%
	¹²⁵ Sb	9.1E-04 $\pm$ 1000%		¹²⁵ Sb	-7.5E-03 $\pm$ 213%
	¹³⁴ Cs	4.0E-02 $\pm$ 25%		¹³⁴ Cs	3.3E-02 $\pm$ 25%
	¹³⁷ Cs	6.7E-01 $\pm$ 14%		¹³⁷ Cs	4.3E-01 $\pm$ 13%
	¹⁴⁴ Ce	-6.4E-03 $\pm$ 1000%		¹⁴⁴ Ce	-7.1E-03 $\pm$ 732%
	¹⁵² Eu	-4.5E-03 $\pm$ 578%		¹⁵² Eu	9.6E-03 $\pm$ 177%
	¹⁵⁴ Eu	-1.9E-02 $\pm$ 111%		¹⁵⁴ Eu	7.0E-04 $\pm$ 1000%
	¹⁵⁵ Eu	4.0E-02 $\pm$ 100%		¹⁵⁵ Eu	7.5E-03 $\pm$ 360%
	²³⁴ U	2.4E-01 $\pm$ 35%		²³⁴ U	3.2E-01 $\pm$ 38%
	²³⁵ U	1.7E-02 $\pm$ 88%		²³⁵ U	3.2E-02 $\pm$ 69%
	²³⁸ U	2.2E-01 $\pm$ 36%		²³⁸ U	2.4E-01 $\pm$ 37%
	²³⁸ Pu	1.2E-02 $\pm$ 117%		²³⁸ Pu	-1.9E-03 $\pm$ 684%
	^{239,240} Pu	1.5E-02 $\pm$ 73%		^{239,240} Pu	1.9E-02 $\pm$ 74%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D065	⁶⁰ Co	-1.6E-03 $\pm$ 263%	D067	⁶⁰ Co	-3.1E-03 $\pm$ 161%
	⁶⁵ Zn	-4.1E-03 $\pm$ 268%		⁶⁵ Zn	-8.5E-03 $\pm$ 165%
	⁹⁰ Sr	7.5E-01 $\pm$ 29%		⁹⁰ Sr	6.6E-01 $\pm$ 35%
	¹⁰³ Ru	-1.4E-03 $\pm$ 350%		¹⁰³ Ru	4.8E-03 $\pm$ 121%
	¹⁰⁶ Ru	1.7E-02 $\pm$ 253%		¹⁰⁶ Ru	2.5E-02 $\pm$ 180%
	¹¹³ Sn	-2.8E-03 $\pm$ 229%		¹¹³ Sn	-4.1E-04 $\pm$ 1000%
	¹²⁵ Sb	9.0E-03 $\pm$ 144%		¹²⁵ Sb	-3.4E-03 $\pm$ 441%
	¹³⁴ Cs	2.9E-02 $\pm$ 25%		¹³⁴ Cs	2.8E-02 $\pm$ 29%
	¹³⁷ Cs	4.7E-01 $\pm$ 13%		¹³⁷ Cs	7.7E-02 $\pm$ 19%
	¹⁴⁴ Ce	-1.3E-02 $\pm$ 331%		¹⁴⁴ Ce	2.4E-03 $\pm$ 1000%
	¹⁵² Eu	-7.7E-03 $\pm$ 195%		¹⁵² Eu	-3.2E-02 $\pm$ 100%
	¹⁵⁴ Eu	1.0E-02 $\pm$ 140%		¹⁵⁴ Eu	3.5E-03 $\pm$ 429%
	¹⁵⁵ Eu	2.6E-02 $\pm$ 92%		¹⁵⁵ Eu	5.9E-04 $\pm$ 1000%
	²³⁴ U	2.5E-01 $\pm$ 36%		²³⁴ U	2.2E-01 $\pm$ 37%
	²³⁵ U	4.7E-02 $\pm$ 55%		²³⁵ U	1.6E-02 $\pm$ 94%
	²³⁸ U	2.4E-01 $\pm$ 37%		²³⁸ U	2.4E-01 $\pm$ 36%
	²³⁸ Pu	-2.1E-03 $\pm$ 857%		²³⁸ Pu	1.5E-02 $\pm$ 120%
	^{239,240} Pu	1.2E-02 $\pm$ 83%		^{239,240} Pu	6.6E-03 $\pm$ 120%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D069	⁶⁰ Co	5.4E-04 $\pm$ 981%	D071	⁶⁰ Co	1.4E-03 $\pm$ 343%
	⁶⁵ Zn	-7.9E-03 $\pm$ 203%		⁶⁵ Zn	-3.7E-03 $\pm$ 351%
	⁹⁰ Sr	8.0E-01 $\pm$ 40%		⁹⁰ Sr	3.8E-01 $\pm$ 34%
	¹⁰³ Ru	2.4E-03 $\pm$ 250%		¹⁰³ Ru	2.3E-03 $\pm$ 191%
	¹⁰⁶ Ru	-3.3E-02 $\pm$ 161%		¹⁰⁶ Ru	1.0E-02 $\pm$ 360%
	¹¹³ Sn	1.9E-03 $\pm$ 442%		¹¹³ Sn	4.4E-03 $\pm$ 130%
	¹²⁵ Sb	-3.7E-03 $\pm$ 432%		¹²⁵ Sb	5.5E-03 $\pm$ 218%
	¹³⁴ Cs	3.1E-02 $\pm$ 29%		¹³⁴ Cs	2.5E-02 $\pm$ 30%
	¹³⁷ Cs	4.7E-01 $\pm$ 14%		¹³⁷ Cs	2.1E-01 $\pm$ 16%
	¹⁴⁴ Ce	2.6E-02 $\pm$ 212%		¹⁴⁴ Ce	3.5E-04 $\pm$ 1000%
	¹⁵² Eu	-2.3E-02 $\pm$ 100%		¹⁵² Eu	-7.9E-03 $\pm$ 165%
	¹⁵⁴ Eu	-1.1E-03 $\pm$ 1000%		¹⁵⁴ Eu	-1.5E-02 $\pm$ 100%
	¹⁵⁵ Eu	5.2E-01 $\pm$ 63%		¹⁵⁵ Eu	2.2E-02 $\pm$ 109%
	²³⁴ U	2.9E-01 $\pm$ 34%		²³⁴ U	2.0E-01 $\pm$ 36%
	²³⁵ U	4.0E-02 $\pm$ 60%		²³⁵ U	1.6E-02 $\pm$ 81%
	²³⁸ U	2.5E-01 $\pm$ 36%		²³⁸ U	2.1E-01 $\pm$ 35%
	²³⁸ Pu	9.1E-03 $\pm$ 209%		²³⁸ Pu	-3.3E-02 $\pm$ 100%
	^{239,240} Pu	1.6E-02 $\pm$ 81%		^{239,240} Pu	1.9E-03 $\pm$ 453%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D073	⁶⁰ Co	4.0E-03 $\pm$ 110%	D075	⁶⁰ Co	-4.0E-03 $\pm$ 130%
	⁶⁵ Zn	7.3E-04 $\pm$ 1000%		⁶⁵ Zn	-1.2E-02 $\pm$ 117%
	⁹⁰ Sr	-6.2E-02 $\pm$ 110%		⁹⁰ Sr	2.5E-01 $\pm$ 52%
	¹⁰³ Ru	-1.0E-04 $\pm$ 1000%		¹⁰³ Ru	1.0E-03 $\pm$ 630%
	¹⁰⁶ Ru	-4.4E-02 $\pm$ 100%		¹⁰⁶ Ru	1.0E-03 $\pm$ 1000%
	¹¹³ Sn	-1.5E-03 $\pm$ 400%		¹¹³ Sn	-3.3E-03 $\pm$ 270%
	¹²⁵ Sb	1.1E-03 $\pm$ 1000%		¹²⁵ Sb	3.4E-03 $\pm$ 588%
	¹³⁴ Cs	8.6E-03 $\pm$ 79%		¹³⁴ Cs	3.2E-02 $\pm$ 34%
	¹³⁷ Cs	2.5E-02 $\pm$ 33%		¹³⁷ Cs	1.1E+00 $\pm$ 15%
	¹⁴⁴ Ce	-3.9E-02 $\pm$ 110%		¹⁴⁴ Ce	4.3E-02 $\pm$ 151%
	¹⁵² Eu	-1.5E-02 $\pm$ 100%		¹⁵² Eu	9.2E-03 $\pm$ 283%
	¹⁵⁴ Eu	-1.8E-02 $\pm$ 100%		¹⁵⁴ Eu	-3.2E-02 $\pm$ 100%
	¹⁵⁵ Eu	4.2E-03 $\pm$ 524%		¹⁵⁵ Eu	4.3E-02 $\pm$ 70%
	²³⁴ U	2.2E-01 $\pm$ 36%		²³⁴ U	2.5E-01 $\pm$ 35%
	²³⁵ U	1.6E-02 $\pm$ 100%		²³⁵ U	2.8E-02 $\pm$ 61%
	²³⁸ U	1.7E-01 $\pm$ 37%		²³⁸ U	3.0E-01 $\pm$ 37%
	²³⁸ Pu	1.6E-02 $\pm$ 181%		²³⁸ Pu	-1.7E-03 $\pm$ 1000%
	^{239,240} Pu	4.1E-03 $\pm$ 149%		^{239,240} Pu	5.0E-03 $\pm$ 150%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D077	⁶⁰ Co	-2.0E-03 $\pm$ 200%	D079	⁶⁰ Co	6.1E-04 $\pm$ 672%
	⁶⁵ Zn	3.4E-03 $\pm$ 324%		⁶⁵ Zn	1.7E-03 $\pm$ 1000%
	⁹⁰ Sr	7.5E-02 $\pm$ 147%		⁹⁰ Sr	9.5E-02 $\pm$ 95%
	¹⁰³ Ru	1.2E-03 $\pm$ 358%		¹⁰³ Ru	2.7E-03 $\pm$ 189%
	¹⁰⁶ Ru	1.1E-02 $\pm$ 327%		¹⁰⁶ Ru	9.9E-04 $\pm$ 1000%
	¹¹³ Sn	-3.2E-04 $\pm$ 1000%		¹¹³ Sn	-3.1E-03 $\pm$ 210%
	¹²⁵ Sb	3.9E-03 $\pm$ 308%		¹²⁵ Sb	7.2E-03 $\pm$ 181%
	¹³⁴ Cs	2.2E-02 $\pm$ 27%		¹³⁴ Cs	2.4E-02 $\pm$ 33%
	¹³⁷ Cs	2.5E-01 $\pm$ 14%		¹³⁷ Cs	5.1E-01 $\pm$ 13%
	¹⁴⁴ Ce	6.6E-03 $\pm$ 606%		¹⁴⁴ Ce	1.1E-03 $\pm$ 1000%
	¹⁵² Eu	-1.1E-02 $\pm$ 127%		¹⁵² Eu	7.1E-03 $\pm$ 225%
	¹⁵⁴ Eu	-4.0E-03 $\pm$ 325%		¹⁵⁴ Eu	-5.1E-03 $\pm$ 255%
	¹⁵⁵ Eu	2.3E-02 $\pm$ 96%		¹⁵⁵ Eu	3.4E-03 $\pm$ 676%
	²³⁴ U	2.1E-01 $\pm$ 36%		²³⁴ U	2.0E-01 $\pm$ 38%
	²³⁵ U	2.1E-02 $\pm$ 71%		²³⁵ U	8.0E-03 $\pm$ 175%
	²³⁸ U	2.1E-01 $\pm$ 36%		²³⁸ U	2.5E-01 $\pm$ 37%
	²³⁸ Pu	6.0E-03 $\pm$ 583%		²³⁸ Pu	-1.5E-02 $\pm$ 220%
	^{239,240} Pu	2.6E-02 $\pm$ 73%		^{239,240} Pu	2.5E-02 $\pm$ 76%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D081	⁶⁰ Co	2.0E-03 $\pm$ 260%	D083	⁶⁰ Co	-8.4E-04 $\pm$ 702%
	⁶⁵ Zn	2.5E-03 $\pm$ 880%		⁶⁵ Zn	-1.8E-02 $\pm$ 100%
	⁹⁰ Sr	9.8E-03 $\pm$ 1000%		⁹⁰ Sr	1.7E-01 $\pm$ 65%
	¹⁰³ Ru	5.1E-04 $\pm$ 1000%		¹⁰³ Ru	3.6E-05 $\pm$ 1000%
	¹⁰⁶ Ru	-2.5E-02 $\pm$ 188%		¹⁰⁶ Ru	3.9E-02 $\pm$ 121%
	¹¹³ Sn	1.6E-03 $\pm$ 450%		¹¹³ Sn	-4.6E-03 $\pm$ 161%
	¹²⁵ Sb	3.1E-04 $\pm$ 1000%		¹²⁵ Sb	-1.6E-03 $\pm$ 938%
	¹³⁴ Cs	2.2E-02 $\pm$ 35%		¹³⁴ Cs	2.5E-02 $\pm$ 36%
	¹³⁷ Cs	8.6E-03 $\pm$ 76%		¹³⁷ Cs	4.1E-01 $\pm$ 16%
	¹⁴⁴ Ce	1.9E-02 $\pm$ 268%		¹⁴⁴ Ce	-3.0E-02 $\pm$ 140%
	¹⁵² Eu	-1.7E-02 $\pm$ 141%		¹⁵² Eu	-1.4E-02 $\pm$ 121%
	¹⁵⁴ Eu	1.4E-03 $\pm$ 1000%		¹⁵⁴ Eu	-5.8E-03 $\pm$ 328%
	¹⁵⁵ Eu	4.5E-02 $\pm$ 80%		¹⁵⁵ Eu	3.2E-02 $\pm$ 69%
	²³⁴ U	2.0E-01 $\pm$ 36%		²³⁴ U	2.5E-01 $\pm$ 35%
	²³⁵ U	2.3E-02 $\pm$ 70%		²³⁵ U	3.6E-02 $\pm$ 61%
	²³⁸ U	2.1E-01 $\pm$ 36%		²³⁸ U	2.7E-01 $\pm$ 35%
	²³⁸ Pu	1.0E-02 $\pm$ 280%		²³⁸ Pu	2.1E-02 $\pm$ 129%
	^{239,240} Pu	1.0E-02 $\pm$ 95%		^{239,240} Pu	2.1E-02 $\pm$ 71%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D085	⁶⁰ Co	4.9E-04 $\pm$ 1000%	D087	⁶⁰ Co	-1.6E-03 $\pm$ 181%
	⁶⁵ Zn	-1.7E-02 $\pm$ 100%		⁶⁵ Zn	-1.0E-02 $\pm$ 100%
	⁹⁰ Sr	6.4E-02 $\pm$ 141%		⁹⁰ Sr	1.5E-01 $\pm$ 61%
	¹⁰³ Ru	2.2E-03 $\pm$ 259%		¹⁰³ Ru	-8.1E-04 $\pm$ 407%
	¹⁰⁶ Ru	-4.2E-03 $\pm$ 1000%		¹⁰⁶ Ru	-1.5E-02 $\pm$ 180%
	¹¹³ Sn	-3.7E-03 $\pm$ 200%		¹¹³ Sn	-5.3E-03 $\pm$ 100%
	¹²⁵ Sb	1.4E-03 $\pm$ 1000%		¹²⁵ Sb	2.0E-03 $\pm$ 450%
	¹³⁴ Cs	3.4E-02 $\pm$ 29%		¹³⁴ Cs	3.4E-02 $\pm$ 21%
	¹³⁷ Cs	2.3E-01 $\pm$ 15%		¹³⁷ Cs	3.8E-02 $\pm$ 19%
	¹⁴⁴ Ce	1.3E-02 $\pm$ 400%		¹⁴⁴ Ce	-1.5E-02 $\pm$ 207%
	¹⁵² Eu	4.4E-04 $\pm$ 1000%		¹⁵² Eu	-1.3E-02 $\pm$ 100%
	¹⁵⁴ Eu	8.7E-04 $\pm$ 1000%		¹⁵⁴ Eu	-4.3E-03 $\pm$ 256%
	¹⁵⁵ Eu	4.3E-03 $\pm$ 651%		¹⁵⁵ Eu	2.7E-02 $\pm$ 67%
	²³⁴ U	2.3E-01 $\pm$ 35%		²³⁴ U	2.7E-01 $\pm$ 35%
	²³⁵ U	3.5E-02 $\pm$ 57%		²³⁵ U	1.3E-02 $\pm$ 85%
	²³⁸ U	2.4E-01 $\pm$ 35%		²³⁸ U	2.5E-01 $\pm$ 36%
	²³⁸ Pu	1.1E-02 $\pm$ 218%		²³⁸ Pu	3.2E-03 $\pm$ 438%
	^{239,240} Pu	1.8E-03 $\pm$ 350%		^{239,240} Pu	3.2E-03 $\pm$ 200%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D089	⁶⁰ Co	-2.2E-03 $\pm$ 218%	D091	⁶⁰ Co	-7.1E-03 $\pm$ 100%
	⁶⁵ Zn	-1.1E-03 $\pm$ 1000%		⁶⁵ Zn	-8.4E-03 $\pm$ 190%
	⁹⁰ Sr	1.3E-01 $\pm$ 70%		⁹⁰ Sr	8.3E-02 $\pm$ 120%
	¹⁰³ Ru	1.4E-03 $\pm$ 407%		¹⁰³ Ru	4.3E-03 $\pm$ 179%
	¹⁰⁶ Ru	9.0E-03 $\pm$ 489%		¹⁰⁶ Ru	1.9E-02 $\pm$ 279%
	¹¹³ Sn	-6.0E-03 $\pm$ 120%		¹¹³ Sn	1.2E-05 $\pm$ 1000%
	¹²⁵ Sb	4.8E-03 $\pm$ 292%		¹²⁵ Sb	-6.7E-03 $\pm$ 284%
	¹³⁴ Cs	2.4E-02 $\pm$ 31%		¹³⁴ Cs	3.4E-02 $\pm$ 32%
	¹³⁷ Cs	2.1E-01 $\pm$ 15%		¹³⁷ Cs	8.2E-01 $\pm$ 15%
	¹⁴⁴ Ce	3.2E-02 $\pm$ 150%		¹⁴⁴ Ce	-2.8E-02 $\pm$ 239%
	¹⁵² Eu	5.2E-03 $\pm$ 346%		¹⁵² Eu	-6.9E-03 $\pm$ 333%
	¹⁵⁴ Eu	-2.2E-03 $\pm$ 727%		¹⁵⁴ Eu	-3.6E-02 $\pm$ 100%
	¹⁵⁵ Eu	2.4E-02 $\pm$ 100%		¹⁵⁵ Eu	2.4E-02 $\pm$ 121%
	²³⁴ U	1.5E-01 $\pm$ 38%		²³⁴ U	2.7E-01 $\pm$ 35%
	²³⁵ U	2.3E-02 $\pm$ 70%		²³⁵ U	3.2E-02 $\pm$ 59%
	²³⁸ U	1.6E-01 $\pm$ 37%		²³⁸ U	2.8E-01 $\pm$ 35%
	²³⁸ Pu	1.3E-02 $\pm$ 123%		²³⁸ Pu	1.2E-02 $\pm$ 117%
	^{239,240} Pu	7.2E-03 $\pm$ 110%		^{239,240} Pu	8.6E-03 $\pm$ 95%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D093	⁶⁰ Co	4.1E-03 $\pm$ 120%	D095	⁶⁰ Co	-4.0E-04 $\pm$ 775%
	⁶⁵ Zn	-7.5E-03 $\pm$ 187%		⁶⁵ Zn	3.9E-04 $\pm$ 1000%
	⁹⁰ Sr	1.5E-01 $\pm$ 65%		⁹⁰ Sr	1.7E-01 $\pm$ 55%
	¹⁰³ Ru	2.9E-03 $\pm$ 200%		¹⁰³ Ru	-2.5E-03 $\pm$ 148%
	¹⁰⁶ Ru	-6.6E-03 $\pm$ 652%		¹⁰⁶ Ru	1.1E-02 $\pm$ 245%
	¹¹³ Sn	3.6E-03 $\pm$ 211%		¹¹³ Sn	-4.2E-03 $\pm$ 110%
	¹²⁵ Sb	3.8E-03 $\pm$ 368%		¹²⁵ Sb	3.7E-03 $\pm$ 251%
	¹³⁴ Cs	3.2E-02 $\pm$ 29%		¹³⁴ Cs	3.3E-02 $\pm$ 24%
	¹³⁷ Cs	2.7E-01 $\pm$ 16%		¹³⁷ Cs	1.7E-01 $\pm$ 13%
	¹⁴⁴ Ce	-1.8E-02 $\pm$ 211%		¹⁴⁴ Ce	7.0E-03 $\pm$ 457%
	¹⁵² Eu	8.2E-03 $\pm$ 171%		¹⁵² Eu	-6.5E-03 $\pm$ 154%
	¹⁵⁴ Eu	2.4E-03 $\pm$ 667%		¹⁵⁴ Eu	4.6E-03 $\pm$ 239%
	¹⁵⁵ Eu	3.6E-02 $\pm$ 56%		¹⁵⁵ Eu	5.5E-02 $\pm$ 45%
	²³⁴ U	2.1E-01 $\pm$ 36%		²³⁴ U	4.5E-01 $\pm$ 33%
	²³⁵ U	1.2E-02 $\pm$ 117%		²³⁵ U	3.0E-02 $\pm$ 60%
	²³⁸ U	2.4E-01 $\pm$ 35%		²³⁸ U	4.6E-01 $\pm$ 33%
	²³⁸ Pu	4.9E-03 $\pm$ 367%		²³⁸ Pu	1.1E-02 $\pm$ 173%
	^{239,240} Pu	3.2E-03 $\pm$ 200%		^{239,240} Pu	1.5E-02 $\pm$ 80%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D097	⁶⁰ Co	4.3E-03 $\pm$ 121%	D099	⁶⁰ Co	2.4E-04 $\pm$ 1000%
	⁶⁵ Zn	1.6E-02 $\pm$ 88%		⁶⁵ Zn	5.6E-03 $\pm$ 268%
	⁹⁰ Sr	7.5E-02 $\pm$ 120%		⁹⁰ Sr	-6.1E-02 $\pm$ 139%
	¹⁰³ Ru	-7.1E-04 $\pm$ 831%		¹⁰³ Ru	-5.0E-04 $\pm$ 1000%
	¹⁰⁶ Ru	2.8E-02 $\pm$ 171%		¹⁰⁶ Ru	2.0E-02 $\pm$ 230%
	¹¹³ Sn	-6.7E-03 $\pm$ 110%		¹¹³ Sn	-8.8E-03 $\pm$ 100%
	¹²⁵ Sb	1.5E-03 $\pm$ 933%		¹²⁵ Sb	8.6E-03 $\pm$ 163%
	¹³⁴ Cs	3.7E-02 $\pm$ 26%		¹³⁴ Cs	3.2E-02 $\pm$ 31%
	¹³⁷ Cs	2.9E-02 $\pm$ 45%		¹³⁷ Cs	1.3E-02 $\pm$ 56%
	¹⁴⁴ Ce	1.9E-02 $\pm$ 279%		¹⁴⁴ Ce	-4.9E-02 $\pm$ 100%
	¹⁵² Eu	-1.4E-02 $\pm$ 121%		¹⁵² Eu	-1.0E-03 $\pm$ 1000%
	¹⁵⁴ Eu	-7.0E-03 $\pm$ 257%		¹⁵⁴ Eu	-5.4E-03 $\pm$ 389%
	¹⁵⁵ Eu	4.9E-02 $\pm$ 67%		¹⁵⁵ Eu	3.6E-02 $\pm$ 58%
	²³⁴ U	3.0E-01 $\pm$ 33%		²³⁴ U	2.1E-01 $\pm$ 36%
	²³⁵ U	1.7E-02 $\pm$ 88%		²³⁵ U	1.2E-02 $\pm$ 100%
	²³⁸ U	2.9E-01 $\pm$ 34%		²³⁸ U	2.1E-01 $\pm$ 36%
	²³⁸ Pu	-1.4E-02 $\pm$ 150%		²³⁸ Pu	-8.4E-02 $\pm$ 100%
	^{239,240} Pu	5.4E-03 $\pm$ 180%		^{239,240} Pu	1.6E-03 $\pm$ 1000%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D101	⁶⁰ Co	2.3E-05 $\pm$ 1000%	D103	⁶⁰ Co	-6.6E-04 $\pm$ 394%
	⁶⁵ Zn	8.1E-03 $\pm$ 160%		⁶⁵ Zn	2.8E-03 $\pm$ 271%
	⁹⁰ Sr	1.4E-01 $\pm$ 61%		⁹⁰ Sr	-7.2E-02 $\pm$ 119%
	¹⁰³ Ru	-1.7E-03 $\pm$ 353%		¹⁰³ Ru	-5.7E-03 $\pm$ 100%
	¹⁰⁶ Ru	-2.4E-02 $\pm$ 179%		¹⁰⁶ Ru	2.2E-02 $\pm$ 118%
	¹¹³ Sn	-1.2E-03 $\pm$ 567%		¹¹³ Sn	-2.6E-04 $\pm$ 1000%
	¹²⁵ Sb	-7.8E-03 $\pm$ 179%		¹²⁵ Sb	8.5E-03 $\pm$ 98%
	¹³⁴ Cs	3.0E-02 $\pm$ 26%		¹³⁴ Cs	2.4E-02 $\pm$ 21%
	¹³⁷ Cs	6.3E-03 $\pm$ 100%		¹³⁷ Cs	1.9E-01 $\pm$ 13%
	¹⁴⁴ Ce	-3.5E-02 $\pm$ 140%		¹⁴⁴ Ce	-1.1E-02 $\pm$ 236%
	¹⁵² Eu	-5.1E-03 $\pm$ 333%		¹⁵² Eu	-1.1E-03 $\pm$ 791%
	¹⁵⁴ Eu	-8.8E-03 $\pm$ 182%		¹⁵⁴ Eu	-7.2E-03 $\pm$ 139%
	¹⁵⁵ Eu	3.9E-02 $\pm$ 77%		¹⁵⁵ Eu	1.4E-02 $\pm$ 100%
	²³⁴ U	1.8E-01 $\pm$ 36%		²³⁴ U	2.1E-01 $\pm$ 36%
	²³⁵ U	1.8E-02 $\pm$ 72%		²³⁵ U	2.3E-02 $\pm$ 70%
	²³⁸ U	2.0E-01 $\pm$ 36%		²³⁸ U	2.1E-01 $\pm$ 36%
	²³⁸ Pu	1.8E-03 $\pm$ 1000%		²³⁸ Pu	1.1E-02 $\pm$ 145%
	^{239,240} Pu	5.4E-03 $\pm$ 120%		^{239,240} Pu	3.8E-02 $\pm$ 50%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D105	⁶⁰ Co	-6.7E-04 $\pm$ 836%	D107	⁶⁰ Co	1.6E-03 $\pm$ 281%
	⁶⁵ Zn	-1.3E-02 $\pm$ 131%		⁶⁵ Zn	-1.1E-02 $\pm$ 118%
	⁹⁰ Sr	-1.1E-01 $\pm$ 100%		⁹⁰ Sr	3.5E-02 $\pm$ 260%
	¹⁰³ Ru	-4.6E-03 $\pm$ 161%		¹⁰³ Ru	1.5E-03 $\pm$ 420%
	¹⁰⁶ Ru	-2.1E-02 $\pm$ 262%		¹⁰⁶ Ru	-1.1E-02 $\pm$ 373%
	¹¹³ Sn	2.6E-03 $\pm$ 319%		¹¹³ Sn	-9.2E-03 $\pm$ 100%
	¹²⁵ Sb	1.1E-03 $\pm$ 1000%		¹²⁵ Sb	-9.6E-03 $\pm$ 146%
	¹³⁴ Cs	3.5E-02 $\pm$ 37%		¹³⁴ Cs	3.4E-02 $\pm$ 29%
	¹³⁷ Cs	1.6E-02 $\pm$ 53%		¹³⁷ Cs	4.5E-01 $\pm$ 13%
	¹⁴⁴ Ce	5.5E-02 $\pm$ 120%		¹⁴⁴ Ce	1.9E-02 $\pm$ 247%
	¹⁵² Eu	-8.4E-03 $\pm$ 286%		¹⁵² Eu	8.4E-03 $\pm$ 214%
	¹⁵⁴ Eu	-1.7E-02 $\pm$ 112%		¹⁵⁴ Eu	-6.7E-03 $\pm$ 224%
	¹⁵⁵ Eu	3.1E-02 $\pm$ 94%		¹⁵⁵ Eu	3.9E-02 $\pm$ 62%
	²³⁴ U	3.0E-01 $\pm$ 33%		²³⁴ U	1.7E-01 $\pm$ 36%
	²³⁵ U	1.3E-02 $\pm$ 92%		²³⁵ U	1.9E-02 $\pm$ 68%
	²³⁸ U	2.4E-01 $\pm$ 35%		²³⁸ U	1.7E-01 $\pm$ 36%
	²³⁸ Pu	-4.2E-03 $\pm$ 310%		²³⁸ Pu	1.3E-02 $\pm$ 154%
	^{239,240} Pu	4.6E-02 $\pm$ 54%		^{239,240} Pu	5.5E-01 $\pm$ 33%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D109	⁶⁰ Co	1.7E-03 $\pm$ 300%	D111	⁶⁰ Co	2.4E-03 $\pm$ 208%
	⁶⁵ Zn	5.0E-05 $\pm$ 1000%		⁶⁵ Zn	-4.3E-03 $\pm$ 326%
	⁹⁰ Sr	-3.2E-02 $\pm$ 291%		⁹⁰ Sr	-1.3E-01 $\pm$ 100%
	¹⁰³ Ru	-9.1E-03 $\pm$ 100%		¹⁰³ Ru	7.2E-04 $\pm$ 806%
	¹⁰⁶ Ru	-2.8E-02 $\pm$ 171%		¹⁰⁶ Ru	-8.2E-03 $\pm$ 524%
	¹¹³ Sn	-2.9E-03 $\pm$ 269%		¹¹³ Sn	1.2E-04 $\pm$ 1000%
	¹²⁵ Sb	-5.7E-03 $\pm$ 263%		¹²⁵ Sb	1.5E-02 $\pm$ 87%
	¹³⁴ Cs	2.6E-02 $\pm$ 42%		¹³⁴ Cs	2.7E-02 $\pm$ 34%
	¹³⁷ Cs	4.0E-01 $\pm$ 14%		¹³⁷ Cs	4.1E-01 $\pm$ 16%
	¹⁴⁴ Ce	-9.3E-03 $\pm$ 581%		¹⁴⁴ Ce	-3.7E-02 $\pm$ 100%
	¹⁵² Eu	-2.0E-02 $\pm$ 100%		¹⁵² Eu	-4.3E-03 $\pm$ 326%
	¹⁵⁴ Eu	-1.6E-02 $\pm$ 113%		¹⁵⁴ Eu	-1.3E-02 $\pm$ 123%
	¹⁵⁵ Eu	-6.9E-04 $\pm$ 1000%		¹⁵⁵ Eu	2.5E-02 $\pm$ 80%
	²³⁴ U	1.7E-01 $\pm$ 38%		²³⁴ U	2.5E-01 $\pm$ 35%
	²³⁵ U	2.8E-02 $\pm$ 64%		²³⁵ U	1.5E-02 $\pm$ 80%
	²³⁸ U	1.7E-01 $\pm$ 37%		²³⁸ U	2.3E-01 $\pm$ 35%
	²³⁸ Pu	5.6E-03 $\pm$ 232%		²³⁸ Pu	1.2E-02 $\pm$ 183%
	^{239,240} Pu	3.6E-01 $\pm$ 33%		^{239,240} Pu	5.8E-02 $\pm$ 48%

Table 4-5 1999 Soil Sampling Results, 200/600 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D113	⁶⁰ Co	5.4E-03 $\pm$ 91%	D115	⁶⁰ Co	-2.0E-03 $\pm$ 150%
	⁶⁵ Zn	-8.7E-03 $\pm$ 161%		⁶⁵ Zn	-2.0E-03 $\pm$ 410%
	⁹⁰ Sr	-9.7E-02 $\pm$ 100%		⁹⁰ Sr	-4.5E-02 $\pm$ 244%
	¹⁰³ Ru	4.2E-04 $\pm$ 1000%		¹⁰³ Ru	-1.2E-03 $\pm$ 333%
	¹⁰⁶ Ru	-1.3E-02 $\pm$ 338%		¹⁰⁶ Ru	7.7E-03 $\pm$ 364%
	¹¹³ Sn	2.0E-03 $\pm$ 360%		¹¹³ Sn	-3.7E-03 $\pm$ 130%
	¹²⁵ Sb	-5.8E-03 $\pm$ 241%		¹²⁵ Sb	4.9E-03 $\pm$ 200%
	¹³⁴ Cs	3.2E-02 $\pm$ 24%		¹³⁴ Cs	3.1E-02 $\pm$ 23%
	¹³⁷ Cs	2.5E-02 $\pm$ 30%		¹³⁷ Cs	4.8E-01 $\pm$ 13%
	¹⁴⁴ Ce	-2.3E-02 $\pm$ 209%		¹⁴⁴ Ce	-4.0E-02 $\pm$ 100%
	¹⁵² Eu	-8.9E-03 $\pm$ 202%		¹⁵² Eu	-1.1E-02 $\pm$ 100%
	¹⁵⁴ Eu	-3.8E-02 $\pm$ 100%		¹⁵⁴ Eu	1.0E-03 $\pm$ 1000%
	¹⁵⁵ Eu	1.9E-02 $\pm$ 132%		¹⁵⁵ Eu	4.6E-02 $\pm$ 43%
	²³⁴ U	1.9E-01 $\pm$ 36%		²³⁴ U	2.0E-01 $\pm$ 36%
	²³⁵ U	1.2E-02 $\pm$ 82%		²³⁵ U	2.1E-02 $\pm$ 71%
	²³⁸ U	2.2E-01 $\pm$ 35%		²³⁸ U	1.9E-01 $\pm$ 36%
	²³⁸ Pu	-8.0E-03 $\pm$ 350%		²³⁸ Pu	-9.3E-03 $\pm$ 258%
	^{239,240} Pu	6.4E-03 $\pm$ 188%		^{239,240} Pu	2.1E-02 $\pm$ 67%

Table 4-6 1999 Soil Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D116	⁶⁰ Co	-5.0E-03 $\pm$ 100%	D116 (Duplicate)	⁶⁰ Co	-2.1E-03 $\pm$ 281%
	⁶⁵ Zn	-2.5E-03 $\pm$ 560%		⁶⁵ Zn	1.9E-02 $\pm$ 84%
	⁹⁰ Sr	9.0E-01 $\pm$ 34%		⁹⁰ Sr	1.1E+00 $\pm$ 30%
	¹⁰³ Ru	-1.6E-03 $\pm$ 288%		¹⁰³ Ru	2.6E-04 $\pm$ 1000%
	¹⁰⁶ Ru	-3.6E-03 $\pm$ 1000%		¹⁰⁶ Ru	-5.1E-02 $\pm$ 100%
	¹¹³ Sn	2.2E-03 $\pm$ 318%		¹¹³ Sn	-6.1E-03 $\pm$ 100%
	¹²⁵ Sb	-4.8E-03 $\pm$ 292%		¹²⁵ Sb	5.2E-03 $\pm$ 269%
	¹³⁴ Cs	2.6E-02 $\pm$ 37%		¹³⁴ Cs	2.4E-02 $\pm$ 39%
	¹³⁷ Cs	1.8E-01 $\pm$ 15%		¹³⁷ Cs	1.4E-01 $\pm$ 18%
	¹⁴⁴ Ce	2.4E-02 $\pm$ 208%		¹⁴⁴ Ce	-1.2E-02 $\pm$ 300%
	¹⁵² Eu	-1.3E-02 $\pm$ 138%		¹⁵² Eu	-8.7E-03 $\pm$ 172%
	¹⁵⁴ Eu	-2.0E-02 $\pm$ 100%		¹⁵⁴ Eu	-1.4E-02 $\pm$ 129%
	¹⁵⁵ Eu	1.1E-02 $\pm$ 218%		¹⁵⁵ Eu	7.9E-03 $\pm$ 253%
	²³⁴ U	3.4E-01 $\pm$ 35%		²³⁴ U	3.3E-01 $\pm$ 36%
	²³⁵ U	1.6E-01 $\pm$ 42%		²³⁵ U	3.5E-02 $\pm$ 60%
	²³⁸ U	2.9E-01 $\pm$ 38%		²³⁸ U	2.8E-01 $\pm$ 35%
	²³⁸ Pu	-1.6E-02 $\pm$ 188%		²³⁸ Pu	4.4E-03 $\pm$ 727%
	^{239,240} Pu	2.8E-02 $\pm$ 61%		^{239,240} Pu	2.2E-02 $\pm$ 68%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D117	⁶⁰ Co	-3.4E-03 $\pm$ 171%	D118	⁶⁰ Co	2.5E-03 $\pm$ 200%
	⁶⁵ Zn	4.3E-03 $\pm$ 349%		⁶⁵ Zn	-4.8E-03 $\pm$ 271%
	⁹⁰ Sr	1.5E+00 $\pm$ 25%		⁹⁰ Sr	7.1E-01 $\pm$ 39%
	¹⁰³ Ru	-3.6E-03 $\pm$ 139%		¹⁰³ Ru	-2.5E-03 $\pm$ 188%
	¹⁰⁶ Ru	-3.6E-03 $\pm$ 1000%		¹⁰⁶ Ru	4.2E-03 $\pm$ 1000%
	¹¹³ Sn	-4.9E-03 $\pm$ 131%		¹¹³ Sn	-4.2E-03 $\pm$ 150%
	¹²⁵ Sb	-1.5E-03 $\pm$ 867%		¹²⁵ Sb	3.7E-03 $\pm$ 351%
	¹³⁴ Cs	2.7E-02 $\pm$ 34%		¹³⁴ Cs	2.5E-02 $\pm$ 30%
	¹³⁷ Cs	8.6E-02 $\pm$ 19%		¹³⁷ Cs	5.6E-02 $\pm$ 23%
	¹⁴⁴ Ce	-1.8E-02 $\pm$ 211%		¹⁴⁴ Ce	-2.5E-02 $\pm$ 180%
	¹⁵² Eu	-2.4E-02 $\pm$ 100%		¹⁵² Eu	-2.1E-03 $\pm$ 762%
	¹⁵⁴ Eu	-2.6E-03 $\pm$ 731%		¹⁵⁴ Eu	-1.2E-02 $\pm$ 133%
	¹⁵⁵ Eu	3.9E-02 $\pm$ 51%		¹⁵⁵ Eu	2.5E-02 $\pm$ 96%
	²³⁴ U	3.5E-01 $\pm$ 34%		²³⁴ U	5.6E-01 $\pm$ 34%
	²³⁵ U	5.3E-02 $\pm$ 58%		²³⁵ U	8.9E-02 $\pm$ 48%
	²³⁸ U	3.3E-01 $\pm$ 36%		²³⁸ U	5.0E-01 $\pm$ 34%
	²³⁸ Pu	1.9E-02 $\pm$ 179%		²³⁸ Pu	-1.0E-02 $\pm$ 280%
	^{239,240} Pu	3.2E-02 $\pm$ 59%		^{239,240} Pu	1.2E-02 $\pm$ 100%

Table 4-6 1999 Soil Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D119	⁶⁰ Co	7.5E-04 $\pm$ 680%	D121	⁶⁰ Co	-8.9E-04 $\pm$ 663%
	⁶⁵ Zn	2.9E-03 $\pm$ 483%		⁶⁵ Zn	3.4E-03 $\pm$ 471%
	⁹⁰ Sr	9.3E-01 $\pm$ 35%		⁹⁰ Sr	1.2E+00 $\pm$ 32%
	¹⁰³ Ru	-2.0E-03 $\pm$ 260%		¹⁰³ Ru	-3.4E-03 $\pm$ 159%
	¹⁰⁶ Ru	3.8E-02 $\pm$ 121%		¹⁰⁶ Ru	3.0E-03 $\pm$ 1000%
	¹¹³ Sn	2.3E-03 $\pm$ 300%		¹¹³ Sn	1.2E-03 $\pm$ 633%
	¹²⁵ Sb	-8.9E-03 $\pm$ 169%		¹²⁵ Sb	-1.7E-02 $\pm$ 100%
	¹³⁴ Cs	2.6E-02 $\pm$ 38%		¹³⁴ Cs	2.0E-02 $\pm$ 34%
	¹³⁷ Cs	1.8E-01 $\pm$ 15%		¹³⁷ Cs	9.1E-02 $\pm$ 19%
	¹⁴⁴ Ce	9.2E-03 $\pm$ 565%		¹⁴⁴ Ce	1.7E-02 $\pm$ 359%
	¹⁵² Eu	-2.8E-03 $\pm$ 607%		¹⁵² Eu	5.0E-04 $\pm$ 1000%
	¹⁵⁴ Eu	-8.1E-03 $\pm$ 210%		¹⁵⁴ Eu	-1.6E-02 $\pm$ 119%
	¹⁵⁵ Eu	2.4E-02 $\pm$ 121%		¹⁵⁵ Eu	4.7E-03 $\pm$ 596%
	²³⁴ U	3.9E+00 $\pm$ 31%		²³⁴ U	1.4E+00 $\pm$ 32%
	²³⁵ U	5.3E-01 $\pm$ 32%		²³⁵ U	1.2E-01 $\pm$ 41%
	²³⁸ U	3.9E+00 $\pm$ 31%		²³⁸ U	1.2E+00 $\pm$ 32%
	²³⁸ Pu	-1.8E-02 $\pm$ 200%		²³⁸ Pu	7.8E-03 $\pm$ 359%
	^{239,240} Pu	9.7E-02 $\pm$ 45%		^{239,240} Pu	6.0E-02 $\pm$ 47%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D123	⁶⁰ Co	-2.6E-03 $\pm$ 200%	D123 (Duplicate)	⁶⁰ Co	2.0E-03 $\pm$ 240%
	⁶⁵ Zn	3.7E-03 $\pm$ 405%		⁶⁵ Zn	-1.2E-03 $\pm$ 1000%
	⁹⁰ Sr	9.9E-01 $\pm$ 31%		⁹⁰ Sr	4.1E-01 $\pm$ 61%
	¹⁰³ Ru	-1.3E-03 $\pm$ 408%		¹⁰³ Ru	-3.1E-04 $\pm$ 1000%
	¹⁰⁶ Ru	-3.0E-02 $\pm$ 160%		¹⁰⁶ Ru	5.7E-03 $\pm$ 737%
	¹¹³ Sn	6.0E-03 $\pm$ 120%		¹¹³ Sn	-9.5E-04 $\pm$ 674%
	¹²⁵ Sb	8.5E-03 $\pm$ 176%		¹²⁵ Sb	5.2E-03 $\pm$ 269%
	¹³⁴ Cs	3.1E-02 $\pm$ 35%		¹³⁴ Cs	1.1E-02 $\pm$ 49%
	¹³⁷ Cs	5.8E-02 $\pm$ 24%		¹³⁷ Cs	2.7E-02 $\pm$ 31%
	¹⁴⁴ Ce	2.3E-02 $\pm$ 230%		¹⁴⁴ Ce	-6.0E-04 $\pm$ 1000%
	¹⁵² Eu	-1.5E-02 $\pm$ 127%		¹⁵² Eu	8.4E-03 $\pm$ 214%
	¹⁵⁴ Eu	3.9E-03 $\pm$ 513%		¹⁵⁴ Eu	-4.5E-03 $\pm$ 356%
	¹⁵⁵ Eu	3.7E-02 $\pm$ 73%		¹⁵⁵ Eu	2.8E-02 $\pm$ 89%
	²³⁴ U	3.4E-01 $\pm$ 35%		²³⁴ U	4.2E-01 $\pm$ 33%
	²³⁵ U	2.9E-02 $\pm$ 62%		²³⁵ U	6.9E-02 $\pm$ 48%
	²³⁸ U	3.4E-01 $\pm$ 35%		²³⁸ U	3.7E-01 $\pm$ 35%
	²³⁸ Pu	1.7E-02 $\pm$ 182%		²³⁸ Pu	5.3E-02 $\pm$ 66%
	^{239,240} Pu	1.3E-02 $\pm$ 100%		^{239,240} Pu	2.7E-02 $\pm$ 74%

Table 4-6 1999 Soil Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D124	⁶⁰ Co	6.7E-04 $\pm$ 910%	D125	⁶⁰ Co	1.3E-03 $\pm$ 377%
	⁶⁵ Zn	1.2E-02 $\pm$ 133%		⁶⁵ Zn	2.8E-03 $\pm$ 464%
	⁹⁰ Sr	1.1E+00 $\pm$ 30%		⁹⁰ Sr	1.3E+00 $\pm$ 25%
	¹⁰³ Ru	7.5E-04 $\pm$ 693%		¹⁰³ Ru	-1.8E-03 $\pm$ 272%
	¹⁰⁶ Ru	1.4E-02 $\pm$ 343%		¹⁰⁶ Ru	2.6E-02 $\pm$ 181%
	¹¹³ Sn	4.3E-04 $\pm$ 1000%		¹¹³ Sn	4.7E-03 $\pm$ 140%
	¹²⁵ Sb	1.5E-02 $\pm$ 100%		¹²⁵ Sb	3.4E-03 $\pm$ 412%
	¹³⁴ Cs	1.8E-02 $\pm$ 43%		¹³⁴ Cs	3.7E-03 $\pm$ 62%
	¹³⁷ Cs	1.1E-01 $\pm$ 18%		¹³⁷ Cs	1.0E-01 $\pm$ 18%
	¹⁴⁴ Ce	9.7E-03 $\pm$ 402%		¹⁴⁴ Ce	-6.8E-03 $\pm$ 735%
	¹⁵² Eu	-4.7E-03 $\pm$ 319%		¹⁵² Eu	-9.1E-03 $\pm$ 176%
	¹⁵⁴ Eu	-1.4E-02 $\pm$ 129%		¹⁵⁴ Eu	-4.4E-03 $\pm$ 364%
	¹⁵⁵ Eu	4.2E-02 $\pm$ 50%		¹⁵⁵ Eu	-3.1E-03 $\pm$ 806%
	²³⁴ U	3.1E-01 $\pm$ 35%		²³⁴ U	3.1E-01 $\pm$ 35%
	²³⁵ U	1.8E-02 $\pm$ 72%		²³⁵ U	4.0E-02 $\pm$ 55%
	²³⁸ U	3.4E-01 $\pm$ 35%		²³⁸ U	2.9E-01 $\pm$ 34%
	²³⁸ Pu	-1.2E-02 $\pm$ 217%		²³⁸ Pu	-5.8E-03 $\pm$ 483%
	^{239,240} Pu	2.3E-02 $\pm$ 65%		^{239,240} Pu	2.1E-02 $\pm$ 71%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D126	⁶⁰ Co	-1.8E-03 $\pm$ 228%	D127	⁶⁰ Co	-4.4E-04 $\pm$ 1000%
	⁶⁵ Zn	7.6E-03 $\pm$ 158%		⁶⁵ Zn	-1.9E-02 $\pm$ 100%
	⁹⁰ Sr	5.7E-01 $\pm$ 49%		⁹⁰ Sr	9.0E-01 $\pm$ 30%
	¹⁰³ Ru	2.1E-03 $\pm$ 219%		¹⁰³ Ru	3.0E-03 $\pm$ 200%
	¹⁰⁶ Ru	9.9E-03 $\pm$ 394%		¹⁰⁶ Ru	3.6E-02 $\pm$ 139%
	¹¹³ Sn	-2.8E-03 $\pm$ 211%		¹¹³ Sn	-1.4E-03 $\pm$ 593%
	¹²⁵ Sb	2.8E-03 $\pm$ 429%		¹²⁵ Sb	2.3E-02 $\pm$ 74%
	¹³⁴ Cs	2.6E-02 $\pm$ 34%		¹³⁴ Cs	2.4E-02 $\pm$ 42%
	¹³⁷ Cs	2.4E-02 $\pm$ 32%		¹³⁷ Cs	1.2E-01 $\pm$ 19%
	¹⁴⁴ Ce	-1.2E-02 $\pm$ 342%		¹⁴⁴ Ce	-6.9E-02 $\pm$ 100%
	¹⁵² Eu	-5.6E-03 $\pm$ 250%		¹⁵² Eu	5.6E-03 $\pm$ 393%
	¹⁵⁴ Eu	9.9E-04 $\pm$ 1000%		¹⁵⁴ Eu	-1.5E-02 $\pm$ 120%
	¹⁵⁵ Eu	3.5E-02 $\pm$ 77%		¹⁵⁵ Eu	2.4E-02 $\pm$ 121%
	²³⁴ U	1.1E+00 $\pm$ 32%		²³⁴ U	1.7E-01 $\pm$ 36%
	²³⁵ U	8.5E-02 $\pm$ 46%		²³⁵ U	2.3E-02 $\pm$ 61%
	²³⁸ U	9.3E-01 $\pm$ 32%		²³⁸ U	1.8E-01 $\pm$ 36%
	²³⁸ Pu	-1.5E-02 $\pm$ 240%		²³⁸ Pu	8.6E-03 $\pm$ 291%
	^{239,240} Pu	7.1E-02 $\pm$ 51%		^{239,240} Pu	1.4E-02 $\pm$ 79%

Table 4-6 1999 Soil Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D128	⁶⁰ Co	-2.0E-03 $\pm$ 260%	D129	⁶⁰ Co	-1.7E-03 $\pm$ 282%
	⁶⁵ Zn	9.2E-04 $\pm$ 1000%		⁶⁵ Zn	1.5E-03 $\pm$ 800%
	⁹⁰ Sr	3.4E-01 $\pm$ 71%		⁹⁰ Sr	5.3E-01 $\pm$ 55%
	¹⁰³ Ru	-1.5E-03 $\pm$ 347%		¹⁰³ Ru	-4.3E-03 $\pm$ 109%
	¹⁰⁶ Ru	-1.8E-03 $\pm$ 1000%		¹⁰⁶ Ru	-4.2E-03 $\pm$ 952%
	¹¹³ Sn	-5.8E-03 $\pm$ 121%		¹¹³ Sn	-3.3E-03 $\pm$ 191%
	¹²⁵ Sb	7.6E-03 $\pm$ 184%		¹²⁵ Sb	3.3E-03 $\pm$ 424%
	¹³⁴ Cs	2.8E-02 $\pm$ 31%		¹³⁴ Cs	1.6E-02 $\pm$ 47%
	¹³⁷ Cs	1.1E-01 $\pm$ 17%		¹³⁷ Cs	5.9E-02 $\pm$ 20%
	¹⁴⁴ Ce	-8.7E-03 $\pm$ 575%		¹⁴⁴ Ce	-1.3E-02 $\pm$ 362%
	¹⁵² Eu	-1.0E-02 $\pm$ 170%		¹⁵² Eu	-1.3E-04 $\pm$ 1000%
	¹⁵⁴ Eu	2.6E-03 $\pm$ 692%		¹⁵⁴ Eu	-1.7E-02 $\pm$ 100%
	¹⁵⁵ Eu	5.1E-02 $\pm$ 69%		¹⁵⁵ Eu	3.5E-02 $\pm$ 66%
	²³⁴ U	2.9E-01 $\pm$ 34%		²³⁴ U	3.4E-01 $\pm$ 35%
	²³⁵ U	3.7E-02 $\pm$ 59%		²³⁵ U	4.7E-02 $\pm$ 55%
	²³⁸ U	2.9E-01 $\pm$ 34%		²³⁸ U	3.4E-01 $\pm$ 35%
	²³⁸ Pu	-3.5E-03 $\pm$ 886%		²³⁸ Pu	-2.0E-02 $\pm$ 170%
	^{239,240} Pu	2.5E-02 $\pm$ 64%		^{239,240} Pu	1.8E-02 $\pm$ 83%

Location	Isotope	Result $\pm$ Error
D130	⁶⁰ Co	-5.3E-04 $\pm$ 981%
	⁶⁵ Zn	-1.0E-02 $\pm$ 150%
	⁹⁰ Sr	3.2E-01 $\pm$ 72%
	¹⁰³ Ru	5.0E-03 $\pm$ 100%
	¹⁰⁶ Ru	-3.8E-03 $\pm$ 1000%
	¹¹³ Sn	-2.8E-03 $\pm$ 261%
	¹²⁵ Sb	6.6E-03 $\pm$ 227%
	¹³⁴ Cs	2.2E-02 $\pm$ 39%
	¹³⁷ Cs	2.9E-02 $\pm$ 30%
	¹⁴⁴ Ce	-4.4E-04 $\pm$ 1000%
	¹⁵² Eu	-1.2E-02 $\pm$ 158%
	¹⁵⁴ Eu	-1.3E-02 $\pm$ 138%
	¹⁵⁵ Eu	3.8E-02 $\pm$ 84%
	²³⁴ U	2.9E-01 $\pm$ 34%
	²³⁵ U	1.1E-01 $\pm$ 42%
	²³⁸ U	2.7E-01 $\pm$ 35%
	²³⁸ Pu	3.2E-02 $\pm$ 88%
	^{239,240} Pu	1.5E-02 $\pm$ 73%

Table 4-7 1999 Soil Sampling Results, Environmental Restoration Contractor Projects
(pCi/g $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D146 (ERDF)	⁶⁰ Co	-5.0E-03 $\pm$ 100%	D147 (100-D)	⁶⁰ Co	9.8E-03 $\pm$ 79%
	⁶⁵ Zn	-5.6E-03 $\pm$ 214%		⁶⁵ Zn	2.0E-01 $\pm$ 24%
	⁹⁰ Sr	3.2E-01 $\pm$ 34%		⁹⁰ Sr	3.7E-01 $\pm$ 65%
	¹⁰³ Ru	2.2E-03 $\pm$ 209%		¹⁰³ Ru	5.2E-05 $\pm$ 1000%
	¹⁰⁶ Ru	1.2E-02 $\pm$ 333%		¹⁰⁶ Ru	-1.4E-02 $\pm$ 471%
	¹¹³ Sn	-1.2E-02 $\pm$ 100%		¹¹³ Sn	-1.4E-02 $\pm$ 100%
	¹²⁵ Sb	-6.0E-03 $\pm$ 217%		¹²⁵ Sb	-6.0E-03 $\pm$ 333%
	¹³⁴ Cs	3.0E-02 $\pm$ 33%		¹³⁴ Cs	3.0E-02 $\pm$ 50%
	¹³⁷ Cs	6.4E-03 $\pm$ 92%		¹³⁷ Cs	3.0E-01 $\pm$ 17%
	¹⁴⁴ Ce	-8.8E-03 $\pm$ 534%		¹⁴⁴ Ce	6.3E-03 $\pm$ 825%
	¹⁵² Eu	-1.2E-02 $\pm$ 117%		¹⁵² Eu	9.5E-01 $\pm$ 6%
	¹⁵⁴ Eu	3.4E-03 $\pm$ 441%		¹⁵⁴ Eu	8.9E-02 $\pm$ 18%
	¹⁵⁵ Eu	3.0E-02 $\pm$ 77%		¹⁵⁵ Eu	4.2E-02 $\pm$ 69%
	²³⁴ U	1.9E-01 $\pm$ 35%		²³⁴ U	2.8E-01 $\pm$ 36%
	²³⁵ U	1.2E-02 $\pm$ 73%		²³⁵ U	3.6E-02 $\pm$ 64%
	²³⁸ U	1.7E-01 $\pm$ 35%		²³⁸ U	2.6E-01 $\pm$ 37%
	²³⁸ Pu	-5.9E-03 $\pm$ 373%		²³⁸ Pu	-9.1E-03 $\pm$ 165%
	^{239,240} Pu	1.5E-03 $\pm$ 447%		^{239,240} Pu	1.8E-02 $\pm$ 72%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D148 (100-D)	⁶⁰ Co	7.2E-03 $\pm$ 88%	D149 (100-B/C)	⁶⁰ Co	-6.3E-04 $\pm$ 952%
	⁶⁵ Zn	2.4E-02 $\pm$ 142%		⁶⁵ Zn	-7.9E-03 $\pm$ 215%
	⁹⁰ Sr	2.6E-01 $\pm$ 69%		⁹⁰ Sr	1.1E-01 $\pm$ 173%
	¹⁰³ Ru	-1.5E-03 $\pm$ 473%		¹⁰³ Ru	-2.5E-03 $\pm$ 280%
	¹⁰⁶ Ru	-1.4E-02 $\pm$ 407%		¹⁰⁶ Ru	-2.9E-02 $\pm$ 200%
	¹¹³ Sn	9.8E-04 $\pm$ 898%		¹¹³ Sn	-1.2E-02 $\pm$ 100%
	¹²⁵ Sb	5.1E-03 $\pm$ 353%		¹²⁵ Sb	7.7E-03 $\pm$ 234%
	¹³⁴ Cs	3.3E-02 $\pm$ 39%		¹³⁴ Cs	3.2E-02 $\pm$ 30%
	¹³⁷ Cs	3.0E-01 $\pm$ 15%		¹³⁷ Cs	3.7E-01 $\pm$ 15%
	¹⁴⁴ Ce	1.6E-02 $\pm$ 363%		¹⁴⁴ Ce	1.4E-02 $\pm$ 429%
	¹⁵² Eu	2.5E-01 $\pm$ 11%		¹⁵² Eu	2.2E-02 $\pm$ 64%
	¹⁵⁴ Eu	2.6E-02 $\pm$ 81%		¹⁵⁴ Eu	-8.1E-03 $\pm$ 259%
	¹⁵⁵ Eu	1.4E-02 $\pm$ 221%		¹⁵⁵ Eu	3.8E-02 $\pm$ 100%
	²³⁴ U	2.5E-01 $\pm$ 35%		²³⁴ U	1.6E-01 $\pm$ 38%
	²³⁵ U	2.8E-02 $\pm$ 61%		²³⁵ U	2.0E-02 $\pm$ 80%
	²³⁸ U	1.8E-01 $\pm$ 37%		²³⁸ U	1.9E-01 $\pm$ 37%
	²³⁸ Pu	5.2E-03 $\pm$ 269%		²³⁸ Pu	1.2E-02 $\pm$ 117%
	^{239,240} Pu	6.9E-03 $\pm$ 159%		^{239,240} Pu	8.3E-03 $\pm$ 110%

Table 4-7 1999 Soil Sampling Results, Environmental Restoration Contractor Projects
(pCi/g $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
D151 (100-H)	⁶⁰ Co	3.6E-03 $\pm$ 119%	D152 (100-H)	⁶⁰ Co	3.2E-02 $\pm$ 31%
	⁶⁵ Zn	-7.1E-03 $\pm$ 155%		⁶⁵ Zn	5.2E-02 $\pm$ 33%
	⁹⁰ Sr	3.1E-01 $\pm$ 65%		⁹⁰ Sr	9.3E-02 $\pm$ 215%
	¹⁰³ Ru	-2.8E-03 $\pm$ 171%		¹⁰³ Ru	5.0E-03 $\pm$ 150%
	¹⁰⁶ Ru	1.3E-02 $\pm$ 277%		¹⁰⁶ Ru	5.2E-02 $\pm$ 140%
	¹¹³ Sn	-6.2E-03 $\pm$ 100%		¹¹³ Sn	-8.0E-03 $\pm$ 120%
	¹²⁵ Sb	1.7E-02 $\pm$ 76%		¹²⁵ Sb	1.2E-02 $\pm$ 150%
	¹³⁴ Cs	3.5E-02 $\pm$ 24%		¹³⁴ Cs	3.6E-02 $\pm$ 33%
	¹³⁷ Cs	7.9E-01 $\pm$ 13%		¹³⁷ Cs	5.1E-01 $\pm$ 14%
	¹⁴⁴ Ce	-1.9E-03 $\pm$ 1000%		¹⁴⁴ Ce	-3.1E-02 $\pm$ 210%
	¹⁵² Eu	-1.3E-02 $\pm$ 100%		¹⁵² Eu	3.6E-01 $\pm$ 8%
	¹⁵⁴ Eu	-1.5E-02 $\pm$ 100%		¹⁵⁴ Eu	4.1E-02 $\pm$ 73%
	¹⁵⁵ Eu	4.6E-02 $\pm$ 52%		¹⁵⁵ Eu	4.1E-02 $\pm$ 93%
	²³⁴ U	2.3E-01 $\pm$ 36%		²³⁴ U	1.9E-01 $\pm$ 37%
	²³⁵ U	2.9E-02 $\pm$ 69%		²³⁵ U	1.3E-02 $\pm$ 85%
	²³⁸ U	1.9E-01 $\pm$ 38%		²³⁸ U	1.5E-01 $\pm$ 38%
	²³⁸ Pu	9.1E-03 $\pm$ 165%		²³⁸ Pu	3.5E-03 $\pm$ 486%
	^{239,240} Pu	4.7E-02 $\pm$ 49%		^{239,240} Pu	2.1E-02 $\pm$ 71%
Location	Isotope	Result $\pm$ Error			
D153 (100-B/C)	⁶⁰ Co	5.8E-03 $\pm$ 110%			
	⁶⁵ Zn	-1.9E-03 $\pm$ 947%			
	⁹⁰ Sr	9.2E-02 $\pm$ 152%			
	¹⁰³ Ru	7.7E-03 $\pm$ 100%			
	¹⁰⁶ Ru	7.1E-03 $\pm$ 873%			
	¹¹³ Sn	-8.3E-04 $\pm$ 1000%			
	¹²⁵ Sb	5.9E-03 $\pm$ 322%			
	¹³⁴ Cs	3.1E-02 $\pm$ 35%			
	¹³⁷ Cs	3.8E-01 $\pm$ 14%			
	¹⁴⁴ Ce	-1.1E-02 $\pm$ 545%			
	¹⁵² Eu	3.2E-03 $\pm$ 625%			
	¹⁵⁴ Eu	1.1E-02 $\pm$ 191%			
	¹⁵⁵ Eu	6.5E-02 $\pm$ 48%			
	²³⁴ U	2.1E-01 $\pm$ 18%			
	²³⁵ U	4.5E-02 $\pm$ 33%			
	²³⁸ U	1.5E-01 $\pm$ 20%			
	²³⁸ Pu	5.7E-02 $\pm$ 119%			
	^{239,240} Pu	1.6E-02 $\pm$ 119%			

Figure 4-10 1999 Vegetation Sampling Locations, 100-N Area

Figure 4-11 1999 Vegetation Sampling Locations, 200 East Area

Figure 4-12 1999 Vegetation Sampling Locations, 200 West Area

Figure 4-13 1999 Vegetation Sampling Locations, 600 Area

WMNW/EMI/8-99/FIGE-10

Figure 4-14 1999 Vegetation Sampling Locations, 300 Area

WMNW/EMI/6-99/FIGE-11

Figure 4-15 1999 Vegetation Sampling Locations, 400 Area

Table 4-8 Historical Average of Selected Radionuclide Concentrations Detected in Vegetation Samples Collected Near the 1301-N Liquid Waste Disposal Facility (pCi/g)

Year	⁶⁰ Co	⁹⁰ Sr	¹³⁷ Cs	²³⁸ Pu	^{239,240} Pu
1980	4.0 E+00	NR	1.1 E+00	NR	NR
1981	1.2 E+01	1.8 E+00	1.8 E+00	NR	7.1 E-03
1982	1.6 E+00	1.2 E-01	2.6 E-01	NR	2.6 E-03
1983	1.9 E+00	6.0 E-01	3.9 E-01	NR	3.2 E-03
1984	1.0 E+00	1.2 E-01	8.3 E-02	NR	8.5 E-04
1985	1.7 E+00	1.9 E+00	1.0 E-01	NR	1.5 E-03
1986	3.5 E+00	7.3 E-02	6.5 E-01	NR	2.6 E-03
1987	2.8 E+00	6.3 E-02	2.0 E-01	1.2 E-03	5.6 E-03
1988	2.0 E+00	1.2 E-01	1.3 E-01	4.3 E-04	1.7 E-03
1989	1.3 E+00	3.8 E-02	1.5 E-01	2.8 E-04	2.0 E-03
1990	1.3 E+00	3.1 E-02	1.2 E-01	2.7 E-04	1.1 E-03
1991	6.3 E-01	1.5 E-02	6.0 E-01	8.1 E-05	1.2 E-03
1992	2.0 E-01	6.5 E-03	2.0 E-01	-2.8 E-05	1.6 E-04
1993	2.2 E-01	5.7 E-02	2.1 E-01	-7.8 E-04	4.1 E-04
1994	2.5 E+01	4.8 E+00	1.8 E+00	3.3 E-02	2.0 E-01
1995	5.4 E-02	6.4 E-02	1.2 E-01	1.3 E-03	8.6 E-03
1996	6.1 E+01	5.8 E+02	2.8 E+03	-1.8 E-02	-9.6 E-03
1997	4.2 E-01	4.9 E-01	1.4 E-01	8.3 E-03	ND
1998	5.3 E-01	1.4 E-01	5.0 E+01	ND	7.1 E-03
1999	1.2 E+00	1.9 E+02	3.5 E+02	<4.1 E-03	1.7 E-02

ND = Not detected.

NR = Not reported.

Negative value indicates results at or below background levels of radioactivity.

**Table 4-9 Historical Average of Selected Radionuclide Concentrations
Detected in Vegetation Samples at the 100-N Area (pCi/g)**

Year	⁶⁰ Co	⁹⁰ Sr	¹³⁷ Cs	²³⁸ Pu	^{239,240} Pu
1980	1.0 E+00	NR	2.8 E-01	NR	NR
1981	2.5 E+01	5.8 E-01	7.1 E-01	NR	2.1 E-02
1982	1.5 E+00	2.0 E-01	1.3 E-01	NR	7.8 E-03
1983	1.0 E+00	2.9 E-01	9.0 E-02	NR	8.6 E-03
1984	4.6 E-01	8.1 E-02	9.0 E-02	NR	1.3 E-03
1985	1.4 E+00	5.1 E-02	1.6 E-01	NR	8.7 E-04
1986	9.5 E-01	2.2 E-01	7.9 E-01	NR	1.1 E-03
1987	7.0 E-01	2.6 E-01	9.4 E-02	1.3 E-04	5.7 E-04
1988	8.0 E-01	2.5 E-01	1.6 E-01	1.7 E-04	6.6 E-04
1989	3.2 E-01	6.8 E-02	1.5 E-01	1.1 E-04	8.7 E-04
1990	1.1 E-01	9.3 E-03	3.6 E-02	-9.6 E-05	1.7 E-04
1991	1.3 E-01	9.4 E-03	3.4 E-03	1.6 E-04	2.5 E-03
1992	5.6 E-02	5.6 E-02	7.8 E-02	-5.2 E-06	1.3 E-04
1993	1.0 E-01	3.6 E-02	6.5 E-02	-5.2 E-05	3.3 E-04
1994	6.5 E+00	2.5 E+01	5.8 E-01	8.6 E-03	5.3 E-02
1995	3.0 E-02	5.4 E+00	8.1 E-02	6.8 E-04	3.3 E-03
1996	2.4 E+00	2.3 E+02	1.1 E+03	-7.6 E-03	-5.1 E-03
1997	4.2 E-01	3.6 E+00	1.6 E-01	4.8 E-03	ND
1998	6.2 E-01	1.2 E+01	3.8 E+01	8.7 E-03	4.2 E-03
1999	6.1 E-01	9.1 E+01	2.5 E+02	-5.3 E-03	2.2 E-02

ND = Not detected.

NR = Not reported.

Negative value indicates results at or below background levels of radioactivity.

Table 4-10 Historical Average of Selected Radionuclide Concentrations
Detected in Vegetation Samples at N-Springs (pCi/g)

Year	⁶⁰ Co	⁹⁰ Sr	¹³⁷ Cs	²³⁸ Pu	^{239,240} Pu
1980	5.6 E+00	NR	4.4 E-01	NR	NR
1981	3.3 E+00	2.0 E+02	NR	NR	3.7 E-03
1982	2.8 E+00	4.8 E+02	NR	NR	8.3 E-03
1983	3.0 E+00	3.3 E+02	4.0 E-02	NR	8.0 E-03
1984	NS	NS	NS	NS	NS
1985	1.2 E+00	4.2 E+02	1.7 E-01	NR	4.4 E-04
1986	1.1 E+00	2.2 E+02	2.1 E-01	NR	4.2 E-04
1987	9.0 E-01	2.9 E+02	1.1 E-01	-1.3 E-04	7.6 E-04
1988	1.4 E+00	1.2 E+02	2.0 E-01	8.5 E-05	2.0 E-04
1989	4.3 E-01	8.0 E+01	1.5 E-01	1.1 E-03	4.5 E-04
1990	NS	NS	NS	NS	NS
1991	1.5 E-01	3.1 E+01	1.6 E-01	1.2 E-04	2.9 E-03
1992	4.2 E-02	7.8 E+01	3.0 E-01	1.5 E-04	2.9 E-04
1993	4.5 E-01	2.6 E+02	2.0 E-01	2.3 E-03	-8.5 E-04
1994	1.4 E-01	6.0 E+01	1.5 E-01	3.6 E-04	2.0 E-03
1995	1.4 E-02	1.3 E+01	9.4 E-02	5.9 E-04	2.8 E-03
1996	1.0 E-02	1.8 E+01	3.8 E-02	1.7 E-03	-1.5 E-03
1997	ND	6.2 E+00	1.8 E-01	4.8 E-03	ND
1998	6.8 E-02	2.1 E+01	ND	ND	2.8 E-03
1999	<8.6 E-03	1.4 E+00	7.7 E-01	-2.8 E-02	<7.3 E-03

ND = Not detected.

NR = Not reported.

NS = No sample results.

Negative value indicates results at or below background levels of radioactivity.

Table 4-11 1999 Vegetation Sampling Results, 100-N Area (pCi/g $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error
Y702	⁶⁰ Co	2.4E+00 $\pm$ 9%
	⁶⁵ Zn	-6.4E-03 $\pm$ 1000%
	⁹⁰ Sr	4.6E+02 $\pm$ 15%
	¹⁰³ Ru	-1.3E-02 $\pm$ 846%
	¹⁰⁶ Ru	4.1E-01 $\pm$ 341%
	¹¹³ Sn	8.7E-02 $\pm$ 276%
	¹²⁵ Sb	2.8E-01 $\pm$ 271%
	¹³⁴ Cs	1.4E-01 $\pm$ 60%
	¹³⁷ Cs	4.1E+02 $\pm$ 13%
	¹⁴⁴ Ce	-1.3E+00 $\pm$ 100%
	¹⁵² Eu	-2.7E-01 $\pm$ 252%
	¹⁵⁴ Eu	7.2E-03 $\pm$ 1000%
	¹⁵⁵ Eu	-5.6E-01 $\pm$ 130%
	²³⁴ U	8.2E-03 $\pm$ 68%
	²³⁵ U	1.6E-03 $\pm$ 150%
	²³⁸ U	8.2E-03 $\pm$ 72%
²³⁸ Pu ^{239,240} Pu	²³⁸ Pu	-5.7E-04 $\pm$ 1000%
	^{239,240} Pu	1.1E-02 $\pm$ 59%

Location	Isotope	Result $\pm$ Error
Y703	⁶⁰ Co	4.7E-01 $\pm$ 10%
	⁶⁵ Zn	-1.9E-03 $\pm$ 1000%
	⁹⁰ Sr	1.1E+00 $\pm$ 30%
	¹⁰³ Ru	-3.2E-03 $\pm$ 438%
	¹⁰⁶ Ru	-6.7E-02 $\pm$ 164%
	¹¹³ Sn	-6.8E-03 $\pm$ 235%
	¹²⁵ Sb	-2.0E-02 $\pm$ 170%
	¹³⁴ Cs	-2.9E-03 $\pm$ 448%
	¹³⁷ Cs	1.4E-01 $\pm$ 21%
	¹⁴⁴ Ce	-3.0E-02 $\pm$ 290%
	¹⁵² Eu	1.3E-02 $\pm$ 292%
	¹⁵⁴ Eu	-1.4E-03 $\pm$ 1000%
	¹⁵⁵ Eu	-3.9E-02 $\pm$ 110%
	²³⁴ U	4.5E-02 $\pm$ 56%
	²³⁵ U	1.6E-02 $\pm$ 88%
	²³⁸ U	1.9E-02 $\pm$ 79%
²³⁸ Pu ^{239,240} Pu	²³⁸ Pu	8.7E-03 $\pm$ 414%
	^{239,240} Pu	2.3E-02 $\pm$ 78%

Location	Isotope	Result $\pm$ Error
Y704	⁶⁰ Co	8.6E-01 $\pm$ 11%
	⁶⁵ Zn	-4.9E-02 $\pm$ 190%
	⁹⁰ Sr	9.7E+01 $\pm$ 15%
	¹⁰³ Ru	-1.4E-01 $\pm$ 200%
	¹⁰⁶ Ru	-1.8E-01 $\pm$ 889%
	¹¹³ Sn	-4.5E-02 $\pm$ 778%
	¹²⁵ Sb	1.8E-01 $\pm$ 439%
	¹³⁴ Cs	1.8E-01 $\pm$ 39%
	¹³⁷ Cs	6.3E+02 $\pm$ 13%
	¹⁴⁴ Ce	-1.4E+00 $\pm$ 100%
	¹⁵² Eu	6.7E-01 $\pm$ 110%
	¹⁵⁴ Eu	-2.4E-02 $\pm$ 417%
	¹⁵⁵ Eu	-4.4E-02 $\pm$ 1000%
	²³⁴ U	5.9E-03 $\pm$ 69%
	²³⁵ U	4.9E-03 $\pm$ 73%
	²³⁸ U	3.0E-03 $\pm$ 100%
²³⁸ Pu ^{239,240} Pu	²³⁸ Pu	-2.8E-03 $\pm$ 150%
	^{239,240} Pu	1.4E-03 $\pm$ 121%

Location	Isotope	Result $\pm$ Error
Y708	⁶⁰ Co	7.7E-02 $\pm$ 26%
	⁶⁵ Zn	-7.4E-02 $\pm$ 100%
	⁹⁰ Sr	3.3E-01 $\pm$ 64%
	¹⁰³ Ru	-1.9E-02 $\pm$ 132%
	¹⁰⁶ Ru	-1.5E-01 $\pm$ 133%
	¹¹³ Sn	1.7E-02 $\pm$ 171%
	¹²⁵ Sb	-7.7E-03 $\pm$ 766%
	¹³⁴ Cs	1.0E-02 $\pm$ 210%
	¹³⁷ Cs	5.4E-02 $\pm$ 78%
	¹⁴⁴ Ce	-7.3E-02 $\pm$ 205%
	¹⁵² Eu	2.6E-02 $\pm$ 238%
	¹⁵⁴ Eu	-7.1E-02 $\pm$ 100%
	¹⁵⁵ Eu	-1.2E-02 $\pm$ 633%
	²³⁴ U	3.4E-02 $\pm$ 53%
	²³⁵ U	9.4E-03 $\pm$ 95%
	²³⁸ U	1.7E-02 $\pm$ 76%
²³⁸ Pu ^{239,240} Pu	²³⁸ Pu	1.6E-02 $\pm$ 200%
	^{239,240} Pu	1.1E-02 $\pm$ 164%

Table 4-11 1999 Vegetation Sampling Results, 100-N Area (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
Y710	⁶⁰ Co	6.1E-02 $\pm$ 43%	Y718	⁶⁰ Co	2.7E-02 $\pm$ 170%
	⁶⁵ Zn	3.9E-02 $\pm$ 159%		⁶⁵ Zn	-7.7E-02 $\pm$ 143%
	⁹⁰ Sr	5.8E-01 $\pm$ 41%		⁹⁰ Sr	1.6E+00 $\pm$ 22%
	¹⁰³ Ru	4.0E-02 $\pm$ 88%		¹⁰³ Ru	-3.9E-03 $\pm$ 1000%
	¹⁰⁶ Ru	9.4E-02 $\pm$ 223%		¹⁰⁶ Ru	1.1E-02 $\pm$ 1000%
	¹¹³ Sn	3.4E-03 $\pm$ 824%		¹¹³ Sn	3.1E-02 $\pm$ 181%
	¹²⁵ Sb	4.9E-02 $\pm$ 120%		¹²⁵ Sb	-5.4E-02 $\pm$ 204%
	¹³⁴ Cs	1.2E-02 $\pm$ 192%		¹³⁴ Cs	-9.4E-03 $\pm$ 479%
	¹³⁷ Cs	3.4E-02 $\pm$ 100%		¹³⁷ Cs	7.7E-01 $\pm$ 19%
	¹⁴⁴ Ce	-9.8E-03 $\pm$ 1000%		¹⁴⁴ Ce	1.4E-01 $\pm$ 200%
	¹⁵² Eu	-1.5E-02 $\pm$ 427%		¹⁵² Eu	-1.3E-02 $\pm$ 923%
	¹⁵⁴ Eu	-1.7E-02 $\pm$ 400%		¹⁵⁴ Eu	-1.1E-01 $\pm$ 136%
	¹⁵⁵ Eu	1.9E-02 $\pm$ 458%		¹⁵⁵ Eu	-1.4E-02 $\pm$ 1000%
	²³⁴ U	2.6E-02 $\pm$ 58%		²³⁴ U	4.0E-02 $\pm$ 53%
	²³⁵ U	1.1E-02 $\pm$ 87%		²³⁵ U	1.1E-02 $\pm$ 87%
	²³⁸ U	2.1E-02 $\pm$ 62%		²³⁸ U	2.7E-02 $\pm$ 59%
²³⁸ Pu	²³⁸ Pu	-2.8E-03 $\pm$ 1000%		²³⁸ Pu	6.5E-03 $\pm$ 662%
	^{239,240} Pu	5.6E-03 $\pm$ 150%		^{239,240} Pu	6.5E-03 $\pm$ 151%

Location	Isotope	Result $\pm$ Error
Y719	⁶⁰ Co	-9.9E-03 $\pm$ 212%
	⁶⁵ Zn	3.7E-02 $\pm$ 141%
	⁹⁰ Sr	1.1E+00 $\pm$ 25%
	¹⁰³ Ru	5.8E-03 $\pm$ 397%
	¹⁰⁶ Ru	1.2E-01 $\pm$ 150%
	¹¹³ Sn	-1.3E-02 $\pm$ 223%
	¹²⁵ Sb	-1.8E-02 $\pm$ 322%
	¹³⁴ Cs	1.5E-02 $\pm$ 140%
	¹³⁷ Cs	2.4E-02 $\pm$ 100%
	¹⁴⁴ Ce	8.8E-02 $\pm$ 170%
	¹⁵² Eu	-1.7E-02 $\pm$ 382%
	¹⁵⁴ Eu	-6.3E-03 $\pm$ 968%
	¹⁵⁵ Eu	-3.2E-02 $\pm$ 241%
	²³⁴ U	3.5E-02 $\pm$ 69%
	²³⁵ U	4.6E-02 $\pm$ 59%
	²³⁸ U	4.0E-02 $\pm$ 60%
	²³⁸ Pu	-6.2E-02 $\pm$ 100%
	^{239,240} Pu	8.1E-03 $\pm$ 185%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V001	⁶⁰ Co	6.7E-03 $\pm$ 761%	V003	⁶⁰ Co	6.2E-03 $\pm$ 371%
	⁶⁵ Zn	3.9E-02 $\pm$ 333%		⁶⁵ Zn	-5.0E-02 $\pm$ 100%
	⁹⁰ Sr	2.7E-01 $\pm$ 41%		⁹⁰ Sr	1.6E-01 $\pm$ 60%
	¹⁰³ Ru	1.4E-03 $\pm$ 1000%		¹⁰³ Ru	5.5E-03 $\pm$ 364%
	¹⁰⁶ Ru	9.2E-02 $\pm$ 554%		¹⁰⁶ Ru	-5.4E-03 $\pm$ 1000%
	¹¹³ Sn	2.3E-02 $\pm$ 309%		¹¹³ Sn	-4.3E-03 $\pm$ 558%
	¹²⁵ Sb	8.9E-02 $\pm$ 146%		¹²⁵ Sb	-3.3E-02 $\pm$ 161%
	¹³⁴ Cs	-5.8E-03 $\pm$ 931%		¹³⁴ Cs	-1.2E-02 $\pm$ 192%
	¹³⁷ Cs	7.7E-02 $\pm$ 94%		¹³⁷ Cs	9.4E-02 $\pm$ 38%
	¹⁴⁴ Ce	3.0E-02 $\pm$ 1000%		¹⁴⁴ Ce	2.4E-02 $\pm$ 500%
	¹⁵² Eu	-1.8E-01 $\pm$ 100%		¹⁵² Eu	-4.9E-02 $\pm$ 110%
	¹⁵⁴ Eu	-6.8E-02 $\pm$ 235%		¹⁵⁴ Eu	-4.1E-02 $\pm$ 171%
	¹⁵⁵ Eu	9.9E-03 $\pm$ 1000%		¹⁵⁵ Eu	-1.2E-02 $\pm$ 508%
	²³⁴ U	2.5E-02 $\pm$ 52%		²³⁴ U	1.8E-02 $\pm$ 56%
	²³⁵ U	1.2E-02 $\pm$ 65%		²³⁵ U	3.8E-03 $\pm$ 111%
	²³⁸ U	2.6E-02 $\pm$ 50%		²³⁸ U	1.2E-02 $\pm$ 62%
	²³⁸ Pu	1.0E-02 $\pm$ 89%		²³⁸ Pu	-5.1E-03 $\pm$ 171%
	^{239,240} Pu	5.6E-03 $\pm$ 98%		^{239,240} Pu	5.1E-03 $\pm$ 94%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V009	⁶⁰ Co	2.8E-02 $\pm$ 121%	V011	⁶⁰ Co	-2.8E-02 $\pm$ 150%
	⁶⁵ Zn	2.4E-02 $\pm$ 329%		⁶⁵ Zn	-7.7E-02 $\pm$ 119%
	⁹⁰ Sr	1.7E-01 $\pm$ 65%		⁹⁰ Sr	2.8E-01 $\pm$ 50%
	¹⁰³ Ru	-1.5E-02 $\pm$ 227%		¹⁰³ Ru	2.5E-02 $\pm$ 172%
	¹⁰⁶ Ru	3.2E-02 $\pm$ 906%		¹⁰⁶ Ru	-5.5E-02 $\pm$ 655%
	¹¹³ Sn	-1.7E-02 $\pm$ 259%		¹¹³ Sn	-2.2E-02 $\pm$ 209%
	¹²⁵ Sb	6.1E-02 $\pm$ 139%		¹²⁵ Sb	-1.8E-02 $\pm$ 611%
	¹³⁴ Cs	6.8E-03 $\pm$ 441%		¹³⁴ Cs	-6.6E-03 $\pm$ 545%
	¹³⁷ Cs	7.1E-03 $\pm$ 465%		¹³⁷ Cs	5.2E-02 $\pm$ 85%
	¹⁴⁴ Ce	-1.7E-01 $\pm$ 129%		¹⁴⁴ Ce	-9.6E-02 $\pm$ 292%
	¹⁵² Eu	4.3E-02 $\pm$ 221%		¹⁵² Eu	-5.7E-02 $\pm$ 211%
	¹⁵⁴ Eu	-6.8E-02 $\pm$ 129%		¹⁵⁴ Eu	-5.4E-02 $\pm$ 222%
	¹⁵⁵ Eu	-2.2E-02 $\pm$ 500%		¹⁵⁵ Eu	6.4E-02 $\pm$ 234%
	²³⁴ U	2.9E-02 $\pm$ 45%		²³⁴ U	1.6E-02 $\pm$ 58%
	²³⁵ U	1.1E-02 $\pm$ 68%		²³⁵ U	-9.8E-04 $\pm$ 204%
	²³⁸ U	2.5E-02 $\pm$ 48%		²³⁸ U	1.4E-02 $\pm$ 60%
	²³⁸ Pu	2.7E-03 $\pm$ 241%		²³⁸ Pu	-6.3E-03 $\pm$ 121%
	^{239,240} Pu	5.5E-03 $\pm$ 87%		^{239,240} Pu	8.9E-03 $\pm$ 76%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V015	⁶⁰ Co	-1.7E-03 $\pm$ 1000%	V017	⁶⁰ Co	-2.0E-02 $\pm$ 200%
	⁶⁵ Zn	1.5E-02 $\pm$ 300%		⁶⁵ Zn	2.4E-02 $\pm$ 458%
	⁹⁰ Sr	4.8E+00 $\pm$ 15%		⁹⁰ Sr	2.3E-01 $\pm$ 57%
	¹⁰³ Ru	-1.3E-02 $\pm$ 154%		¹⁰³ Ru	-1.7E-02 $\pm$ 259%
	¹⁰⁶ Ru	-2.5E-02 $\pm$ 640%		¹⁰⁶ Ru	2.7E-01 $\pm$ 141%
	¹¹³ Sn	-1.2E-02 $\pm$ 200%		¹¹³ Sn	7.9E-03 $\pm$ 646%
	¹²⁵ Sb	2.0E-02 $\pm$ 250%		¹²⁵ Sb	9.8E-03 $\pm$ 1000%
	¹³⁴ Cs	3.1E-03 $\pm$ 581%		¹³⁴ Cs	2.5E-02 $\pm$ 172%
	¹³⁷ Cs	9.8E-02 $\pm$ 32%		¹³⁷ Cs	6.7E-02 $\pm$ 69%
	¹⁴⁴ Ce	-8.1E-02 $\pm$ 160%		¹⁴⁴ Ce	-2.2E-01 $\pm$ 118%
	¹⁵² Eu	1.6E-02 $\pm$ 338%		¹⁵² Eu	3.4E-02 $\pm$ 353%
	¹⁵⁴ Eu	-1.8E-02 $\pm$ 289%		¹⁵⁴ Eu	-2.9E-02 $\pm$ 414%
	¹⁵⁵ Eu	-1.9E-02 $\pm$ 347%		¹⁵⁵ Eu	-1.3E-01 $\pm$ 123%
	²³⁴ U	1.8E-02 $\pm$ 53%		²³⁴ U	2.3E-02 $\pm$ 52%
	²³⁵ U	8.2E-03 $\pm$ 80%		²³⁵ U	8.2E-03 $\pm$ 73%
	²³⁸ U	1.2E-02 $\pm$ 65%		²³⁸ U	1.4E-02 $\pm$ 60%
	²³⁸ Pu	1.6E-02 $\pm$ 81%		²³⁸ Pu	3.1E-02 $\pm$ 65%
	^{239,240} Pu	8.9E-04 $\pm$ 1000%		^{239,240} Pu	8.3E-03 $\pm$ 80%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V019	⁶⁰ Co	-1.5E-03 $\pm$ 1000%	V023	⁶⁰ Co	-1.4E-02 $\pm$ 171%
	⁶⁵ Zn	1.8E-02 $\pm$ 250%		⁶⁵ Zn	-1.1E-01 $\pm$ 100%
	⁹⁰ Sr	9.3E-02 $\pm$ 108%		⁹⁰ Sr	-8.3E-02 $\pm$ 100%
	¹⁰³ Ru	-1.3E-02 $\pm$ 138%		¹⁰³ Ru	-7.2E-03 $\pm$ 375%
	¹⁰⁶ Ru	-3.5E-02 $\pm$ 457%		¹⁰⁶ Ru	-1.6E-01 $\pm$ 163%
	¹¹³ Sn	7.1E-03 $\pm$ 380%		¹¹³ Sn	-4.1E-03 $\pm$ 732%
	¹²⁵ Sb	-2.0E-02 $\pm$ 220%		¹²⁵ Sb	3.1E-02 $\pm$ 190%
	¹³⁴ Cs	2.4E-02 $\pm$ 71%		¹³⁴ Cs	-1.2E-02 $\pm$ 192%
	¹³⁷ Cs	4.0E-02 $\pm$ 63%		¹³⁷ Cs	7.1E-02 $\pm$ 54%
	¹⁴⁴ Ce	-3.1E-02 $\pm$ 387%		¹⁴⁴ Ce	5.2E-02 $\pm$ 288%
	¹⁵² Eu	-4.1E-02 $\pm$ 139%		¹⁵² Eu	8.7E-03 $\pm$ 724%
	¹⁵⁴ Eu	1.8E-02 $\pm$ 300%		¹⁵⁴ Eu	-1.9E-02 $\pm$ 400%
	¹⁵⁵ Eu	9.7E-03 $\pm$ 629%		¹⁵⁵ Eu	2.4E-04 $\pm$ 1000%
	²³⁴ U	1.7E-02 $\pm$ 55%		²³⁴ U	2.3E-02 $\pm$ 52%
	²³⁵ U	6.0E-03 $\pm$ 87%		²³⁵ U	6.8E-03 $\pm$ 76%
	²³⁸ U	1.7E-02 $\pm$ 55%		²³⁸ U	1.3E-02 $\pm$ 60%
	²³⁸ Pu	9.4E-04 $\pm$ 1000%		²³⁸ Pu	-6.8E-03 $\pm$ 176%
	^{239,240} Pu	3.8E-03 $\pm$ 150%		^{239,240} Pu	4.3E-03 $\pm$ 95%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V027	⁶⁰ Co	-1.7E-02 $\pm$ 118%	V031	⁶⁰ Co	-3.8E-04 $\pm$ 1000%
	⁶⁵ Zn	9.6E-03 $\pm$ 625%		⁶⁵ Zn	-3.7E-02 $\pm$ 159%
	⁹⁰ Sr	2.0E-01 $\pm$ 55%		⁹⁰ Sr	2.0E-01 $\pm$ 55%
	¹⁰³ Ru	2.5E-02 $\pm$ 108%		¹⁰³ Ru	-8.0E-03 $\pm$ 350%
	¹⁰⁶ Ru	1.0E-01 $\pm$ 200%		¹⁰⁶ Ru	8.6E-02 $\pm$ 244%
	¹¹³ Sn	-3.6E-03 $\pm$ 861%		¹¹³ Sn	-1.6E-02 $\pm$ 200%
	¹²⁵ Sb	-5.8E-03 $\pm$ 1000%		¹²⁵ Sb	7.9E-02 $\pm$ 95%
	¹³⁴ Cs	4.6E-03 $\pm$ 500%		¹³⁴ Cs	-1.7E-03 $\pm$ 1000%
	¹³⁷ Cs	6.6E-02 $\pm$ 58%		¹³⁷ Cs	9.6E-02 $\pm$ 43%
	¹⁴⁴ Ce	-1.2E-01 $\pm$ 133%		¹⁴⁴ Ce	-4.5E-02 $\pm$ 356%
	¹⁵² Eu	5.4E-02 $\pm$ 130%		¹⁵² Eu	3.0E-02 $\pm$ 230%
	¹⁵⁴ Eu	-4.8E-02 $\pm$ 140%		¹⁵⁴ Eu	-7.7E-02 $\pm$ 100%
	¹⁵⁵ Eu	-2.0E-02 $\pm$ 400%		¹⁵⁵ Eu	-7.7E-02 $\pm$ 110%
	²³⁴ U	1.4E-02 $\pm$ 59%		²³⁴ U	1.4E-02 $\pm$ 57%
	²³⁵ U	1.0E-02 $\pm$ 68%		²³⁵ U	1.8E-03 $\pm$ 278%
	²³⁸ U	1.4E-02 $\pm$ 59%		²³⁸ U	1.1E-02 $\pm$ 67%
	²³⁸ Pu	-8.2E-03 $\pm$ 232%		²³⁸ Pu	1.2E-02 $\pm$ 133%
	^{239,240} Pu	1.0E-03 $\pm$ 200%		^{239,240} Pu	5.2E-03 $\pm$ 87%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V035	⁶⁰ Co	1.5E-02 $\pm$ 180%	V039	⁶⁰ Co	3.9E-03 $\pm$ 641%
	⁶⁵ Zn	-1.1E-02 $\pm$ 682%		⁶⁵ Zn	-2.8E-02 $\pm$ 261%
	⁹⁰ Sr	1.2E-01 $\pm$ 92%		⁹⁰ Sr	8.2E-01 $\pm$ 22%
	¹⁰³ Ru	-2.7E-03 $\pm$ 1000%		¹⁰³ Ru	6.3E-03 $\pm$ 492%
	¹⁰⁶ Ru	1.6E-01 $\pm$ 150%		¹⁰⁶ Ru	-7.1E-03 $\pm$ 1000%
	¹¹³ Sn	-1.2E-02 $\pm$ 308%		¹¹³ Sn	2.8E-03 $\pm$ 1000%
	¹²⁵ Sb	-1.3E-02 $\pm$ 500%		¹²⁵ Sb	5.4E-03 $\pm$ 1000%
	¹³⁴ Cs	-7.2E-03 $\pm$ 403%		¹³⁴ Cs	8.3E-03 $\pm$ 325%
	¹³⁷ Cs	7.7E-02 $\pm$ 58%		¹³⁷ Cs	9.9E-02 $\pm$ 43%
	¹⁴⁴ Ce	-4.5E-02 $\pm$ 400%		¹⁴⁴ Ce	-7.4E-02 $\pm$ 257%
	¹⁵² Eu	-5.2E-02 $\pm$ 150%		¹⁵² Eu	-4.3E-02 $\pm$ 179%
	¹⁵⁴ Eu	-3.5E-03 $\pm$ 1000%		¹⁵⁴ Eu	4.3E-02 $\pm$ 191%
	¹⁵⁵ Eu	-1.3E-02 $\pm$ 746%		¹⁵⁵ Eu	7.2E-03 $\pm$ 1000%
	²³⁴ U	3.1E-02 $\pm$ 48%		²³⁴ U	2.0E-02 $\pm$ 50%
	²³⁵ U	-1.1E-03 $\pm$ 527%		²³⁵ U	4.6E-03 $\pm$ 96%
	²³⁸ U	1.6E-02 $\pm$ 69%		²³⁸ U	1.9E-02 $\pm$ 52%
	²³⁸ Pu	1.2E-02 $\pm$ 117%		²³⁸ Pu	2.6E-03 $\pm$ 462%
	^{239,240} Pu	8.6E-04 $\pm$ 198%		^{239,240} Pu	2.6E-02 $\pm$ 50%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V041	⁶⁰ Co	1.4E-02 $\pm$ 179%	V043	⁶⁰ Co	7.3E-03 $\pm$ 370%
	⁶⁵ Zn	4.6E-02 $\pm$ 139%		⁶⁵ Zn	-7.8E-02 $\pm$ 100%
	⁹⁰ Sr	1.8E-01 $\pm$ 55%		⁹⁰ Sr	5.1E-02 $\pm$ 171%
	¹⁰³ Ru	-9.6E-03 $\pm$ 302%		¹⁰³ Ru	4.0E-03 $\pm$ 925%
	¹⁰⁶ Ru	-2.2E-02 $\pm$ 1000%		¹⁰⁶ Ru	1.2E-01 $\pm$ 183%
	¹¹³ Sn	-2.8E-02 $\pm$ 121%		¹¹³ Sn	6.6E-03 $\pm$ 424%
	¹²⁵ Sb	-3.5E-02 $\pm$ 180%		¹²⁵ Sb	2.4E-02 $\pm$ 242%
	¹³⁴ Cs	3.8E-03 $\pm$ 658%		¹³⁴ Cs	1.4E-02 $\pm$ 179%
	¹³⁷ Cs	7.1E-02 $\pm$ 54%		¹³⁷ Cs	2.3E-01 $\pm$ 26%
	¹⁴⁴ Ce	1.3E-02 $\pm$ 1000%		¹⁴⁴ Ce	-5.3E-02 $\pm$ 245%
	¹⁵² Eu	3.5E-02 $\pm$ 209%		¹⁵² Eu	3.4E-02 $\pm$ 171%
	¹⁵⁴ Eu	-3.7E-02 $\pm$ 200%		¹⁵⁴ Eu	-2.5E-02 $\pm$ 300%
	¹⁵⁵ Eu	8.5E-02 $\pm$ 99%		¹⁵⁵ Eu	2.5E-02 $\pm$ 272%
	²³⁴ U	3.3E-02 $\pm$ 45%		²³⁴ U	1.4E-02 $\pm$ 62%
	²³⁵ U	8.3E-03 $\pm$ 73%		²³⁵ U	7.4E-03 $\pm$ 82%
	²³⁸ U	1.8E-02 $\pm$ 53%		²³⁸ U	1.4E-02 $\pm$ 60%
	²³⁸ Pu	3.6E-03 $\pm$ 333%		²³⁸ Pu	-5.1E-03 $\pm$ 275%
	^{239,240} Pu	1.2E-02 $\pm$ 67%		^{239,240} Pu	1.1E-02 $\pm$ 68%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V045	⁶⁰ Co	3.2E-03 $\pm$ 906%	V047	⁶⁰ Co	6.2E-03 $\pm$ 419%
	⁶⁵ Zn	-6.7E-02 $\pm$ 100%		⁶⁵ Zn	-7.2E-02 $\pm$ 100%
	⁹⁰ Sr	1.5E-01 $\pm$ 60%		⁹⁰ Sr	1.7E-01 $\pm$ 59%
	¹⁰³ Ru	6.0E-03 $\pm$ 583%		¹⁰³ Ru	-2.6E-02 $\pm$ 119%
	¹⁰⁶ Ru	2.1E-02 $\pm$ 1000%		¹⁰⁶ Ru	-1.5E-01 $\pm$ 153%
	¹¹³ Sn	-4.7E-03 $\pm$ 766%		¹¹³ Sn	1.9E-02 $\pm$ 179%
	¹²⁵ Sb	-2.7E-02 $\pm$ 259%		¹²⁵ Sb	-5.6E-02 $\pm$ 120%
	¹³⁴ Cs	-1.3E-02 $\pm$ 208%		¹³⁴ Cs	4.0E-03 $\pm$ 675%
	¹³⁷ Cs	9.6E-02 $\pm$ 47%		¹³⁷ Cs	8.4E-02 $\pm$ 42%
	¹⁴⁴ Ce	-5.7E-03 $\pm$ 1000%		¹⁴⁴ Ce	3.6E-02 $\pm$ 500%
	¹⁵² Eu	4.4E-02 $\pm$ 170%		¹⁵² Eu	-2.7E-02 $\pm$ 281%
	¹⁵⁴ Eu	-2.7E-02 $\pm$ 330%		¹⁵⁴ Eu	6.1E-03 $\pm$ 1000%
	¹⁵⁵ Eu	-1.1E-01 $\pm$ 109%		¹⁵⁵ Eu	1.7E-02 $\pm$ 541%
	²³⁴ U	2.6E-02 $\pm$ 46%		²³⁴ U	1.9E-02 $\pm$ 53%
	²³⁵ U	5.6E-03 $\pm$ 98%		²³⁵ U	8.8E-03 $\pm$ 80%
	²³⁸ U	1.5E-02 $\pm$ 58%		²³⁸ U	1.5E-02 $\pm$ 60%
	²³⁸ Pu	8.1E-04 $\pm$ 1000%		²³⁸ Pu	-3.8E-03 $\pm$ 316%
	^{239,240} Pu	8.1E-03 $\pm$ 90%		^{239,240} Pu	6.7E-03 $\pm$ 82%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V049	⁶⁰ Co	1.8E-02 $\pm$ 128%	V051	⁶⁰ Co	8.8E-03 $\pm$ 1000%
	⁶⁵ Zn	2.1E-02 $\pm$ 300%		⁶⁵ Zn	2.1E-01 $\pm$ 119%
	⁹⁰ Sr	3.8E-01 $\pm$ 32%		⁹⁰ Sr	1.3E+00 $\pm$ 25%
	¹⁰³ Ru	-3.2E-02 $\pm$ 100%		¹⁰³ Ru	-7.2E-02 $\pm$ 167%
	¹⁰⁶ Ru	-1.5E-01 $\pm$ 140%		¹⁰⁶ Ru	-3.2E-01 $\pm$ 281%
	¹¹³ Sn	-9.8E-03 $\pm$ 337%		¹¹³ Sn	4.6E-02 $\pm$ 261%
	¹²⁵ Sb	9.9E-03 $\pm$ 657%		¹²⁵ Sb	-7.4E-02 $\pm$ 324%
	¹³⁴ Cs	-1.3E-02 $\pm$ 200%		¹³⁴ Cs	-5.7E-03 $\pm$ 1000%
	¹³⁷ Cs	6.2E-02 $\pm$ 68%		¹³⁷ Cs	2.1E-01 $\pm$ 52%
	¹⁴⁴ Ce	6.1E-02 $\pm$ 279%		¹⁴⁴ Ce	3.0E-01 $\pm$ 210%
	¹⁵² Eu	2.2E-02 $\pm$ 332%		¹⁵² Eu	-2.6E-01 $\pm$ 100%
	¹⁵⁴ Eu	-5.8E-02 $\pm$ 129%		¹⁵⁴ Eu	-2.1E-02 $\pm$ 1000%
	¹⁵⁵ Eu	-5.2E-02 $\pm$ 160%		¹⁵⁵ Eu	2.6E-01 $\pm$ 131%
	²³⁴ U	1.9E-02 $\pm$ 53%		²³⁴ U	3.2E-02 $\pm$ 56%
	²³⁵ U	6.2E-03 $\pm$ 87%		²³⁵ U	1.5E-02 $\pm$ 80%
	²³⁸ U	1.3E-02 $\pm$ 62%		²³⁸ U	2.0E-02 $\pm$ 65%
	²³⁸ Pu	9.8E-03 $\pm$ 163%		²³⁸ Pu	1.8E-03 $\pm$ 1000%
	^{239,240} Pu	5.3E-03 $\pm$ 87%		^{239,240} Pu	1.9E-03 $\pm$ 1000%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V053	⁶⁰ Co	-7.9E-03 $\pm$ 608%	V057	⁶⁰ Co	7.1E-03 $\pm$ 1000%
	⁶⁵ Zn	-7.0E-02 $\pm$ 157%		⁶⁵ Zn	-6.0E-02 $\pm$ 367%
	⁹⁰ Sr	1.6E+00 $\pm$ 21%		⁹⁰ Sr	6.0E-01 $\pm$ 40%
	¹⁰³ Ru	-4.0E-02 $\pm$ 140%		¹⁰³ Ru	-3.0E-02 $\pm$ 367%
	¹⁰⁶ Ru	1.5E-01 $\pm$ 300%		¹⁰⁶ Ru	3.4E-02 $\pm$ 1000%
	¹¹³ Sn	2.9E-02 $\pm$ 190%		¹¹³ Sn	-5.0E-02 $\pm$ 200%
	¹²⁵ Sb	4.8E-02 $\pm$ 229%		¹²⁵ Sb	-1.1E-01 $\pm$ 209%
	¹³⁴ Cs	4.4E-02 $\pm$ 100%		¹³⁴ Cs	4.3E-02 $\pm$ 200%
	¹³⁷ Cs	2.2E-01 $\pm$ 32%		¹³⁷ Cs	1.6E-01 $\pm$ 81%
	¹⁴⁴ Ce	-7.5E-02 $\pm$ 360%		¹⁴⁴ Ce	-5.7E-02 $\pm$ 930%
	¹⁵² Eu	4.4E-02 $\pm$ 250%		¹⁵² Eu	-2.0E-03 $\pm$ 1000%
	¹⁵⁴ Eu	9.0E-02 $\pm$ 156%		¹⁵⁴ Eu	2.0E-04 $\pm$ 1000%
	¹⁵⁵ Eu	-3.1E-02 $\pm$ 452%		¹⁵⁵ Eu	-9.1E-02 $\pm$ 407%
	²³⁴ U	1.9E-02 $\pm$ 74%		²³⁴ U	2.6E-02 $\pm$ 58%
	²³⁵ U	1.9E-03 $\pm$ 200%		²³⁵ U	7.2E-03 $\pm$ 100%
	²³⁸ U	1.2E-02 $\pm$ 82%		²³⁸ U	2.0E-02 $\pm$ 65%
	²³⁸ Pu	-9.0E-03 $\pm$ 278%		²³⁸ Pu	-3.4E-03 $\pm$ 647%
	^{239,240} Pu	9.0E-03 $\pm$ 94%		^{239,240} Pu	8.4E-03 $\pm$ 95%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V059	⁶⁰ Co	-6.0E-03 $\pm$ 1000%	V061	⁶⁰ Co	-4.1E-02 $\pm$ 129%
	⁶⁵ Zn	-1.6E-01 $\pm$ 100%		⁶⁵ Zn	-8.6E-02 $\pm$ 163%
	⁹⁰ Sr	9.0E-01 $\pm$ 44%		⁹⁰ Sr	4.8E-01 $\pm$ 50%
	¹⁰³ Ru	-4.4E-02 $\pm$ 191%		¹⁰³ Ru	4.4E-02 $\pm$ 159%
	¹⁰⁶ Ru	2.0E-01 $\pm$ 290%		¹⁰⁶ Ru	-2.2E-02 $\pm$ 1000%
	¹¹³ Sn	3.8E-02 $\pm$ 229%		¹¹³ Sn	9.6E-03 $\pm$ 656%
	¹²⁵ Sb	2.0E-02 $\pm$ 850%		¹²⁵ Sb	-9.5E-02 $\pm$ 126%
	¹³⁴ Cs	-6.2E-03 $\pm$ 1000%		¹³⁴ Cs	1.7E-02 $\pm$ 312%
	¹³⁷ Cs	4.9E-01 $\pm$ 45%		¹³⁷ Cs	2.0E-01 $\pm$ 46%
	¹⁴⁴ Ce	-5.8E-01 $\pm$ 100%		¹⁴⁴ Ce	5.4E-02 $\pm$ 500%
	¹⁵² Eu	-1.8E-01 $\pm$ 100%		¹⁵² Eu	4.5E-02 $\pm$ 289%
	¹⁵⁴ Eu	6.6E-02 $\pm$ 303%		¹⁵⁴ Eu	-7.9E-02 $\pm$ 215%
	¹⁵⁵ Eu	-2.0E-01 $\pm$ 120%		¹⁵⁵ Eu	5.6E-02 $\pm$ 250%
	²³⁴ U	4.4E-02 $\pm$ 50%		²³⁴ U	3.5E-02 $\pm$ 54%
	²³⁵ U	9.8E-03 $\pm$ 100%		²³⁵ U	1.4E-02 $\pm$ 79%
	²³⁸ U	4.2E-02 $\pm$ 50%		²³⁸ U	2.4E-02 $\pm$ 63%
	²³⁸ Pu	8.3E-03 $\pm$ 325%		²³⁸ Pu	6.9E-03 $\pm$ 304%
	^{239,240} Pu	6.6E-03 $\pm$ 111%		^{239,240} Pu	1.7E-03 $\pm$ 200%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V077	⁶⁰ Co	9.1E-03 $\pm$ 143%	V079	⁶⁰ Co	-4.0E-03 $\pm$ 425%
	⁶⁵ Zn	-4.0E-02 $\pm$ 100%		⁶⁵ Zn	-6.1E-02 $\pm$ 100%
	⁹⁰ Sr	1.4E+00 $\pm$ 25%		⁹⁰ Sr	1.1E+00 $\pm$ 25%
	¹⁰³ Ru	3.4E-04 $\pm$ 1000%		¹⁰³ Ru	3.4E-04 $\pm$ 1000%
	¹⁰⁶ Ru	1.5E-02 $\pm$ 640%		¹⁰⁶ Ru	1.7E-01 $\pm$ 88%
	¹¹³ Sn	4.5E-03 $\pm$ 289%		¹¹³ Sn	-1.4E-02 $\pm$ 150%
	¹²⁵ Sb	-1.2E-02 $\pm$ 200%		¹²⁵ Sb	-1.2E-02 $\pm$ 350%
	¹³⁴ Cs	1.6E-03 $\pm$ 750%		¹³⁴ Cs	-1.3E-02 $\pm$ 123%
	¹³⁷ Cs	3.5E-02 $\pm$ 60%		¹³⁷ Cs	7.7E-03 $\pm$ 221%
	¹⁴⁴ Ce	3.1E-02 $\pm$ 190%		¹⁴⁴ Ce	-3.2E-02 $\pm$ 344%
	¹⁵² Eu	2.1E-02 $\pm$ 129%		¹⁵² Eu	1.7E-02 $\pm$ 282%
	¹⁵⁴ Eu	-2.7E-03 $\pm$ 1000%		¹⁵⁴ Eu	3.5E-02 $\pm$ 140%
	¹⁵⁵ Eu	1.8E-02 $\pm$ 172%		¹⁵⁵ Eu	1.8E-02 $\pm$ 322%
	²³⁴ U	3.4E-02 $\pm$ 59%		²³⁴ U	5.3E-02 $\pm$ 49%
	²³⁵ U	1.7E-02 $\pm$ 100%		²³⁵ U	2.3E-02 $\pm$ 70%
	²³⁸ U	1.8E-02 $\pm$ 78%		²³⁸ U	4.6E-02 $\pm$ 52%
	²³⁸ Pu	-9.1E-03 $\pm$ 429%		²³⁸ Pu	2.1E-03 $\pm$ 1000%
	^{239,240} Pu	-4.6E-03 $\pm$ 283%		^{239,240} Pu	1.7E-02 $\pm$ 76%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V081	⁶⁰ Co	-2.7E-04 $\pm$ 1000%	V083	⁶⁰ Co	-1.5E-03 $\pm$ 1000%
	⁶⁵ Zn	-3.9E-02 $\pm$ 121%		⁶⁵ Zn	-8.1E-03 $\pm$ 481%
	⁹⁰ Sr	3.7E-01 $\pm$ 51%		⁹⁰ Sr	3.3E-02 $\pm$ 515%
	¹⁰³ Ru	-6.5E-04 $\pm$ 1000%		¹⁰³ Ru	-4.0E-03 $\pm$ 375%
	¹⁰⁶ Ru	-4.5E-02 $\pm$ 378%		¹⁰⁶ Ru	-3.0E-02 $\pm$ 433%
	¹¹³ Sn	-8.8E-04 $\pm$ 1000%		¹¹³ Sn	-1.2E-02 $\pm$ 150%
	¹²⁵ Sb	-9.0E-04 $\pm$ 1000%		¹²⁵ Sb	1.7E-02 $\pm$ 218%
	¹³⁴ Cs	2.3E-03 $\pm$ 826%		¹³⁴ Cs	1.5E-02 $\pm$ 100%
	¹³⁷ Cs	-2.3E-04 $\pm$ 1000%		¹³⁷ Cs	2.4E-03 $\pm$ 625%
	¹⁴⁴ Ce	1.3E-02 $\pm$ 769%		¹⁴⁴ Ce	2.1E-02 $\pm$ 429%
	¹⁵² Eu	7.7E-02 $\pm$ 65%		¹⁵² Eu	8.9E-03 $\pm$ 438%
	¹⁵⁴ Eu	-4.8E-02 $\pm$ 121%		¹⁵⁴ Eu	-5.9E-02 $\pm$ 100%
	¹⁵⁵ Eu	-8.3E-03 $\pm$ 639%		¹⁵⁵ Eu	-1.9E-02 $\pm$ 347%
	²³⁴ U	2.8E-02 $\pm$ 64%		²³⁴ U	1.9E-02 $\pm$ 79%
	²³⁵ U	3.0E-02 $\pm$ 63%		²³⁵ U	6.3E-03 $\pm$ 149%
	²³⁸ U	1.4E-02 $\pm$ 107%		²³⁸ U	1.6E-02 $\pm$ 88%
	²³⁸ Pu	7.8E-03 $\pm$ 474%		²³⁸ Pu	1.7E-02 $\pm$ 171%
	^{239,240} Pu	1.0E-02 $\pm$ 130%		^{239,240} Pu	1.9E-03 $\pm$ 200%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V085	⁶⁰ Co	-3.3E-02 $\pm$ 100%	V087	⁶⁰ Co	-1.5E-02 $\pm$ 140%
	⁶⁵ Zn	2.1E-02 $\pm$ 190%		⁶⁵ Zn	-2.1E-02 $\pm$ 229%
	⁹⁰ Sr	4.1E-01 $\pm$ 61%		⁹⁰ Sr	2.4E-01 $\pm$ 75%
	¹⁰³ Ru	-8.5E-03 $\pm$ 224%		¹⁰³ Ru	-1.0E-02 $\pm$ 220%
	¹⁰⁶ Ru	1.2E-02 $\pm$ 1000%		¹⁰⁶ Ru	-1.8E-01 $\pm$ 111%
	¹¹³ Sn	1.2E-02 $\pm$ 183%		¹¹³ Sn	3.0E-02 $\pm$ 93%
	¹²⁵ Sb	1.4E-02 $\pm$ 321%		¹²⁵ Sb	-4.8E-03 $\pm$ 1000%
	¹³⁴ Cs	4.7E-03 $\pm$ 362%		¹³⁴ Cs	8.6E-03 $\pm$ 256%
	¹³⁷ Cs	-7.0E-03 $\pm$ 243%		¹³⁷ Cs	6.7E-03 $\pm$ 343%
	¹⁴⁴ Ce	4.8E-03 $\pm$ 1000%		¹⁴⁴ Ce	-6.0E-02 $\pm$ 233%
	¹⁵² Eu	3.0E-02 $\pm$ 160%		¹⁵² Eu	1.7E-02 $\pm$ 353%
	¹⁵⁴ Eu	-1.4E-02 $\pm$ 371%		¹⁵⁴ Eu	4.5E-02 $\pm$ 129%
	¹⁵⁵ Eu	-4.9E-03 $\pm$ 1000%		¹⁵⁵ Eu	-3.7E-02 $\pm$ 189%
	²³⁴ U	6.4E-02 $\pm$ 45%		²³⁴ U	3.6E-02 $\pm$ 64%
	²³⁵ U	2.8E-02 $\pm$ 61%		²³⁵ U	1.1E-02 $\pm$ 127%
	²³⁸ U	6.3E-02 $\pm$ 48%		²³⁸ U	2.6E-02 $\pm$ 77%
	²³⁸ Pu	2.7E-02 $\pm$ 130%		²³⁸ Pu	-2.8E-03 $\pm$ 1000%
	^{239,240} Pu	3.0E-02 $\pm$ 63%		^{239,240} Pu	5.7E-03 $\pm$ 193%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V089	⁶⁰ Co	-1.1E-02 $\pm$ 145%	V091	⁶⁰ Co	1.4E-02 $\pm$ 143%
	⁶⁵ Zn	-4.6E-02 $\pm$ 100%		⁶⁵ Zn	2.2E-03 $\pm$ 1000%
	⁹⁰ Sr	5.5E-01 $\pm$ 51%		⁹⁰ Sr	7.3E-01 $\pm$ 32%
	¹⁰³ Ru	-7.8E-03 $\pm$ 218%		¹⁰³ Ru	-1.6E-02 $\pm$ 131%
	¹⁰⁶ Ru	8.0E-03 $\pm$ 1000%		¹⁰⁶ Ru	-6.0E-02 $\pm$ 283%
	¹¹³ Sn	1.1E-03 $\pm$ 1000%		¹¹³ Sn	-1.4E-02 $\pm$ 179%
	¹²⁵ Sb	7.3E-03 $\pm$ 493%		¹²⁵ Sb	4.0E-03 $\pm$ 1000%
	¹³⁴ Cs	-8.8E-03 $\pm$ 170%		¹³⁴ Cs	8.6E-03 $\pm$ 233%
	¹³⁷ Cs	-4.0E-03 $\pm$ 350%		¹³⁷ Cs	2.0E-02 $\pm$ 95%
	¹⁴⁴ Ce	6.4E-03 $\pm$ 1000%		¹⁴⁴ Ce	-7.3E-03 $\pm$ 1000%
	¹⁵² Eu	-3.6E-02 $\pm$ 100%		¹⁵² Eu	1.9E-03 $\pm$ 1000%
	¹⁵⁴ Eu	-1.7E-02 $\pm$ 282%		¹⁵⁴ Eu	3.0E-02 $\pm$ 200%
	¹⁵⁵ Eu	4.5E-02 $\pm$ 120%		¹⁵⁵ Eu	-8.1E-02 $\pm$ 110%
	²³⁴ U	2.7E-02 $\pm$ 67%		²³⁴ U	5.1E-02 $\pm$ 53%
	²³⁵ U	1.2E-02 $\pm$ 92%		²³⁵ U	1.6E-02 $\pm$ 81%
	²³⁸ U	3.0E-02 $\pm$ 63%		²³⁸ U	2.0E-02 $\pm$ 70%
	²³⁸ Pu	2.0E-02 $\pm$ 180%		²³⁸ Pu	7.9E-03 $\pm$ 291%
	^{239,240} Pu	1.4E-02 $\pm$ 100%		^{239,240} Pu	6.0E-03 $\pm$ 120%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V095	⁶⁰ Co	-5.8E-03 $\pm$ 310%	V097	⁶⁰ Co	1.7E-03 $\pm$ 706%
	⁶⁵ Zn	-6.5E-02 $\pm$ 100%		⁶⁵ Zn	4.3E-02 $\pm$ 30%
	⁹⁰ Sr	4.0E-01 $\pm$ 45%		⁹⁰ Sr	3.7E-01 $\pm$ 54%
	¹⁰³ Ru	1.4E-02 $\pm$ 150%		¹⁰³ Ru	1.3E-02 $\pm$ 123%
	¹⁰⁶ Ru	3.6E-02 $\pm$ 472%		¹⁰⁶ Ru	1.1E-02 $\pm$ 1000%
	¹¹³ Sn	-6.2E-03 $\pm$ 387%		¹¹³ Sn	-6.6E-03 $\pm$ 273%
	¹²⁵ Sb	-1.7E-02 $\pm$ 300%		¹²⁵ Sb	-1.5E-02 $\pm$ 227%
	¹³⁴ Cs	-7.9E-03 $\pm$ 253%		¹³⁴ Cs	-8.4E-04 $\pm$ 1000%
	¹³⁷ Cs	2.2E-02 $\pm$ 86%		¹³⁷ Cs	-3.6E-03 $\pm$ 361%
	¹⁴⁴ Ce	-4.2E-02 $\pm$ 310%		¹⁴⁴ Ce	-6.1E-02 $\pm$ 149%
	¹⁵² Eu	3.7E-02 $\pm$ 159%		¹⁵² Eu	-1.0E-03 $\pm$ 1000%
	¹⁵⁴ Eu	-1.4E-02 $\pm$ 379%		¹⁵⁴ Eu	2.0E-02 $\pm$ 180%
	¹⁵⁵ Eu	3.1E-02 $\pm$ 219%		¹⁵⁵ Eu	-3.3E-02 $\pm$ 139%
	²³⁴ U	1.1E-01 $\pm$ 41%		²³⁴ U	1.4E-02 $\pm$ 54%
	²³⁵ U	3.5E-02 $\pm$ 66%		²³⁵ U	4.2E-03 $\pm$ 88%
	²³⁸ U	6.6E-02 $\pm$ 47%		²³⁸ U	5.2E-03 $\pm$ 85%
	²³⁸ Pu	9.4E-03 $\pm$ 245%		²³⁸ Pu	-1.9E-03 $\pm$ 1000%
	^{239,240} Pu	2.3E-03 $\pm$ 200%		^{239,240} Pu	1.9E-03 $\pm$ 453%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V099	⁶⁰ Co	-3.5E-03 $\pm$ 314%	V101	⁶⁰ Co	8.6E-03 $\pm$ 151%
	⁶⁵ Zn	-3.7E-03 $\pm$ 865%		⁶⁵ Zn	-3.9E-02 $\pm$ 100%
	⁹⁰ Sr	2.8E-01 $\pm$ 61%		⁹⁰ Sr	4.5E-01 $\pm$ 44%
	¹⁰³ Ru	-1.7E-03 $\pm$ 824%		¹⁰³ Ru	1.2E-03 $\pm$ 1000%
	¹⁰⁶ Ru	4.0E-02 $\pm$ 275%		¹⁰⁶ Ru	-3.1E-02 $\pm$ 355%
	¹¹³ Sn	-1.2E-02 $\pm$ 142%		¹¹³ Sn	-7.9E-04 $\pm$ 1000%
	¹²⁵ Sb	1.8E-02 $\pm$ 200%		¹²⁵ Sb	9.7E-04 $\pm$ 1000%
	¹³⁴ Cs	1.3E-02 $\pm$ 92%		¹³⁴ Cs	6.3E-03 $\pm$ 222%
	¹³⁷ Cs	-5.1E-03 $\pm$ 255%		¹³⁷ Cs	1.2E-02 $\pm$ 100%
	¹⁴⁴ Ce	1.5E-03 $\pm$ 1000%		¹⁴⁴ Ce	-2.7E-02 $\pm$ 300%
	¹⁵² Eu	9.7E-03 $\pm$ 381%		¹⁵² Eu	-2.8E-02 $\pm$ 129%
	¹⁵⁴ Eu	-7.5E-03 $\pm$ 467%		¹⁵⁴ Eu	-8.6E-03 $\pm$ 465%
	¹⁵⁵ Eu	-8.7E-03 $\pm$ 494%		¹⁵⁵ Eu	-1.5E-02 $\pm$ 400%
	²³⁴ U	6.5E-02 $\pm$ 48%		²³⁴ U	7.7E-02 $\pm$ 44%
	²³⁵ U	1.2E-02 $\pm$ 117%		²³⁵ U	2.2E-02 $\pm$ 68%
	²³⁸ U	3.9E-02 $\pm$ 59%		²³⁸ U	5.1E-02 $\pm$ 49%
	²³⁸ Pu	2.1E-02 $\pm$ 110%		²³⁸ Pu	-7.5E-03 $\pm$ 253%
	^{239,240} Pu	5.6E-03 $\pm$ 120%		^{239,240} Pu	3.7E-03 $\pm$ 200%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V103	⁶⁰ Co	-2.1E-03 $\pm$ 810%	V105	⁶⁰ Co	-1.1E-02 $\pm$ 182%
	⁶⁵ Zn	-3.9E-02 $\pm$ 110%		⁶⁵ Zn	-3.1E-02 $\pm$ 171%
	⁹⁰ Sr	2.6E-01 $\pm$ 81%		⁹⁰ Sr	8.1E-01 $\pm$ 31%
	¹⁰³ Ru	-1.2E-02 $\pm$ 167%		¹⁰³ Ru	2.0E-02 $\pm$ 120%
	¹⁰⁶ Ru	-4.1E-02 $\pm$ 415%		¹⁰⁶ Ru	3.1E-02 $\pm$ 710%
	¹¹³ Sn	1.5E-03 $\pm$ 1000%		¹¹³ Sn	9.3E-03 $\pm$ 323%
	¹²⁵ Sb	-6.9E-03 $\pm$ 725%		¹²⁵ Sb	4.3E-02 $\pm$ 130%
	¹³⁴ Cs	-1.1E-02 $\pm$ 182%		¹³⁴ Cs	1.1E-02 $\pm$ 236%
	¹³⁷ Cs	-1.3E-03 $\pm$ 1000%		¹³⁷ Cs	-2.6E-04 $\pm$ 1000%
	¹⁴⁴ Ce	2.7E-02 $\pm$ 481%		¹⁴⁴ Ce	1.4E-02 $\pm$ 1000%
	¹⁵² Eu	6.5E-03 $\pm$ 815%		¹⁵² Eu	-3.5E-02 $\pm$ 180%
	¹⁵⁴ Eu	-3.5E-03 $\pm$ 1000%		¹⁵⁴ Eu	-4.4E-02 $\pm$ 150%
	¹⁵⁵ Eu	-2.5E-02 $\pm$ 260%		¹⁵⁵ Eu	-9.4E-04 $\pm$ 1000%
	²³⁴ U	2.2E-02 $\pm$ 77%		²³⁴ U	5.2E-02 $\pm$ 50%
	²³⁵ U	2.4E-02 $\pm$ 71%		²³⁵ U	2.8E-02 $\pm$ 71%
	²³⁸ U	2.0E-02 $\pm$ 80%		²³⁸ U	4.4E-02 $\pm$ 52%
	²³⁸ Pu	-1.5E-02 $\pm$ 107%		²³⁸ Pu	3.2E-03 $\pm$ 1000%
	^{239,240} Pu	2.8E-02 $\pm$ 64%		^{239,240} Pu	3.2E-03 $\pm$ 781%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V107	⁶⁰ Co	-1.1E-02 $\pm$ 164%	V109	⁶⁰ Co	1.9E-02 $\pm$ 79%
	⁶⁵ Zn	-1.6E-03 $\pm$ 1000%		⁶⁵ Zn	-7.2E-02 $\pm$ 100%
	⁹⁰ Sr	4.4E-01 $\pm$ 50%		⁹⁰ Sr	4.2E-01 $\pm$ 55%
	¹⁰³ Ru	-4.4E-03 $\pm$ 500%		¹⁰³ Ru	-1.1E-02 $\pm$ 173%
	¹⁰⁶ Ru	-3.0E-03 $\pm$ 1000%		¹⁰⁶ Ru	9.9E-02 $\pm$ 97%
	¹¹³ Sn	-5.2E-03 $\pm$ 346%		¹¹³ Sn	-1.1E-02 $\pm$ 191%
	¹²⁵ Sb	2.5E-02 $\pm$ 160%		¹²⁵ Sb	-3.9E-02 $\pm$ 100%
	¹³⁴ Cs	1.7E-02 $\pm$ 94%		¹³⁴ Cs	8.0E-04 $\pm$ 1000%
	¹³⁷ Cs	-5.0E-04 $\pm$ 1000%		¹³⁷ Cs	-2.8E-03 $\pm$ 607%
	¹⁴⁴ Ce	-7.9E-03 $\pm$ 1000%		¹⁴⁴ Ce	9.9E-02 $\pm$ 111%
	¹⁵² Eu	5.6E-03 $\pm$ 679%		¹⁵² Eu	5.1E-03 $\pm$ 882%
	¹⁵⁴ Eu	-3.5E-03 $\pm$ 1000%		¹⁵⁴ Eu	2.6E-02 $\pm$ 181%
	¹⁵⁵ Eu	-2.1E-03 $\pm$ 1000%		¹⁵⁵ Eu	4.1E-02 $\pm$ 129%
	²³⁴ U	2.8E-02 $\pm$ 64%		²³⁴ U	4.4E-02 $\pm$ 50%
	²³⁵ U	1.1E-02 $\pm$ 91%		²³⁵ U	2.0E-02 $\pm$ 70%
	²³⁸ U	3.4E-02 $\pm$ 62%		²³⁸ U	7.4E-03 $\pm$ 162%
	²³⁸ Pu	-3.2E-02 $\pm$ 150%		²³⁸ Pu	1.3E-02 $\pm$ 323%
	^{239,240} Pu	2.4E-02 $\pm$ 83%		^{239,240} Pu	1.3E-02 $\pm$ 108%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V111	⁶⁰ Co	5.2E-03 $\pm$ 269%	V113	⁶⁰ Co	-1.8E-03 $\pm$ 1000%
	⁶⁵ Zn	3.4E-03 $\pm$ 1000%		⁶⁵ Zn	-2.2E-02 $\pm$ 200%
	⁹⁰ Sr	4.2E-01 $\pm$ 55%		⁹⁰ Sr	2.5E-01 $\pm$ 80%
	¹⁰³ Ru	-8.9E-03 $\pm$ 202%		¹⁰³ Ru	-1.1E-02 $\pm$ 227%
	¹⁰⁶ Ru	1.5E-02 $\pm$ 800%		¹⁰⁶ Ru	-7.7E-03 $\pm$ 1000%
	¹¹³ Sn	3.1E-03 $\pm$ 613%		¹¹³ Sn	-4.2E-03 $\pm$ 524%
	¹²⁵ Sb	-1.9E-02 $\pm$ 211%		¹²⁵ Sb	-4.6E-03 $\pm$ 913%
	¹³⁴ Cs	5.2E-03 $\pm$ 269%		¹³⁴ Cs	1.7E-03 $\pm$ 1000%
	¹³⁷ Cs	3.6E-02 $\pm$ 61%		¹³⁷ Cs	1.2E-03 $\pm$ 1000%
	¹⁴⁴ Ce	8.0E-02 $\pm$ 120%		¹⁴⁴ Ce	5.8E-02 $\pm$ 160%
	¹⁵² Eu	-4.0E-02 $\pm$ 110%		¹⁵² Eu	9.6E-04 $\pm$ 1000%
	¹⁵⁴ Eu	1.1E-02 $\pm$ 391%		¹⁵⁴ Eu	-2.3E-02 $\pm$ 230%
	¹⁵⁵ Eu	-4.2E-03 $\pm$ 1000%		¹⁵⁵ Eu	8.0E-04 $\pm$ 1000%
	²³⁴ U	3.3E-02 $\pm$ 58%		²³⁴ U	2.4E-02 $\pm$ 75%
	²³⁵ U	1.5E-02 $\pm$ 93%		²³⁵ U	7.7E-03 $\pm$ 156%
	²³⁸ U	1.4E-02 $\pm$ 100%		²³⁸ U	1.4E-02 $\pm$ 86%
	²³⁸ Pu	-4.0E-03 $\pm$ 1000%		²³⁸ Pu	3.3E-03 $\pm$ 1000%
	^{239,240} Pu	3.2E-02 $\pm$ 91%		^{239,240} Pu	2.6E-02 $\pm$ 77%

Table 4-12 1999 Vegetation Sampling Results, 200 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error
V115	⁶⁰ Co	-2.8E-03 $\pm$ 464%
	⁶⁵ Zn	-1.9E-02 $\pm$ 168%
	⁹⁰ Sr	5.9E-01 $\pm$ 49%
	¹⁰³ Ru	-1.1E-03 $\pm$ 1000%
	¹⁰⁶ Ru	7.5E-03 $\pm$ 1000%
	¹¹³ Sn	1.8E-03 $\pm$ 889%
	¹²⁵ Sb	-3.1E-03 $\pm$ 1000%
	¹³⁴ Cs	2.9E-03 $\pm$ 483%
	¹³⁷ Cs	4.1E-03 $\pm$ 317%
	¹⁴⁴ Ce	-9.3E-02 $\pm$ 100%
	¹⁵² Eu	-2.1E-03 $\pm$ 1000%
	¹⁵⁴ Eu	-1.5E-02 $\pm$ 280%
	¹⁵⁵ Eu	2.3E-02 $\pm$ 261%
	²³⁴ U	6.0E-02 $\pm$ 48%
	²³⁵ U	2.7E-02 $\pm$ 67%
	²³⁸ U	2.9E-02 $\pm$ 62%
	²³⁸ Pu	6.2E-03 $\pm$ 774%
	^{239,240} Pu	3.1E-02 $\pm$ 77%

Table 4-13 1999 Vegetation Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V116	⁶⁰ Co	-1.6E-03 $\pm$ 1000%	V116	⁶⁰ Co	-1.1E-02 $\pm$ 318%
	⁶⁵ Zn	-1.4E-01 $\pm$ 100%	(Duplicate)	⁶⁵ Zn	1.3E-01 $\pm$ 68%
	⁹⁰ Sr	5.3E-01 $\pm$ 30%		⁹⁰ Sr	3.4E-01 $\pm$ 41%
	¹⁰³ Ru	-8.0E-03 $\pm$ 275%		¹⁰³ Ru	9.5E-04 $\pm$ 1000%
	¹⁰⁶ Ru	2.6E-01 $\pm$ 81%		¹⁰⁶ Ru	7.6E-02 $\pm$ 434%
	¹¹³ Sn	1.2E-02 $\pm$ 242%		¹¹³ Sn	-5.9E-02 $\pm$ 100%
	¹²⁵ Sb	-5.5E-03 $\pm$ 1000%		¹²⁵ Sb	8.5E-02 $\pm$ 118%
	¹³⁴ Cs	5.8E-03 $\pm$ 397%		¹³⁴ Cs	-4.7E-02 $\pm$ 100%
	¹³⁷ Cs	-4.3E-03 $\pm$ 535%		¹³⁷ Cs	1.5E-02 $\pm$ 280%
	¹⁴⁴ Ce	-4.0E-03 $\pm$ 1000%		¹⁴⁴ Ce	-1.8E-01 $\pm$ 139%
	¹⁵² Eu	6.9E-02 $\pm$ 100%		¹⁵² Eu	1.5E-01 $\pm$ 80%
	¹⁵⁴ Eu	3.1E-02 $\pm$ 190%		¹⁵⁴ Eu	3.5E-02 $\pm$ 314%
	¹⁵⁵ Eu	-1.3E-02 $\pm$ 638%		¹⁵⁵ Eu	5.2E-02 $\pm$ 269%
	²³⁴ U	8.9E-02 $\pm$ 37%		²³⁴ U	8.4E-02 $\pm$ 39%
	²³⁵ U	2.3E-02 $\pm$ 52%		²³⁵ U	1.1E-02 $\pm$ 100%
	²³⁸ U	1.2E-01 $\pm$ 36%		²³⁸ U	1.1E-01 $\pm$ 37%
	²³⁸ Pu	7.6E-03 $\pm$ 197%		²³⁸ Pu	5.5E-03 $\pm$ 273%
	^{239,240} Pu	4.4E-03 $\pm$ 200%		^{239,240} Pu	1.4E-02 $\pm$ 63%

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V117	⁶⁰ Co	-8.9E-04 $\pm$ 1000%	V118	⁶⁰ Co	7.3E-03 $\pm$ 329%
	⁶⁵ Zn	-3.0E-03 $\pm$ 1000%		⁶⁵ Zn	-4.6E-02 $\pm$ 120%
	⁹⁰ Sr	5.3E-01 $\pm$ 30%		⁹⁰ Sr	4.4E-01 $\pm$ 34%
	¹⁰³ Ru	-3.1E-02 $\pm$ 100%		¹⁰³ Ru	8.6E-03 $\pm$ 221%
	¹⁰⁶ Ru	-3.0E-01 $\pm$ 100%		¹⁰⁶ Ru	-4.1E-02 $\pm$ 463%
	¹¹³ Sn	-1.9E-03 $\pm$ 1000%		¹¹³ Sn	1.4E-03 $\pm$ 1000%
	¹²⁵ Sb	1.3E-02 $\pm$ 531%		¹²⁵ Sb	2.7E-02 $\pm$ 211%
	¹³⁴ Cs	1.5E-02 $\pm$ 200%		¹³⁴ Cs	8.3E-03 $\pm$ 265%
	¹³⁷ Cs	1.1E-02 $\pm$ 309%		¹³⁷ Cs	-7.7E-03 $\pm$ 286%
	¹⁴⁴ Ce	5.2E-02 $\pm$ 346%		¹⁴⁴ Ce	1.1E-02 $\pm$ 1000%
	¹⁵² Eu	-5.1E-02 $\pm$ 161%		¹⁵² Eu	6.8E-02 $\pm$ 85%
	¹⁵⁴ Eu	8.1E-04 $\pm$ 1000%		¹⁵⁴ Eu	5.6E-02 $\pm$ 130%
	¹⁵⁵ Eu	8.9E-02 $\pm$ 110%		¹⁵⁵ Eu	6.5E-03 $\pm$ 969%
	²³⁴ U	4.6E-02 $\pm$ 43%		²³⁴ U	7.3E-02 $\pm$ 38%
	²³⁵ U	1.4E-02 $\pm$ 70%		²³⁵ U	1.6E-02 $\pm$ 62%
	²³⁸ U	4.9E-02 $\pm$ 43%		²³⁸ U	8.1E-02 $\pm$ 38%
	²³⁸ Pu	-5.2E-03 $\pm$ 212%		²³⁸ Pu	7.7E-03 $\pm$ 119%
	^{239,240} Pu	4.2E-03 $\pm$ 131%		^{239,240} Pu	4.4E-03 $\pm$ 150%

Table 4-13 1999 Vegetation Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V119	⁶⁰ Co	-5.6E-04 $\pm$ 1000%	V121	⁶⁰ Co	-2.3E-02 $\pm$ 100%
	⁶⁵ Zn	-1.1E-01 $\pm$ 100%		⁶⁵ Zn	4.4E-02 $\pm$ 150%
	⁹⁰ Sr	3.3E-01 $\pm$ 52%		⁹⁰ Sr	5.6E-01 $\pm$ 80%
	¹⁰³ Ru	-2.5E-02 $\pm$ 100%		¹⁰³ Ru	3.3E-03 $\pm$ 727%
	¹⁰⁶ Ru	-4.6E-02 $\pm$ 500%		¹⁰⁶ Ru	4.3E-02 $\pm$ 651%
	¹¹³ Sn	-2.6E-03 $\pm$ 1000%		¹¹³ Sn	-2.4E-02 $\pm$ 142%
	¹²⁵ Sb	1.1E-02 $\pm$ 564%		¹²⁵ Sb	-4.2E-03 $\pm$ 1000%
	¹³⁴ Cs	1.0E-02 $\pm$ 270%		¹³⁴ Cs	3.6E-04 $\pm$ 1000%
	¹³⁷ Cs	1.3E-02 $\pm$ 200%		¹³⁷ Cs	-7.8E-03 $\pm$ 346%
	¹⁴⁴ Ce	1.0E-01 $\pm$ 160%		¹⁴⁴ Ce	-1.7E-01 $\pm$ 112%
	¹⁵² Eu	-5.0E-02 $\pm$ 140%		¹⁵² Eu	-5.0E-03 $\pm$ 1000%
	¹⁵⁴ Eu	-4.0E-02 $\pm$ 190%		¹⁵⁴ Eu	4.9E-04 $\pm$ 1000%
	¹⁵⁵ Eu	-8.1E-02 $\pm$ 110%		¹⁵⁵ Eu	-6.1E-02 $\pm$ 161%
	²³⁴ U	2.0E-01 $\pm$ 34%		²³⁴ U	1.1E-01 $\pm$ 37%
	²³⁵ U	1.3E-02 $\pm$ 72%		²³⁵ U	1.7E-02 $\pm$ 65%
	²³⁸ U	1.9E-01 $\pm$ 34%		²³⁸ U	6.3E-02 $\pm$ 41%
	²³⁸ Pu	7.6E-03 $\pm$ 120%		²³⁸ Pu	1.0E-03 $\pm$ 830%
	^{239,240} Pu	5.4E-03 $\pm$ 94%		^{239,240} Pu	1.0E-03 $\pm$ 450%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V123	⁶⁰ Co	-1.8E-03 $\pm$ 1000%	V123 (Duplicate)	⁶⁰ Co	1.1E-02 $\pm$ 309%
	⁶⁵ Zn	-1.0E-01 $\pm$ 110%		⁶⁵ Zn	4.7E-02 $\pm$ 200%
	⁹⁰ Sr	6.1E-01 $\pm$ 30%		⁹⁰ Sr	4.4E-01 $\pm$ 41%
	¹⁰³ Ru	2.2E-02 $\pm$ 191%		¹⁰³ Ru	-4.7E-02 $\pm$ 100%
	¹⁰⁶ Ru	5.8E-01 $\pm$ 74%		¹⁰⁶ Ru	-1.1E-01 $\pm$ 309%
	¹¹³ Sn	-1.9E-02 $\pm$ 311%		¹¹³ Sn	-7.7E-03 $\pm$ 584%
	¹²⁵ Sb	-3.7E-02 $\pm$ 324%		¹²⁵ Sb	-6.6E-03 $\pm$ 1000%
	¹³⁴ Cs	-1.8E-02 $\pm$ 261%		¹³⁴ Cs	4.2E-02 $\pm$ 93%
	¹³⁷ Cs	2.0E-02 $\pm$ 240%		¹³⁷ Cs	-3.4E-02 $\pm$ 109%
	¹⁴⁴ Ce	-1.0E-01 $\pm$ 290%		¹⁴⁴ Ce	3.7E-02 $\pm$ 649%
	¹⁵² Eu	-1.3E-01 $\pm$ 100%		¹⁵² Eu	2.0E-01 $\pm$ 60%
	¹⁵⁴ Eu	3.5E-02 $\pm$ 400%		¹⁵⁴ Eu	3.8E-02 $\pm$ 263%
	¹⁵⁵ Eu	1.1E-01 $\pm$ 145%		¹⁵⁵ Eu	-1.0E-01 $\pm$ 120%
	²³⁴ U	5.2E-02 $\pm$ 44%		²³⁴ U	3.7E-02 $\pm$ 49%
	²³⁵ U	8.4E-03 $\pm$ 90%		²³⁵ U	1.8E-02 $\pm$ 72%
	²³⁸ U	2.1E-02 $\pm$ 57%		²³⁸ U	1.5E-02 $\pm$ 65%
	²³⁸ Pu	9.0E-03 $\pm$ 1000%		²³⁸ Pu	1.1E-02 $\pm$ 145%
	^{239,240} Pu	2.9E-03 $\pm$ 131%		^{239,240} Pu	4.3E-03 $\pm$ 109%

Table 4-13 1999 Vegetation Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V124	⁶⁰ Co	5.1E-03 $\pm$ 471%	V125	⁶⁰ Co	-2.9E-02 $\pm$ 121%
	⁶⁵ Zn	3.2E-02 $\pm$ 209%		⁶⁵ Zn	-1.4E-02 $\pm$ 557%
	⁹⁰ Sr	6.4E-01 $\pm$ 25%		⁹⁰ Sr	2.6E-01 $\pm$ 54%
	¹⁰³ Ru	3.7E-04 $\pm$ 1000%		¹⁰³ Ru	2.6E-02 $\pm$ 119%
	¹⁰⁶ Ru	8.3E-02 $\pm$ 289%		¹⁰⁶ Ru	-8.2E-02 $\pm$ 378%
	¹¹³ Sn	3.9E-04 $\pm$ 1000%		¹¹³ Sn	-7.4E-04 $\pm$ 1000%
	¹²⁵ Sb	-3.1E-02 $\pm$ 261%		¹²⁵ Sb	-1.7E-02 $\pm$ 541%
	¹³⁴ Cs	1.2E-02 $\pm$ 217%		¹³⁴ Cs	-1.5E-02 $\pm$ 227%
	¹³⁷ Cs	1.0E-02 $\pm$ 320%		¹³⁷ Cs	-1.3E-02 $\pm$ 277%
	¹⁴⁴ Ce	4.2E-02 $\pm$ 476%		¹⁴⁴ Ce	1.2E-01 $\pm$ 192%
	¹⁵² Eu	1.2E-01 $\pm$ 71%		¹⁵² Eu	2.4E-02 $\pm$ 417%
	¹⁵⁴ Eu	2.0E-02 $\pm$ 450%		¹⁵⁴ Eu	-9.0E-03 $\pm$ 1000%
	¹⁵⁵ Eu	4.4E-02 $\pm$ 227%		¹⁵⁵ Eu	9.5E-02 $\pm$ 126%
	²³⁴ U	4.0E-02 $\pm$ 45%		²³⁴ U	6.1E-02 $\pm$ 39%
	²³⁵ U	1.8E-02 $\pm$ 56%		²³⁵ U	8.1E-03 $\pm$ 85%
	²³⁸ U	4.4E-02 $\pm$ 43%		²³⁸ U	4.3E-02 $\pm$ 42%
	²³⁸ Pu	-4.6E-03 $\pm$ 211%		²³⁸ Pu	2.2E-02 $\pm$ 59%
	^{239,240} Pu	5.6E-03 $\pm$ 98%		^{239,240} Pu	3.7E-03 $\pm$ 149%

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V126	⁶⁰ Co	1.4E-02 $\pm$ 279%	V127	⁶⁰ Co	9.1E-03 $\pm$ 308%
	⁶⁵ Zn	-2.7E-02 $\pm$ 370%		⁶⁵ Zn	5.6E-02 $\pm$ 139%
	⁹⁰ Sr	4.6E-01 $\pm$ 35%		⁹⁰ Sr	1.7E-01 $\pm$ 82%
	¹⁰³ Ru	2.6E-02 $\pm$ 138%		¹⁰³ Ru	1.6E-03 $\pm$ 1000%
	¹⁰⁶ Ru	2.8E-02 $\pm$ 1000%		¹⁰⁶ Ru	-1.5E-01 $\pm$ 187%
	¹¹³ Sn	6.0E-02 $\pm$ 82%		¹¹³ Sn	7.1E-03 $\pm$ 620%
	¹²⁵ Sb	6.3E-02 $\pm$ 159%		¹²⁵ Sb	4.5E-02 $\pm$ 200%
	¹³⁴ Cs	1.1E-02 $\pm$ 418%		¹³⁴ Cs	4.6E-03 $\pm$ 739%
	¹³⁷ Cs	8.0E-03 $\pm$ 525%		¹³⁷ Cs	-6.3E-03 $\pm$ 540%
	¹⁴⁴ Ce	4.7E-03 $\pm$ 1000%		¹⁴⁴ Ce	2.1E-02 $\pm$ 1000%
	¹⁵² Eu	7.7E-02 $\pm$ 156%		¹⁵² Eu	7.6E-02 $\pm$ 145%
	¹⁵⁴ Eu	-1.1E-01 $\pm$ 109%		¹⁵⁴ Eu	7.7E-02 $\pm$ 110%
	¹⁵⁵ Eu	-6.0E-02 $\pm$ 233%		¹⁵⁵ Eu	7.3E-02 $\pm$ 164%
	²³⁴ U	4.2E-01 $\pm$ 31%		²³⁴ U	2.3E-02 $\pm$ 61%
	²³⁵ U	3.3E-02 $\pm$ 48%		²³⁵ U	1.6E-02 $\pm$ 69%
	²³⁸ U	3.9E-01 $\pm$ 31%		²³⁸ U	2.2E-02 $\pm$ 55%
	²³⁸ Pu	1.1E-02 $\pm$ 89%		²³⁸ Pu	1.2E-02 $\pm$ 92%
	^{239,240} Pu	4.9E-03 $\pm$ 96%		^{239,240} Pu	2.8E-03 $\pm$ 179%

Table 4-13 1999 Vegetation Sampling Results, 300/400 Areas (pCi/g $\pm$ overall analytical error)
(cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
V128	⁶⁰ Co	-3.5E-03 $\pm$ 943%	V129	⁶⁰ Co	-1.1E-02 $\pm$ 318%
	⁶⁵ Zn	-1.2E-01 $\pm$ 100%		⁶⁵ Zn	-9.5E-02 $\pm$ 100%
	⁹⁰ Sr	3.5E-01 $\pm$ 40%		⁹⁰ Sr	4.5E-01 $\pm$ 36%
	¹⁰³ Ru	-1.5E-02 $\pm$ 200%		¹⁰³ Ru	4.0E-04 $\pm$ 1000%
	¹⁰⁶ Ru	1.3E-01 $\pm$ 238%		¹⁰⁶ Ru	-1.1E-01 $\pm$ 291%
	¹¹³ Sn	-4.2E-02 $\pm$ 110%		¹¹³ Sn	1.5E-02 $\pm$ 267%
	¹²⁵ Sb	-6.8E-02 $\pm$ 121%		¹²⁵ Sb	5.7E-03 $\pm$ 1000%
	¹³⁴ Cs	1.9E-02 $\pm$ 168%		¹³⁴ Cs	-7.6E-03 $\pm$ 487%
	¹³⁷ Cs	6.0E-03 $\pm$ 567%		¹³⁷ Cs	1.6E-02 $\pm$ 219%
	¹⁴⁴ Ce	-1.0E-01 $\pm$ 240%		¹⁴⁴ Ce	1.1E-01 $\pm$ 200%
	¹⁵² Eu	-3.2E-02 $\pm$ 291%		¹⁵² Eu	-1.1E-02 $\pm$ 891%
	¹⁵⁴ Eu	-9.7E-02 $\pm$ 113%		¹⁵⁴ Eu	5.6E-02 $\pm$ 196%
	¹⁵⁵ Eu	-3.0E-02 $\pm$ 400%		¹⁵⁵ Eu	-5.1E-02 $\pm$ 255%
	²³⁴ U	3.7E-02 $\pm$ 46%		²³⁴ U	4.5E-02 $\pm$ 44%
	²³⁵ U	8.4E-03 $\pm$ 82%		²³⁵ U	1.6E-02 $\pm$ 60%
	²³⁸ U	9.8E-03 $\pm$ 73%		²³⁸ U	3.9E-02 $\pm$ 46%
	²³⁸ Pu	-5.8E-03 $\pm$ 172%		²³⁸ Pu	9.7E-04 $\pm$ 1000%
	^{239,240} Pu	2.9E-03 $\pm$ 121%		^{239,240} Pu	1.1E-02 $\pm$ 77%

Location	Isotope	Result $\pm$ Error
V130	⁶⁰ Co	4.4E-02 $\pm$ 84%
	⁶⁵ Zn	-7.7E-02 $\pm$ 143%
	⁹⁰ Sr	5.3E-01 $\pm$ 30%
	¹⁰³ Ru	8.1E-03 $\pm$ 494%
	¹⁰⁶ Ru	-1.2E-01 $\pm$ 317%
	¹¹³ Sn	2.9E-02 $\pm$ 179%
	¹²⁵ Sb	-1.0E-01 $\pm$ 110%
	¹³⁴ Cs	2.0E-03 $\pm$ 1000%
	¹³⁷ Cs	5.0E-02 $\pm$ 90%
	¹⁴⁴ Ce	1.3E-01 $\pm$ 223%
	¹⁵² Eu	-4.2E-02 $\pm$ 310%
	¹⁵⁴ Eu	-5.2E-03 $\pm$ 1000%
	¹⁵⁵ Eu	-7.2E-02 $\pm$ 222%
	²³⁴ U	3.1E-02 $\pm$ 48%
	²³⁵ U	8.9E-03 $\pm$ 92%
	²³⁸ U	8.1E-03 $\pm$ 93%
	²³⁸ Pu	9.3E-03 $\pm$ 129%
	^{239,240} Pu	3.4E-03 $\pm$ 150%

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5.0 EXTERNAL RADIATION

External radiation fields were monitored near facilities and waste handling, storage, and disposal sites to measure, assess, and control the impacts of operations. TLDs were used at numerous fixed locations to gather dose rate information over longer periods of time, typically three months. Maps illustrating TLD locations in 1999 are provided in Figures 5-1 through 5-12. A comparison summary of the 1998 and 1999 TLD results for each of the operational areas is provided in Table 5-1. Individual TLD results for 1999 are provided in Tables 5-2 through 5-15.

Table 5-1 Thermoluminescent Dosimeter Results, 1998 vs. 1999 (mrem/yr)

Area	Number of Locations, 1999	1998		1999		% Change
		Maximum	Mean	Maximum	Mean	
100-B,C	5	110	97	100	90	-7%
100-D,DR	5	125	96	97	91	-5%
100-H	3	NA	NA	99	95	NA
100-K	11	720	180	320	130	-28%
100-N	14	7000	1600	6500	1400	-13%
212-R	1	NA	NA	1980	1940	NA
200/600	66	320	100	290	110	10%
300TEDF	6	89	83	90	87	5%
300	8	210	110	220	110	0%
400	7	87	84	93	85	1%
CVSF	4	NA	NA	120	85	NA
ERDF	3	100	95	94	91	-4%
TWRS	10	88	86	90	88	2%

CVSF= Cold Vacuum Storage Facility

ERDF = Environmental Restoration Disposal Facility

TEDF = Treated Effluent Disposal Facility

TWRS = Tank Waste Remediation System

100-B,C Area. Dose rates measured in 1999 were 7% lower than the 1998 levels. The 1999 average was 90 mrem/yr, comparable to offsite ambient background levels.

100-D,DR Area. Dose rates measured in 1999 were 5% lower than the 1998 levels, with an average of 91 mrem/yr, comparable to offsite ambient background levels.

100-H Area. Three TLDs were placed in the 100-H Area during the last three-quarters of 1999 to monitor remediation activities in the vicinity. Extrapolating the data to a full year resulted in an average of 95 mrem/yr, comparable to offsite ambient background levels.

100-K Area. Dose rates measured in 1999 were 28% lower than the 1998 levels, with an average of 130 mrem/yr. This was due to the removal of radioactive waste stored in the proximity of three TLD locations.

100-N Area. The average annual dose rate in the 100-N Area during 1999 was approximately 13% lower than that measured in 1998, due to the continuing decay of cobalt-60. The 1999 results indicate that direct radiation levels continue to be highest near the 1325-N Liquid Waste Disposal Facility. While the results for this facility were noticeably higher than those for other 100-N Area TLD locations, they were approximately 17% lower than dose rate levels measured at these locations in 1998. Because of the "skyshine" effect from the 1301-N and 1325-N Liquid Waste Disposal Facilities, dose rates measured at the N Springs in 1998 were again elevated above 100 mrem/yr, the DOE annual external dose limit to members of the public. However, neither a member of the public nor a Hanford worker would conceivably spend an entire year at the N Springs.

200 Areas. The highest dose rates were measured near waste handling facilities such as tank farms in the 200 Areas. The highest dose rate was measured at the 241-AY Tank Farm in the 200 East Area. The average annual dose rate measured in 1999 (110 mrem/yr) was 10% higher than the 1998 measurements.

212-R. One TLD was placed at the 212-R Railroad Car Disposition Area in 200 North Area during the last two quarters of 1999. This dosimeter was placed in close proximity to a radiation area erected to provide an administrative barrier in a 1 mrem/hr radiation field. The 1999 dose rate averaged 1,943 mrem/year after extrapolating the data to a full year. Dose rates were elevated above 100 mrem/year, the DOE annual external dose limit to members of the public. However, neither a member of the public nor a Hanford worker would conceivably spend an entire year at 212-R.

300 Area Treated Effluent Disposal Facility. The average dose rate at the 300 Area Treated Effluent Disposal Facility in 1999 was 87 mrem/yr, a 5% increase compared to 1998.

300 Area. The highest dose rates in the 300 Area were measured near the 316-3 Liquid Waste Disposal Facility (undergoing remediation). The average dose rate measured in the 300 Area in 1999 was 110 mrem/yr, equal to the average dose rate measured in 1998.

400 Area. The average dose rate measured in the 400 Area in 1999 was 85 mrem/yr, a 1% increase compared to 1998.

Cold Vacuum Drying Facility. Four TLDs were placed in the vicinity of the Cold Vacuum Drying Facility, near 100-KW, during the fourth quarter of 1999, to perform preoperational monitoring of the facility prior to processing spent nuclear fuels. The average dose for this quarter was 85 mrem.

Environmental Restoration Disposal Facility. Dose rates measured in 1999 decreased approximately 4% compared to the results observed in 1998. The 1999 average was 91 mrem/yr, comparable to offsite ambient background levels.

Tank Waste Remediation System. Dose rates measured in 1999 were 2% higher than the levels measured in 1998, with an average of 88 mrem/yr, comparable to offsite ambient background levels.

Figure 5-1 1999 Thermoluminescent Dosimeter Locations, 100-B, C Area

WMNWEM16-99FIG-1

Figure S-2 1999 Thermoluminescent Dosimeter Locations, 100-D, DR Area

Figure 5-3 1999 Thermoluminescent Dosimeter Locations, 100-H Area

WMNW/EM/6-99/FIGF-3

Figure 5-5 1999 Thermoluminescent Dosimeter Locations, 100-N Area

Figure 5-6 1999 Thermoluminescent Dosimeter Locations, 200 East Area

WMW/EM/6-99/FIG-5

Figure 5-7 1999 Thermoluminescent Dosimeter Locations, 200 West Area

WMNW/EMI/6-99/FIG-6

Figure 5-8 1999 Thermoluminescent Dosimeter Locations, 212-R

Figure 5-9 1999 Thermoluminescent Dosimeter Locations, 300 Area
Treated Effluent Disposal Facility and 300 Area

Figure 5-10 1999 Thermoluminescent Dosimeter Locations, 400 Area

Figure 5-11 1999 Thermoluminescent Dosimeter Locations,
Environmental Restoration Disposal Area

Figure 5-12 1999 Thermoluminescent Dosimeter Locations,
Tank Waste Remediation System

Table 5-2 1999 Thermoluminescent Dosimeter Results, 100-B,C Area

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
10	116-B-11 NE 001	0.01	0.29	26.5	91
11	116-B-11 NE 002	0.01	0.26	23.2	91
12	116-B-11 NW	0.01	0.26	24.1	91
13	116-C-1 N	0.01	0.23	20.7	91

2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
10	116-B-11 NE 001	0.01	0.27	29.1	106
11	116-B-11 NE 002	0.01	0.26	27.5	106
12	116-B-11 NW	0.01	0.27	28.8	106
13	116-C-1 N	0.01	0.23	24.1	106

3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
10	116-B-11 NE 001	0.01	0.27	24.2	91
11	116-B-11 NE 002	0.01	0.26	23.4	91
12	116-B-11 NW	0.01	0.25	22.3	91
13	116-C-1 N	0.01	0.24	21.6	91

4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
10	116-B-11 NE 001	0.01	0.27	21.5	81
11	116-B-11 NE 002	0.01	0.23	18.8	81
12	116-B-11 NW	0.01	0.24	19.2	81
13	116-C-1 N	0.01	0.23	18.5	81
14	116-C-1/DOH	0.01	0.22	17.8	81

Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)					
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM	
10	116-B-11 NE 001	0.011 $\pm$ 0.0005	0.27 $\pm$ 0.01	100 $\pm$ 4	
11	116-B-11 NE 002	0.010 $\pm$ 0.001	0.25 $\pm$ 0.01	92 $\pm$ 5	
12	116-B-11 NW	0.011 $\pm$ 0.001	0.25 $\pm$ 0.02	93 $\pm$ 6	
13	116-C-1 N	0.010 $\pm$ 0.0002	0.23 $\pm$ 0.005	84 $\pm$ 2	
14	116-C-1/DOH	0.009 $\pm$ NA	0.22 $\pm$ NA	80 $\pm$ NA	

NA - Not Applicable; Dosimeter installed during fourth quarter and 2SEM cannot be calculated

Table 5-3 1999 Thermoluminescent Dosimeter Results, 100-D,DR Area

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	W OF 116-D-7	0.01	0.24	22.2	91
2	NW OF 116-D-7	0.01	0.23	20.8	91
3	S OF EXISTING WELL	0.01	0.29	26.3	91
4	N OF 116-DR-9	0.01	0.26	23.8	91
5	NE OF 116-DR-9	0.01	0.27	24.4	91

2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	W OF 116-D-7	0.01	0.25	25.7	105
2	NW OF 116-D-7	0.01	0.23	23.7	105
3	S OF EXISTING WELL	0.01	0.26	27.8	105
4	N OF 116-DR-9	0.01	0.27	28.0	105
5	NE OF 116-DR-9	0.01	0.26	27.6	105

3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	W OF 116-D-7	0.01	0.24	22.1	92
2	NW OF 116-D-7	0.01	0.23	21.0	92
3	S OF EXISTING WELL	0.01	0.24	22.1	92
4	N OF 116-DR-9	0.01	0.27	24.4	92
5	NE OF 116-DR-9	0.01	0.27	24.7	92

4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	W OF 116-D-7	0.01	0.23	18.5	80
2	NW OF 116-D-7	0.01	0.23	18.4	80
3	S OF EXISTING WELL	0.01	0.23	18.4	80
4	N OF 116-DR-9	0.01	0.26	20.4	80
5	NE OF 116-DR-9	0.01	0.27	21.3	80

Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)					
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM	
1	W OF 116-D-7	0.010 $\pm$ 0.0003	0.24 $\pm$ 0.01	88 $\pm$ 2	
2	NW OF 116-D-7	0.010 $\pm$ 0.0001	0.23 $\pm$ 0.002	83 $\pm$ 1	
3	S OF EXISTING WELL	0.011 $\pm$ 0.001	0.26 $\pm$ 0.03	93 $\pm$ 9	
4	N OF 116-DR-9	0.011 $\pm$ 0.0002	0.26 $\pm$ 0.01	96 $\pm$ 2	
5	NE OF 116-DR-9	0.011 $\pm$ 0.0001	0.27 $\pm$ 0.003	97 $\pm$ 1	

Table 5-4 1999 Thermoluminescent Dosimeter Results, 100-H Area

2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	116H7 NORTH	0.01	0.25	26.6	105
2	116H7 SOUTH	0.01	0.25	26.7	105
3	116H1 NORTH	0.01	0.25	26.5	105

3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	116H7 NORTH	0.01	0.29	27.3	93
2	116H7 SOUTH	0.01	0.27	24.6	93
3	116H1 NORTH	0.01	0.26	24.1	93

4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	116H7 NORTH	0.01	0.27	21.2	79
2	116H7 SOUTH	0.01	0.26	20.7	79
3	116H1 NORTH	0.01	0.24	18.9	79

Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)				
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM
1	116H7 NORTH	0.011 $\pm$ 0.001	0.27 $\pm$ 0.02	99 $\pm$ 9
2	116H7 SOUTH	0.011 $\pm$ 0.0002	0.26 $\pm$ 0.01	95 $\pm$ 2
3	116H1 NORTH	0.010 $\pm$ 0.0004	0.25 $\pm$ 0.01	91 $\pm$ 4

Table 5-5 1999 Thermoluminescent Dosimeter Results, 100-K Area

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	100-K SOUTH GATE	0.01	0.23	20.6	91
2	105-KW S	0.01	0.23	20.6	91
3	105-KW SW	0.01	0.23	20.8	91
4	105-KW NW	0.01	0.23	20.9	91
5	105-KW N	0.01	0.26	23.4	91
6	105-KW E	0.01	0.22	20.2	91
7	105-KE S	0.01	0.25	22.5	91
8	105-KE SW	0.04	1.08	98.2	91
9	105-KE NW	0.01	0.29	26.2	91
10	105-KE N	0.02	0.51	46.7	91
11	105-KE E	0.01	0.24	22.0	91
2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	100-K SOUTH GATE	0.01	0.22	23.3	106
2	105-KW S	0.01	0.24	25.3	106
3	105-KW SW	0.01	0.23	24.6	106
4	105-KW NW	0.01	0.23	23.9	106
5	105-KW N	0.01	0.25	27.0	106
6	105-KW E	0.01	0.22	23.0	106
7	105-KE S	0.01	0.25	25.9	106
8	105-KE SW	0.04	1.05	111.7	106
9	105-KE NW	0.01	0.30	31.7	106
10	105-KE N	0.02	0.53	55.9	106
11	105-KE E	0.01	0.25	26.5	106
3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	100-K SOUTH GATE	0.01	0.21	19.4	91
2	105-KW S	0.01	0.22	19.8	91
3	105-KW SW	0.01	0.22	20.3	91
4	105-KW NW	0.01	0.23	20.9	91
5	105-KW N	0.01	0.26	23.7	91
6	105-KW E	0.01	0.22	20.4	91
7	105-KE S	0.01	0.25	22.8	91
8	105-KE SW	0.05	1.11	100.6	91
9	105-KE NW	0.01	0.28	25.8	91
10	105-KE N	0.02	0.51	46.0	91
11	105-KE E	0.01	0.25	23.0	91

Table 5-5 1999 Thermoluminescent Dosimeter Results, 100-K Area (cont)

4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	100-K SOUTH GATE	0.01	0.21	16.6	81
2	105-KW S	0.01	0.23	18.5	81
3	105-KW SW	0.01	0.25	20.0	81
4	105-KW NW	0.01	0.25	20.2	81
5	105-KW N	0.01	0.22	17.4	81
6	105-KW E	0.01	0.22	17.6	81
7	105-KE S	0.05	1.13	91.6	81
8	105-KE SW	0.01	0.26	20.9	81
9	105-KE NW	0.02	0.52	42.4	81
10	105-KE N	0.01	0.23	18.8	81
11	105-KE E	0.01	0.23	18.8	81

Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)				
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM
1	100-K SOUTH GATE	0.009 $\pm$ 0.0004	0.22 $\pm$ 0.01	79 $\pm$ 3
2	105-KW S	0.009 $\pm$ 0.0003	0.23 $\pm$ 0.01	83 $\pm$ 3
3	105-KW SW	0.010 $\pm$ 0.0004	0.23 $\pm$ 0.01	85 $\pm$ 4
4	105-KW NW	0.010 $\pm$ 0.0004	0.23 $\pm$ 0.01	85 $\pm$ 4
5	105-KW N	0.010 $\pm$ 0.001	0.25 $\pm$ 0.02	90 $\pm$ 8
6	105-KW E	0.009 $\pm$ 0.0001	0.22 $\pm$ 0.004	80 $\pm$ 1
7	105-KE S	0.020 $\pm$ 0.018	0.47 $\pm$ 0.44	171 $\pm$ 161
8	105-KE SW	0.036 $\pm$ 0.017	0.87 $\pm$ 0.41	319 $\pm$ 150
9	105-KE NW	0.015 $\pm$ 0.005	0.35 $\pm$ 0.12	127 $\pm$ 43
10	105-KE N	0.019 $\pm$ 0.006	0.44 $\pm$ 0.14	162 $\pm$ 52
11	105-KE E	0.010 $\pm$ 0.0004	0.24 $\pm$ 0.01	89 $\pm$ 3

Table 5-6 1999 Thermoluminescent Dosimeter Results, 100-N Area

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	1301-N E FENCELINE	0.07	1.70	155	91
3	1301-N NE	0.03	0.82	75	91
6	6-1314 FENCE	0.02	0.48	44	92
7	1908 N FENCE	0.03	0.80	73	92
14	MO-536 FENCELINE	0.03	0.79	72	92
17	163-N WASTE PAD	0.01	0.23	21	92
22	1301-N W	0.04	0.85	77	91
26	N-SPRINGS	0.02	0.47	43	91
29	107-N SOUTH	0.05	1.23	113	92
30	1325-N EAST	0.43	10.2	939	92
31	1301-N FENCELINE	0.03	0.82	76	92
32	1723-N NE	0.03	0.68	63	92
34	1325-N SW	0.80	19.12	1740	91
35	1325-N NW	0.77	18.37	1672	91
2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	1301-N E FENCELINE	0.07	1.71	180	105
3	1301-N NE	0.03	0.81	85	105
6	6-1314 FENCE	0.02	0.49	52	105
7	1908 N FENCE	0.03	0.78	81	105
14	MO-536 FENCELINE	0.03	0.78	82	105
17	163-N WASTE PAD	0.01	0.23	24	105
22	1301-N W	0.03	0.81	85	105
26	N-SPRINGS	0.02	0.47	49	105
29	107-N SOUTH	0.05	1.16	121	105
30	1325-N EAST	0.43	10.4	1094	105
31	1301-N FENCELINE	0.04	0.84	88	105
32	1723-N NE	0.03	0.70	74	105
34	1325-N SW	0.75	18.08	1898	105
35	1325-N NW	0.73	17.43	1830	105
3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	1301-N E FENCELINE	0.07	1.74	160	92
3	1301-N NE	0.04	0.85	78	92
6	6-1314 FENCE	0.02	0.52	48	92
7	1908 N FENCE	0.03	0.76	70	92
14	MO-536 FENCELINE	0.03	0.80	73	92
17	163-N WASTE PAD	0.01	0.23	21	92
22	1301-N W	0.04	0.86	79	92
26	N-SPRINGS	0.02	0.48	44	92
29	107-N SOUTH	0.05	1.15	106	92
30	1325-N EAST	0.42	10.14	933	92
31	1301-N FENCELINE	0.04	0.86	79	92
32	1723-N NE	0.03	0.67	62	92
34	1325-N SW	0.72	17.25	1587	92
35	1325-N NW	0.68	16.28	1498	92

Table 5-6 1999 Thermoluminescent Dosimeter Results, 100-N Area (cont)

TLD ID	Site Description	4th Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
1	1301-N E FENCELINE	0.07	1.56	125	80
3	1301-N NE	0.03	0.75	60	80
6	6-1314 FENCE	0.02	0.45	36	80
7	1908 N FENCE	0.03	0.74	59	80
14	MO-536 FENCELINE	0.03	0.76	61	80
17	163-N WASTE PAD	0.01	0.22	18	80
22	1301-N W	0.03	0.82	66	80
26	N-SPRINGS	0.02	0.44	35	80
29	107-N SOUTH	0.05	1.09	87	80
30	1325-N EAST	0.41	9.82	786	80
31	1301-N FENCELINE	0.03	0.78	62	80
32	1723-N NE	0.03	0.63	50	80
34	1325-N SW	0.71	17.04	1363	80
35	1325-N NW	0.69	16.53	1322	80

TLD ID	Site Description	Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)		
		mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM
1	1301-N E FENCELINE	0.07 $\pm$ 0.003	1.7 $\pm$ 0.08	612 $\pm$ 28
3	1301-N NE	0.03 $\pm$ 0.002	0.8 $\pm$ 0.04	295 $\pm$ 14
6	6-1314 FENCE	0.02 $\pm$ 0.001	0.5 $\pm$ 0.03	177 $\pm$ 10
7	1908 N FENCE	0.03 $\pm$ 0.001	0.8 $\pm$ 0.02	280 $\pm$ 9
14	MO-536 FENCELINE	0.03 $\pm$ 0.001	0.8 $\pm$ 0.02	285 $\pm$ 6
17	163-N WASTE PAD	0.01 $\pm$ 0.000	0.2 $\pm$ 0.003	82 $\pm$ 1
22	1301-N W	0.03 $\pm$ 0.001	0.8 $\pm$ 0.02	305 $\pm$ 8
26	N-SPRINGS	0.02 $\pm$ 0.001	0.5 $\pm$ 0.02	169 $\pm$ 6
29	107-N SOUTH	0.05 $\pm$ 0.002	1.2 $\pm$ 0.06	422 $\pm$ 21
30	1325-N EAST	0.42 $\pm$ 0.01	10.1 $\pm$ 0.25	3704 $\pm$ 90
31	1301-N FENCELINE	0.03 $\pm$ 0.001	0.8 $\pm$ 0.04	301 $\pm$ 13
32	1723-N NE	0.03 $\pm$ 0.001	0.7 $\pm$ 0.03	245 $\pm$ 11
34	1325-N SW	0.74 $\pm$ 0.04	17.9 $\pm$ 0.95	6523 $\pm$ 345
35	1325-N NW	0.71 $\pm$ 0.04	17.2 $\pm$ 0.95	6261 $\pm$ 347

Table 5-7 1999 Thermoluminescent Dosimeter Results, 200 East Area

TLD ID	Site Description	1st Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
217	HWVP SOUTHWEST	0.01	0.23	22.9	98
218	HWVP NORTHWEST	0.01	0.22	21.7	98
219	218-E-16 (GROUT) SOUTH	0.01	0.25	24.6	98
220	218-E-16 (GROUT) NORTHWEST	0.01	0.25	24.6	98
221	218-E-16 (GROUT) NORTH	0.01	0.25	24.5	98
222	241-BX/BY NORTH	NR	NR	NR	NR
223	241-B EAST	0.02	0.40	38.8	98
224	HWVP SOUTHWEST (GATE 814)	0.01	0.23	22.3	98
229	218-E-10 EAST	0.01	0.26	25.2	98
230	241-BX SOUTH	0.01	0.32	30.9	98
231	218-E-12	0.01	0.25	24.4	98
232	221-B SOUTHEAST	0.02	0.39	37.7	98
233	221-B NORTHEAST	0.01	0.25	24.6	98
234	241-C WEST	0.01	0.30	29.5	98
237	HWVP EAST	0.01	0.23	22.2	98
238	221-B SOUTHWEST	0.01	0.25	24.1	98
239	221-B NORTH	0.01	0.24	23.4	98
240	HWVP NORTHEAST	0.01	0.23	22.3	98
241	216-B-63	0.01	0.24	23.8	98
242	202-A SOUTHWEST	0.01	0.24	23.5	98
243	202-A SOUTH	0.01	0.23	22.6	98
244	202-A NORTHWEST	0.01	0.26	25.9	98
245	200E SOUTH	0.01	0.24	23.5	98
246	200E NORTHEAST	0.01	0.24	23.1	98
247	202-A SOUTHEAST	0.01	0.25	24.1	98
249	241-C SOUTHWEST	0.01	0.30	29.6	98
250	241-AY WEST	0.03	0.65	63.5	98
251	241-C NORTH	0.02	0.41	39.9	98
252	241-AN WEST	0.01	0.33	32.2	98
253	241-AN NORTH	0.01	0.28	27.8	98
254	241-C SOUTHEAST	0.02	0.40	39.0	98
255	241-AZ EAST	0.01	0.31	30.0	98
256	241-AX EAST	0.02	0.52	50.5	98
258	241-A SOUTH	0.03	0.65	63.3	98
259	241-AW NORTHWEST	0.01	0.31	30.2	98
261	241-AW SOUTHWEST	0.01	0.30	29.6	98
262	241-AP NORTHEAST	0.01	0.22	21.3	98
263	LERF SOUTHEAST	0.01	0.24	23.5	98
264	LERF NORTHWEST	0.01	0.23	22.9	98

NR - Not Returned to laboratory for analysis.

Table 5-7 1999 Thermoluminescent Dosimeter Results, 200 East Area (cont)

TLD ID	Site Description	2nd Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
217	HWVP SOUTHWEST	0.01	0.24	23.3	98
218	HWVP NORTHWEST	0.01	0.22	21.7	98
219	218-E-16 (GROUT) SOUTH	0.01	0.27	26.5	98
220	218-E-16 (GROUT) NORTHWEST	0.01	0.27	26.5	98
221	218-E-16 (GROUT) NORTH	0.01	0.26	25.0	98
222	241-BX/BY NORTH	0.01	0.32	31.8	98
223	241-B EAST	0.02	0.39	38.6	98
224	HWVP SOUTHWEST (GATE 814)	0.01	0.23	22.5	98
229	218-E-10 EAST	0.01	0.25	24.9	98
230	241-BX SOUTH	0.01	0.34	32.8	98
231	218-E-12	0.01	0.28	27.4	98
232	221-B SOUTHEAST	0.02	0.37	35.7	98
233	221-B NORTHEAST	0.01	0.25	24.7	98
234	241-C WEST	0.01	0.29	28.1	98
237	HWVP EAST	0.01	0.23	22.1	98
238	221-B SOUTHWEST	0.01	0.24	23.4	98
239	221-B NORTH	0.01	0.24	23.3	98
240	HWVP NORTHEAST	0.01	0.23	22.1	98
241	216-B-63	0.01	0.25	24.7	98
242	202-A SOUTHWEST	0.01	0.24	23.8	98
243	202-A SOUTH	0.01	0.23	22.7	98
244	202-A NORTHWEST	0.01	0.26	25.1	98
245	200E SOUTH	0.01	0.24	23.1	98
246	200E NORTHEAST	0.01	0.24	23.0	98
247	202-A SOUTHEAST	0.01	0.23	22.1	98
249	241-C SOUTHWEST	0.01	0.30	29.8	98
250	241-AY WEST	0.03	0.78	76.5	98
251	241-C NORTH	0.02	0.36	35.7	98
252	241-AN WEST	0.01	0.30	29.8	98
253	241-AN NORTH	0.01	0.27	26.8	98
254	241-C SOUTHEAST	0.02	0.39	37.9	98
255	241-AZ EAST	0.01	0.33	32.4	98
256	241-AX EAST	0.02	0.52	51.2	98
258	241-A SOUTH	0.03	0.76	74.9	98
259	241-AW NORTHWEST	0.01	0.32	31.1	98
261	241-AW SOUTHWEST	0.01	0.31	30.6	98
262	241-AP NORTHEAST	0.01	0.23	22.3	98
263	LERF SOUTHEAST	0.01	0.25	24.6	98
264	LERF NORTHWEST	0.01	0.24	23.6	98

Table 5-7 1999 Thermoluminescent Dosimeter Results, 200 East Area (cont)

TLD ID	Site Description	3rd Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
217	HWVP SOUTHWEST	0.01	0.26	24.0	91
218	HWVP NORTHWEST	0.01	0.24	21.5	91
219	218-E-16 (GROUT) SOUTH	0.01	0.27	24.5	91
220	218-E-16 (GROUT) NORTHWEST	0.01	0.28	25.4	91
221	218-E-16 (GROUT) NORTH	0.01	0.26	23.6	91
222	241-BX/BY NORTH	0.01	0.33	29.7	90
223	241-B EAST	0.02	0.36	33.4	92
224	HWVP SOUTHWEST (GATE 814)	0.01	0.24	21.8	90
229	218-E-10 EAST	0.01	0.29	25.8	90
230	241-BX SOUTH	0.01	0.35	31.6	90
231	218-E-12	0.01	0.26	23.3	91
232	221-B SOUTHEAST	0.02	0.38	34.4	90
233	221-B NORTHEAST	0.01	0.26	23.6	90
234	241-C WEST	0.01	0.32	28.7	90
237	HWVP EAST	0.01	0.24	21.3	90
238	221-B SOUTHWEST	0.01	0.27	23.9	90
239	221-B NORTH	0.01	0.26	23.0	90
240	HWVP NORTHEAST	0.01	0.23	21.0	90
241	216-B-63	0.01	0.27	23.9	90
242	202-A SOUTHWEST	0.01	0.24	22.2	91
243	202-A SOUTH	0.01	0.24	21.7	91
244	202-A NORTHWEST	0.01	0.30	27.3	90
245	200E SOUTH	0.01	0.24	22.1	91
246	200E NORTHEAST	0.01	0.26	23.0	90
247	202-A SOUTHEAST	0.01	0.24	21.7	91
249	241-C SOUTHWEST	0.01	0.31	28.0	90
250	241-AY WEST	0.03	0.65	59.6	91
251	241-C NORTH	0.02	0.38	34.6	90
252	241-AN WEST	0.01	0.30	27.7	91
253	241-AN NORTH	0.01	0.27	24.3	90
254	241-C SOUTHEAST	0.02	0.41	37.6	92
255	241-AZ EAST	0.02	0.38	34.8	91
256	241-AX EAST	0.02	0.52	47.8	92
258	241-A SOUTH	0.04	0.90	82.2	91
259	241-AW NORTHWEST	0.02	0.40	36.5	91
261	241-AW SOUTHWEST	0.01	0.32	29.2	91
262	241-AP NORTHEAST	0.01	0.24	21.9	91
263	LERF SOUTHEAST	0.01	0.25	22.9	90
264	LERF NORTHWEST	0.01	0.25	22.3	90
310	CSB EAST	0.01	0.23	20.7	90
311	CSB WEST	0.01	0.24	21.3	90
312	244-A LS	0.02	0.38	34.9	91

Table 5-7 1999 Thermoluminescent Dosimeter Results, 200 East Area (cont)

TLD ID	Site Description	4th Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
217	HWVP SOUTHWEST	0.01	0.23	17.7	77
218	HWVP NORTHWEST	0.01	0.22	17.1	77
219	218-E-16 (GROUT) SOUTH	0.01	0.26	20.6	79
220	218-E-16 (GROUT) NORTHWEST	0.01	0.27	21.2	79
221	218-E-16 (GROUT) NORTH	0.01	0.25	19.7	79
222	241-BX/BY NORTH	0.01	0.30	23.9	79
223	241-B EAST	0.01	0.35	27.2	77
224	HWVP SOUTHWEST (GATE 814)	0.01	0.23	18.1	79
229	218-E-10 EAST	0.01	0.26	20.2	78
230	241-BX SOUTH	0.01	0.31	24.1	79
231	218-E-12	0.01	0.25	19.1	78
232	221-B SOUTHEAST	0.02	0.39	31.1	79
233	221-B NORTHEAST	0.01	0.25	20.3	80
234	241-C WEST	0.01	0.29	23.2	79
237	HWVP EAST	0.01	0.22	17.3	78
238	221-B SOUTHWEST	0.01	0.23	17.9	79
239	221-B NORTH	0.01	0.25	19.9	79
240	HWVP NORTHEAST	0.01	0.21	16.2	78
241	216-B-63	0.01	0.26	20.8	79
242	202-A SOUTHWEST	0.01	0.24	18.9	78
243	202-A SOUTH	0.01	0.23	17.5	78
244	202-A NORTHWEST	0.01	0.26	21.0	80
245	200E SOUTH	0.01	0.24	18.3	78
246	200E NORTHEAST	0.01	0.23	17.9	79
247	202-A SOUTHEAST	0.01	0.22	17.0	78
249	241-C SOUTHWEST	0.01	0.28	22.4	79
250	241-AY WEST	0.03	0.67	52.1	78
251	241-C NORTH	0.02	0.37	29.2	79
252	241-AN WEST	0.01	0.29	22.8	78
253	241-AN NORTH	0.01	0.27	21.2	79
254	241-C SOUTHEAST	0.02	0.39	29.8	77
255	241-AZ EAST	0.02	0.47	36.9	78
256	241-AX EAST	0.02	0.48	37.1	77
258	241-A SOUTH	0.04	0.87	67.9	78
259	241-AW NORTHWEST	0.01	0.31	23.8	78
261	241-AW SOUTHWEST	0.01	0.31	24.0	78
262	241-AP NORTHEAST	0.01	0.23	17.8	78
263	LERF SOUTHEAST	0.01	0.24	19.1	79
264	LERF NORTHWEST	0.01	0.23	18.4	79
310	CSB EAST	0.01	0.21	16.2	78
311	CSB WEST	0.01	0.21	16.6	78
312	244-A LS	0.01	0.35	27.3	78

Table 5-7 1999 Thermoluminescent Dosimeter Results, 200 East Area (cont)

TLD ID	Site Description	Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)		
		mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM
217	HWVP SOUTHWEST	0.01 $\pm$ 0.001	0.24 $\pm$ 0.02	88 $\pm$ 6
218	HWVP NORTHWEST	0.01 $\pm$ 0.0003	0.23 $\pm$ 0.01	82 $\pm$ 3
219	218-E-16 (GROUT) SOUTH	0.01 $\pm$ 0.0004	0.26 $\pm$ 0.01	96 $\pm$ 3
220	218-E-16 (GROUT) NORTHWEST	0.01 $\pm$ 0.0005	0.27 $\pm$ 0.01	97 $\pm$ 4
221	218-E-16 (GROUT) NORTH	0.01 $\pm$ 0.0002	0.25 $\pm$ 0.01	93 $\pm$ 2
222	241-BX/BY NORTH	0.01 $\pm$ 0.001	0.32 $\pm$ 0.01	116 $\pm$ 6
223	241-B EAST	0.02 $\pm$ 0.001	0.38 $\pm$ 0.02	138 $\pm$ 8
224	HWVP SOUTHWEST (GATE 814)	0.01 $\pm$ 0.0003	0.23 $\pm$ 0.01	85 $\pm$ 2
229	218-E-10 EAST	0.01 $\pm$ 0.001	0.26 $\pm$ 0.02	96 $\pm$ 6
230	241-BX SOUTH	0.01 $\pm$ 0.001	0.33 $\pm$ 0.02	119 $\pm$ 7
231	218-E-12	0.01 $\pm$ 0.001	0.26 $\pm$ 0.02	94 $\pm$ 6
232	221-B SOUTHEAST	0.02 $\pm$ 0.001	0.38 $\pm$ 0.01	139 $\pm$ 4
233	221-B NORTHEAST	0.01 $\pm$ 0.0002	0.25 $\pm$ 0.01	93 $\pm$ 2
234	241-C WEST	0.01 $\pm$ 0.001	0.30 $\pm$ 0.01	110 $\pm$ 5
237	HWVP EAST	0.01 $\pm$ 0.0003	0.23 $\pm$ 0.01	83 $\pm$ 2
238	221-B SOUTHWEST	0.01 $\pm$ 0.001	0.24 $\pm$ 0.02	89 $\pm$ 6
239	221-B NORTH	0.01 $\pm$ 0.0004	0.25 $\pm$ 0.01	90 $\pm$ 3
240	HWVP NORTHEAST	0.01 $\pm$ 0.0004	0.22 $\pm$ 0.01	81 $\pm$ 4
241	216-B-63	0.01 $\pm$ 0.0004	0.26 $\pm$ 0.01	94 $\pm$ 4
242	202-A SOUTHWEST	0.01 $\pm$ 0.0001	0.24 $\pm$ 0.002	88 $\pm$ 1
243	202-A SOUTH	0.01 $\pm$ 0.0002	0.23 $\pm$ 0.01	84 $\pm$ 2
244	202-A NORTHWEST	0.01 $\pm$ 0.001	0.27 $\pm$ 0.02	99 $\pm$ 8
245	200E SOUTH	0.01 $\pm$ 0.0002	0.24 $\pm$ 0.004	87 $\pm$ 1
246	200E NORTHEAST	0.01 $\pm$ 0.001	0.24 $\pm$ 0.01	87 $\pm$ 5
247	202-A SOUTHEAST	0.01 $\pm$ 0.001	0.23 $\pm$ 0.01	85 $\pm$ 5
249	241-C SOUTHWEST	0.01 $\pm$ 0.0005	0.30 $\pm$ 0.01	110 $\pm$ 4
250	241-AY WEST	0.03 $\pm$ 0.003	0.69 $\pm$ 0.06	251 $\pm$ 23
251	241-C NORTH	0.02 $\pm$ 0.001	0.38 $\pm$ 0.02	139 $\pm$ 7
252	241-AN WEST	0.01 $\pm$ 0.001	0.31 $\pm$ 0.02	112 $\pm$ 6
253	241-AN NORTH	0.01 $\pm$ 0.0003	0.27 $\pm$ 0.01	100 $\pm$ 2
254	241-C SOUTHEAST	0.02 $\pm$ 0.0004	0.39 $\pm$ 0.01	144 $\pm$ 4
255	241-AZ EAST	0.02 $\pm$ 0.003	0.37 $\pm$ 0.07	136 $\pm$ 27
256	241-AX EAST	0.02 $\pm$ 0.001	0.51 $\pm$ 0.02	186 $\pm$ 7
258	241-A SOUTH	0.03 $\pm$ 0.005	0.80 $\pm$ 0.12	290 $\pm$ 42
259	241-AW NORTHWEST	0.01 $\pm$ 0.002	0.33 $\pm$ 0.05	122 $\pm$ 17
261	241-AW SOUTHWEST	0.01 $\pm$ 0.0003	0.31 $\pm$ 0.01	113 $\pm$ 3
262	241-AP NORTHEAST	0.01 $\pm$ 0.0004	0.23 $\pm$ 0.01	83 $\pm$ 3
263	LERF SOUTHEAST	0.01 $\pm$ 0.0003	0.25 $\pm$ 0.01	90 $\pm$ 3
264	LERF NORTHWEST	0.01 $\pm$ 0.0003	0.24 $\pm$ 0.01	87 $\pm$ 3
310	CSB EAST	0.01 $\pm$ 0.001	0.22 $\pm$ 0.02	80 $\pm$ 8
311	CSB WEST	0.01 $\pm$ 0.001	0.22 $\pm$ 0.02	82 $\pm$ 9
312	244-A LS	0.02 $\pm$ 0.001	0.37 $\pm$ 0.02	134 $\pm$ 13

Table 5-8 1999 Thermoluminescent Dosimeter Results, 200 West Area

TLD ID	Site Description	1st Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
202	218-W-2A	0.01	0.25	24.6	98
203	221-T EAST	0.01	0.33	31.9	98
204	241-TX EAST	0.02	0.37	36.7	98
205	216-Z-20	0.01	0.24	23.4	98
206	241-TX NORTH	0.01	0.31	30.2	98
207	241-U-WEST	0.01	0.27	26.0	98
208	241-U-EAST	0.01	0.28	27.5	98
209	221-U SOUTHEAST	0.01	0.25	24.2	98
210	241-SY	0.01	0.27	26.4	98
211	202-S SOUTHWEST	0.01	0.33	31.9	98
212	241-SY NORTH	0.01	0.33	32.2	98
213	241-S SOUTH	0.02	0.49	48.3	98
214	200W NORTHWEST	0.01	0.23	22.1	98
215	234-5Z NORTH	0.01	0.24	23.9	98
216	234-5Z SOUTH	0.01	0.24	23.7	98
226	218-W-5 WEST	0.01	0.23	22.9	98
227	WSCF SOUTH	0.01	0.23	22.2	98
228	WSCF NORTH	0.01	0.24	23.9	98
235	218-W-5 SOUTH	0.01	0.27	26.7	98
236	241-T EAST	0.01	0.29	28.4	98
260	234-5Z EAST	0.01	0.23	22.6	98
267	SWOC-NE	0.01	0.24	24.0	98
268	SWOC-W	0.02	0.39	38.1	98
269	SWOC-SW	0.01	0.26	25.8	98

Table 5-8 1999 Thermoluminescent Dosimeter Results, 200 West Area (cont)

TLD ID	Site Description	2nd Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
202	218-W-2A	0.01	0.25	24.9	98
203	221-T EAST	0.01	0.33	32.1	98
204	241-TX EAST	0.02	0.38	37.4	98
205	216-Z-20	0.01	0.24	23.1	98
206	241-TX NORTH	0.01	0.31	30.6	98
207	241-U-WEST	0.01	0.28	26.9	98
208	241-U-EAST	0.01	0.35	33.9	98
209	221-U SOUTHEAST	0.01	0.24	23.7	98
210	241-SY	0.01	0.27	26.6	98
211	202-S SOUTHWEST	0.01	0.33	32.3	98
212	241-SY NORTH	0.01	0.34	33.3	98
213	241-S SOUTH	0.02	0.50	49.0	98
214	200W NORTHWEST	0.01	0.23	22.1	98
215	234-5Z NORTH	0.01	0.26	25.2	98
216	234-5Z SOUTH	0.01	0.24	23.7	98
226	218-W-5 WEST	0.01	0.23	22.6	98
227	WSCF SOUTH	0.01	0.24	23.5	98
228	WSCF NORTH	0.01	0.25	24.2	98
235	218-W-5 SOUTH	0.01	0.26	25.7	98
236	241-T EAST	0.01	0.25	24.8	98
260	234-5Z EAST	0.01	0.23	22.8	98
267	SWOC-NE	0.01	0.24	23.4	98
268	SWOC-W	0.02	0.40	39.6	98
269	SWOC-SW	0.01	0.28	27.4	98

Table 5-8 1999 Thermoluminescent Dosimeter Results, 200 West Area (cont)

TLD ID	Site Description	3rd Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
202	218-W-2A	0.01	0.27	23.8	90
203	221-T EAST	0.02	0.36	32.4	90
204	241-TX EAST	0.02	0.39	35.0	90
205	216-Z-20	0.01	0.23	20.8	90
206	241-TX NORTH	0.01	0.32	28.4	90
207	241-U-WEST	0.01	0.31	28.3	90
208	241-U-EAST	0.01	0.31	27.6	90
209	221-U SOUTHEAST	0.01	0.29	25.7	90
210	241-SY	0.01	0.29	26.1	90
211	202-S SOUTHWEST	0.01	0.36	32.3	90
212	241-SY NORTH	0.02	0.39	34.8	90
213	241-S SOUTH	0.02	0.51	46.2	90
214	200W NORTHWEST	0.01	0.24	21.5	90
215	234-5Z NORTH	0.01	0.27	24.7	90
216	234-5Z SOUTH	0.01	0.27	24.7	90
226	218-W-5 WEST	0.01	0.26	23.4	90
227	WSCF SOUTH	0.01	0.24	21.6	92
228	WSCF NORTH	0.01	0.25	22.6	92
235	218-W-5 SOUTH	0.01	0.31	28.0	90
236	241-T EAST	0.01	0.30	26.9	90
260	234-5Z EAST	0.01	0.25	22.5	90
267	SWOC-NE	0.01	0.26	23.6	90
268	SWOC-W	0.02	0.45	41.2	92
269	SWOC-SW	0.01	0.29	26.4	90

Table 5-8 1999 Thermoluminescent Dosimeter Results, 200 West Area (cont)

TLD ID	Site Description	4th Qtr '99			Days in Field
		mrem/hr	mrem/day	mrem/qtr	
202	218-W-2A	0.01	0.25	19.2	78
203	221-T EAST	0.01	0.35	27.2	78
204	241-TX EAST	0.02	0.37	29.1	78
205	216-Z-20	0.01	0.24	18.8	78
206	241-TX NORTH	0.01	0.31	24.3	78
207	241-U-WEST	0.01	0.33	25.7	78
208	241-U-EAST	0.01	0.29	22.9	78
209	221-U SOUTHEAST	0.01	0.23	17.8	78
210	241-SY	0.01	0.27	20.9	78
211	202-S SOUTHWEST	0.01	0.26	20.3	78
212	241-SY NORTH	0.02	0.37	29.2	78
213	241-S SOUTH	0.02	0.49	38.2	78
214	200W NORTHWEST	0.01	0.21	16.7	78
215	234-5Z NORTH	0.01	0.25	19.5	78
216	234-5Z SOUTH	0.01	0.23	18.1	78
226	218-W-5 WEST	0.01	0.23	17.9	78
227	WSCF SOUTH	0.01	0.23	17.5	77
228	WSCF NORTH	0.01	0.23	17.5	77
235	218-W-5 SOUTH	0.01	0.27	21.3	78
236	241-T EAST	0.01	0.26	20.3	78
260	234-5Z EAST	0.01	0.22	17.4	78
267	SWOC-NE	0.01	0.25	19.4	78
268	SWOC-W	0.02	0.46	34.6	76
269	SWOC-SW	0.01	0.28	21.6	78

Table 5-8 1999 Thermoluminescent Dosimeter Results, 200 West Area (cont)

TLD ID	Site Description	Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)		
		mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM
202	218-W-2A	0.01 $\pm$ 0.0003	0.25 $\pm$ 0.01	93 $\pm$ 3
203	221-T EAST	0.01 $\pm$ 0.001	0.34 $\pm$ 0.02	124 $\pm$ 6
204	241-TX EAST	0.02 $\pm$ 0.0003	0.38 $\pm$ 0.01	139 $\pm$ 3
205	216-Z-20	0.01 $\pm$ 0.0002	0.24 $\pm$ 0.004	86 $\pm$ 2
206	241-TX NORTH	0.01 $\pm$ 0.0001	0.31 $\pm$ 0.003	114 $\pm$ 1
207	241-U-WEST	0.01 $\pm$ 0.001	0.30 $\pm$ 0.03	108 $\pm$ 11
208	241-U-EAST	0.01 $\pm$ 0.001	0.31 $\pm$ 0.03	112 $\pm$ 10
209	221-U SOUTHEAST	0.01 $\pm$ 0.001	0.25 $\pm$ 0.02	91 $\pm$ 9
210	241-SY	0.01 $\pm$ 0.0004	0.27 $\pm$ 0.01	100 $\pm$ 4
211	202-S SOUTHWEST	0.01 $\pm$ 0.002	0.32 $\pm$ 0.04	116 $\pm$ 15
212	241-SY NORTH	0.01 $\pm$ 0.001	0.36 $\pm$ 0.03	130 $\pm$ 10
213	241-S SOUTH	0.02 $\pm$ 0.0004	0.50 $\pm$ 0.01	182 $\pm$ 4
214	200W NORTHWEST	0.01 $\pm$ 0.0004	0.23 $\pm$ 0.01	82 $\pm$ 4
215	234-5Z NORTH	0.01 $\pm$ 0.001	0.26 $\pm$ 0.01	93 $\pm$ 5
216	234-5Z SOUTH	0.01 $\pm$ 0.001	0.25 $\pm$ 0.02	90 $\pm$ 7
226	218-W-5 WEST	0.01 $\pm$ 0.001	0.24 $\pm$ 0.01	87 $\pm$ 5
227	WSCF SOUTH	0.01 $\pm$ 0.0003	0.23 $\pm$ 0.01	85 $\pm$ 2
228	WSCF NORTH	0.01 $\pm$ 0.0004	0.24 $\pm$ 0.01	88 $\pm$ 3
235	218-W-5 SOUTH	0.01 $\pm$ 0.001	0.28 $\pm$ 0.02	102 $\pm$ 8
236	241-T EAST	0.01 $\pm$ 0.001	0.28 $\pm$ 0.02	101 $\pm$ 8
260	234-5Z EAST	0.01 $\pm$ 0.0005	0.23 $\pm$ 0.01	85 $\pm$ 4
267	SWOC-NE	0.01 $\pm$ 0.0004	0.25 $\pm$ 0.01	91 $\pm$ 4
268	SWOC-W	0.02 $\pm$ 0.001	0.42 $\pm$ 0.03	155 $\pm$ 12
269	SWOC-SW	0.01 $\pm$ 0.001	0.28 $\pm$ 0.01	102 $\pm$ 5

Table 5-9 1999 Thermoluminescent Dosimeter Results, 212-R

3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
313	212-R RR	0.22	5.23	476	91

4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
313	212-R RR	0.23	5.42	428	79

Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)					
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM	
313	212-R RR	0.22 $\pm$ 0.01	5.3 $\pm$ 0.2	1943 $\pm$ 71	

**Table 5-10 1999 Thermoluminescent Dosimeter Results, 300 Area
Treated Effluent Disposal Facility**

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
401	NE PERIM TEDF (301)	0.01	0.24	23.1	95
402	SE PERIM TEDF (302)	0.01	0.26	25.1	95
403	SW PERIM TEDF (303)	0.01	0.24	23.2	95
404	NW PERIM TEDF (304)	0.01	0.22	21.1	95
405	TEDF IN-LINE 1(305)	0.01	0.22	20.8	95
406	TEDF IN-LINE 2(306)	0.01	0.23	22.3	95
2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
401	NE PERIM TEDF (301)	0.01	0.24	23.5	98
402	SE PERIM TEDF (302)	0.01	0.24	23.6	98
403	SW PERIM TEDF (303)	0.01	0.25	24.7	98
404	NW PERIM TEDF (304)	0.01	0.24	23.7	98
405	TEDF IN-LINE 1(305)	0.01	0.23	22.3	98
406	TEDF IN-LINE 2(306)	0.01	0.25	24.2	98
3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
401	NE PERIM TEDF (301)	0.01	0.24	23.5	97
402	SE PERIM TEDF (302)	0.01	0.24	23.3	97
403	SW PERIM TEDF (303)	0.01	0.25	24.4	97
404	NW PERIM TEDF (304)	0.01	0.23	22.6	97
405	TEDF IN-LINE 1(305)	0.01	0.22	21.7	97
406	TEDF IN-LINE 2(306)	0.01	0.23	22.7	97
4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
401	NE PERIM TEDF (301)	0.01	0.25	19.3	78
402	SE PERIM TEDF (302)	0.01	0.23	17.6	78
403	SW PERIM TEDF (303)	0.01	0.24	18.4	78
404	NW PERIM TEDF (304)	0.01	0.24	18.4	78
405	TEDF IN-LINE 1(305)	0.01	0.23	17.8	78
406	TEDF IN-LINE 2(306)	0.01	0.24	18.4	78
Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)					
TLD ID	Site Description	mrem/hr $\pm$ 2SEM		mrem/day $\pm$ 2SEM	
401	NE PERIM TEDF (301)	0.010 $\pm$ 0.0001		0.24 $\pm$ 0.003	
402	SE PERIM TEDF (302)	0.010 $\pm$ 0.001		0.24 $\pm$ 0.02	
403	SW PERIM TEDF (303)	0.010 $\pm$ 0.0003		0.25 $\pm$ 0.01	
404	NW PERIM TEDF (304)	0.010 $\pm$ 0.0003		0.23 $\pm$ 0.01	
405	TEDF IN-LINE 1(305)	0.009 $\pm$ 0.0002		0.22 $\pm$ 0.004	
406	TEDF IN-LINE 2(306)	0.010 $\pm$ 0.0003		0.24 $\pm$ 0.01	
				mrem/yr $\pm$ 2SEM	
				89 $\pm$ 1	
				89 $\pm$ 6	
				90 $\pm$ 3	
				85 $\pm$ 3	
				82 $\pm$ 2	
				87 $\pm$ 2	

Table 5-11 1999 Thermoluminescent Dosimeter Results, 300 Area

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	PROCESS TRENCH (N)	0.01	0.2	22.5	95
2	NORTH PROCESS POND	0.01	0.2	23.6	95
3	SOUTH PROCESS POND	0.01	0.2	22.5	95
4	316-3 TRENCH	0.02	0.6	55.0	95
5	PROCESS TRENCH (S)	0.01	0.2	21.8	95
6	303-K MIXED TSDF	0.01	0.3	27.2	95
7	340 GATE 40	0.02	0.4	36.4	95
8	3701-U GATE	0.01	0.2	23.0	95
2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	PROCESS TRENCH (N)	0.01	0.2	22.2	98
2	NORTH PROCESS POND	0.01	0.2	24.2	98
3	SOUTH PROCESS POND	0.01	0.2	23.0	98
4	316-3 TRENCH	0.02	0.6	58.4	98
5	PROCESS TRENCH (S)	0.01	0.2	24.0	98
6	303-K MIXED TSDF	0.01	0.3	27.3	98
7	340 GATE 40	0.02	0.4	37.9	98
8	3701-U GATE	0.01	0.3	25.3	98
3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	PROCESS TRENCH (N)	0.01	0.2	21.7	97
2	NORTH PROCESS POND	0.01	0.2	23.8	97
3	SOUTH PROCESS POND	0.01	0.2	22.5	97
4	316-3 TRENCH	0.03	0.6	60.7	97
5	PROCESS TRENCH (S)	0.01	0.2	22.9	97
6	303-K MIXED TSDF	0.01	0.3	28.6	97
7	340 GATE 40	0.02	0.4	38.4	97
8	3701-U GATE	0.01	0.2	24.4	98
4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	PROCESS TRENCH (N)	0.01	0.2	18.2	79
2	NORTH PROCESS POND	0.01	0.3	19.7	79
3	SOUTH PROCESS POND	0.01	0.2	19.3	79
4	316-3 TRENCH	0.02	0.6	44.2	78
5	PROCESS TRENCH (S)	0.01	0.2	18.8	79
6	303-K MIXED TSDF	0.01	0.3	21.4	78
7	340 GATE 40	0.02	0.4	28.6	78
8	3701-U GATE	0.01	0.2	18.6	77
Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)					
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM	
1	PROCESS TRENCH (N)	0.01 $\pm$ 0.0002	0.23 $\pm$ 0.01	84 $\pm$ 2	
2	NORTH PROCESS POND	0.01 $\pm$ 0.0001	0.25 $\pm$ 0.002	90 $\pm$ 1	
3	SOUTH PROCESS POND	0.01 $\pm$ 0.0002	0.24 $\pm$ 0.01	86 $\pm$ 2	
4	316-3 TRENCH	0.02 $\pm$ 0.001	0.59 $\pm$ 0.03	216 $\pm$ 9	
5	PROCESS TRENCH (S)	0.01 $\pm$ 0.0003	0.24 $\pm$ 0.01	86 $\pm$ 2	
6	303-K MIXED TSDF	0.01 $\pm$ 0.0004	0.28 $\pm$ 0.01	103 $\pm$ 3	
7	340 GATE 40	0.02 $\pm$ 0.001	0.38 $\pm$ 0.01	140 $\pm$ 4	
8	3701-U GATE	0.01 $\pm$ 0.0003	0.25 $\pm$ 0.01	90 $\pm$ 3	

Table 5-12 1999 Thermoluminescent Dosimeter Results, 400 Area

1st Qtr '99							
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field		
9	PROCESS PONDS	0.01	0.23	22.0	95		
10	4717 NORTH END	0.01	0.22	20.7	95		
11	CASK LAYDOWN PAD	0.01	0.25	23.8	95		
12	427 NORTH END	0.01	0.23	22.1	95		
13	FMEF MAIN GATE	0.01	0.22	21.1	95		
14	FFTF MAIN GATE	0.01	0.23	21.7	95		
15	4843 SODIUM TSDF	0.01	0.23	22.1	95		
2nd Qtr '99							
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field		
9	PROCESS PONDS	0.01	0.24	23.2	98		
10	4717 NORTH END	0.01	0.23	22.7	98		
11	CASK LAYDOWN PAD	0.01	0.26	25.8	98		
12	427 NORTH END	0.01	0.23	22.7	98		
13	FMEF MAIN GATE	0.01	0.24	23.4	98		
14	FFTF MAIN GATE	0.01	0.22	21.8	98		
15	4843 SODIUM TSDF	0.01	0.22	21.8	98		
3rd Qtr '99							
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field		
9	PROCESS PONDS	0.01	0.24	22.9	97		
10	4717 NORTH END	0.01	0.24	22.9	97		
11	CASK LAYDOWN PAD	0.01	0.25	24.6	97		
12	427 NORTH END	0.01	0.22	21.1	97		
13	FMEF MAIN GATE	0.01	0.23	22.2	97		
14	FFTF MAIN GATE	0.01	0.24	23.0	97		
15	4843 SODIUM TSDF	0.01	0.23	21.9	97		
4th Qtr '99							
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field		
9	PROCESS PONDS	0.01	0.24	18.7	78		
10	4717 NORTH END	0.01	0.22	17.5	79		
11	CASK LAYDOWN PAD	0.01	0.25	19.8	78		
12	427 NORTH END	0.01	0.23	17.8	78		
13	FMEF MAIN GATE	0.01	0.22	17.2	78		
14	FFTF MAIN GATE	0.01	0.23	18.0	78		
15	4843 SODIUM TSDF	0.01	0.23	17.7	78		
Annual Average ± 2 Standard Error of the Mean (2SEM)							
TLD ID	Site Description	mrem/hr ± 2SEM		mrem/day ± 2SEM		mrem/yr ± 2SEM	
9	PROCESS PONDS	0.010 ± 0.0001		0.24 ± 0.003		86 ± 1	
10	4717 NORTH END	0.009 ± 0.0004		0.23 ± 0.01		83 ± 3	
11	CASK LAYDOWN PAD	0.011 ± 0.0002		0.26 ± 0.01		93 ± 2	
12	427 NORTH END	0.009 ± 0.0003		0.23 ± 0.01		83 ± 3	
13	FMEF MAIN GATE	0.009 ± 0.0004		0.23 ± 0.01		83 ± 3	
14	FFTF MAIN GATE	0.010 ± 0.0003		0.23 ± 0.01		84 ± 2	
15	4843 SODIUM TSDF	0.009 ± 0.0002		0.23 ± 0.004		83 ± 2	

Table 5-13 1999 Thermoluminescent Dosimeter Results, Cold Vacuum Storage Facility

4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
12	CVS NORTH	0.01	0.20	16.6	81
13	CVS EAST	0.01	0.33	26.6	81
14	CVS SOUTH	0.01	0.20	16.5	81
15	CVS WEST	0.01	0.20	16.1	81

Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)				
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM
12	CVS NORTH	0.01 $\pm$ NA	0.20 $\pm$ NA	74 $\pm$ NA
13	CVS EAST	0.01 $\pm$ NA	0.33 $\pm$ NA	120 $\pm$ NA
14	CVS SOUTH	0.01 $\pm$ NA	0.20 $\pm$ NA	74 $\pm$ NA
15	CVS WEST	0.01 $\pm$ NA	0.20 $\pm$ NA	73 $\pm$ NA

NA - Not Applicable; Dosimeters installed during fourth quarter and 2SEM cannot be calculated

**Table 5-14 1999 Thermoluminescent Dosimeter Results, Environmental
Restoration Disposal Facility**

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	ERDF-1	0.01	0.23	22.2	98
2	ERDF-2	0.01	0.25	24.2	98
3	ERDF-3	0.01	0.25	24.3	98

2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	ERDF-1	0.01	0.24	23.9	98
2	ERDF-2	0.01	0.23	22.5	98
3	ERDF-3	0.01	0.24	23.5	98

3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	ERDF-1	NR	NR	NR	NR
2	ERDF-2	0.01	0.23	28.7	127
3	ERDF-3	0.01	0.23	29.4	127

NR - Not Returned to laboratory for analysis.

4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
1	ERDF-1	0.01	0.26	18.7	72
2	ERDF-2	0.01	0.30	21.5	72
3	ERDF-3	0.01	0.31	22.1	72

Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)					
TLD ID	Site Description	mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM	
1	ERDF-1	0.01 $\pm$ 0.001	0.24 $\pm$ 0.02	89 $\pm$ 7	
2	ERDF-2	0.01 $\pm$ 0.001	0.25 $\pm$ 0.03	91 $\pm$ 12	
3	ERDF-3	0.01 $\pm$ 0.001	0.26 $\pm$ 0.03	94 $\pm$ 12	

Table 5-15 1999 Thermoluminescent Dosimeter Results, Tank Waste Remediation System

1st Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
300	TWRS S 001	0.01	0.22	22.0	98
301	TWRS S 002	0.01	0.22	21.6	98
302	TWRS S 003	0.01	0.24	23.9	98
303	TWRS S 004	0.01	0.22	21.9	98
304	TWRS N 001	0.01	0.23	22.1	98
305	TWRS N 002	0.01	0.24	23.3	98
306	TWRS N 003	0.01	0.23	22.9	98
307	TWRS E 001	0.01	0.24	23.5	98
308	TWRS E 002	0.01	0.24	23.4	98
309	TWRS E 003	0.01	0.23	22.8	98
2nd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
300	TWRS S 001	0.01	0.25	24.5	98
301	TWRS S 002	0.01	0.25	24.0	98
302	TWRS S 003	0.01	0.25	24.4	98
303	TWRS S 004	0.01	0.26	25.0	98
304	TWRS N 001	0.01	0.25	24.7	98
305	TWRS N 002	0.01	0.25	24.7	98
306	TWRS N 003	0.01	0.25	24.4	98
307	TWRS E 001	0.01	0.26	25.5	98
308	TWRS E 002	0.01	0.26	25.7	98
309	TWRS E 003	0.01	0.23	22.7	98
3rd Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
300	TWRS S 001	0.01	0.25	22.7	91
301	TWRS S 002	0.01	0.25	22.7	91
302	TWRS S 003	0.01	0.25	23.1	91
303	TWRS S 004	0.01	0.25	22.7	91
304	TWRS N 001	0.01	0.26	23.5	91
305	TWRS N 002	0.01	0.24	22.1	91
306	TWRS N 003	0.01	0.25	22.9	91
307	TWRS E 001	0.01	0.25	22.7	91
308	TWRS E 002	0.01	0.26	23.3	91
309	TWRS E 003	0.01	0.25	22.9	91
4th Qtr '99					
TLD ID	Site Description	mrem/hr	mrem/day	mrem/qtr	Days in Field
300	TWRS S 001	0.01	0.23	18.5	79
301	TWRS S 002	0.01	0.23	18.3	79
302	TWRS S 003	0.01	0.23	18.4	79
303	TWRS S 004	0.01	0.22	17.6	79
304	TWRS N 001	0.01	0.23	18.2	79
305	TWRS N 002	0.01	0.24	19.0	79
306	TWRS N 003	0.01	0.24	19.0	79
307	TWRS E 001	0.01	0.23	18.2	79
308	TWRS E 002	0.01	0.23	18.0	79
309	TWRS E 003	0.01	0.23	17.8	79

**Table 5-15 1999 Thermoluminescent Dosimeter Results, Tank
Waste Remediation System (cont)**

TLD ID	Site Description	Annual Average $\pm$ 2 Standard Error of the Mean (2SEM)		
		mrem/hr $\pm$ 2SEM	mrem/day $\pm$ 2SEM	mrem/yr $\pm$ 2SEM
300	TWRS S 001	0.01 $\pm$ 0.001	0.24 $\pm$ 0.01	87 $\pm$ 5
301	TWRS S 002	0.01 $\pm$ 0.001	0.24 $\pm$ 0.01	86 $\pm$ 5
302	TWRS S 003	0.01 $\pm$ 0.0004	0.24 $\pm$ 0.01	89 $\pm$ 3
303	TWRS S 004	0.01 $\pm$ 0.001	0.24 $\pm$ 0.02	87 $\pm$ 6
304	TWRS N 001	0.01 $\pm$ 0.001	0.24 $\pm$ 0.02	88 $\pm$ 6
305	TWRS N 002	0.01 $\pm$ 0.0003	0.24 $\pm$ 0.01	89 $\pm$ 2
306	TWRS N 003	0.01 $\pm$ 0.0003	0.24 $\pm$ 0.01	89 $\pm$ 3
307	TWRS E 001	0.01 $\pm$ 0.001	0.24 $\pm$ 0.01	89 $\pm$ 5
308	TWRS E 002	0.01 $\pm$ 0.001	0.25 $\pm$ 0.02	90 $\pm$ 6
309	TWRS E 003	0.01 $\pm$ 0.0005	0.24 $\pm$ 0.01	86 $\pm$ 4

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6.0 100-N RIVERBANK SPRINGS MONITORING

In 1999, water samples were taken only at the riverbank springs in the 100-N Area. All radiological analyses were performed onsite at the WSCF. Analyses for riverbank springs water included tritium, strontium-90, and gamma-emitting radionuclides. Sampling locations are illustrated in Figure 6-1.

Groundwater springs and/or shoreline seepage wells along the 100-N Area shoreline are sampled annually to verify that the reported radionuclide releases to the Columbia River are conservative (i.e., not underreported). In the past, radioactive effluent streams sent to the 1301-N and 1325-N Liquid Waste Disposal Facilities in the 100-N Area contributed to the release of radionuclides to the Columbia River through their migration with the groundwater. Radionuclides from these facilities enter the Columbia River along the riverbank region sometimes called N Springs.

The amount of radionuclides entering the river at these springs is calculated based on analyses of samples routinely collected from monitoring well 199-N-46, located near the shoreline. To calculate these releases, conservatively high radionuclide activities in samples collected from well 199-N-46 are multiplied by the estimated groundwater discharged into the river. The estimated groundwater flow rate used to calculate 1999 releases from the springs was 43 L/min (11 gal/min). The results of the annual riverbank spring samples can then be compared to the activities measured in well 199-N-46 to ensure that activities in the well reflect the highest activities of radionuclides in the groundwater. Additional discussion of the release calculations may be found in HNF-EP-0527-9.

In October 1999, 10 samples were collected. At the time of sample collection, 3 of the 13 shoreline wells were dry, and no samples were collected at these locations. The shoreline seepage well samples were collected using a bailer, carefully lowered into each well water column to avoid sediment suspension, and a 4-L (1-gal) sample was obtained. The sampling methods are discussed in more detail in WMTS-OEM-001.

In 1999, the levels of strontium-90 detected in samples from riverbank springs were highest in N Springs well Y303, which is nearest well 199-N-46. Strontium-90 concentrations exceeded the DOE derived concentration guide value only at well Y303. The highest tritium level was measured approximately 400 ft downstream at well Y307. Tritium concentrations at all sampling locations were well below the derived concentration guide value. All gamma-emitting radionuclide concentrations were below analytical detection limits in 1999. The 1999 data results from riverbank springs sampling are summarized in Table 6-1. Historical tritium and strontium-90 sampling results are provided in Tables 6-2 and 6-3.

The two surface-water disposal units in the 200-East Area that historically received potentially radiologically contaminated effluents, the 200-East Area Powerhouse Ditch and the 216-B-3C Expansion Pond, were virtually unutilized in 1999. There was a single-batch discharge to the Powerhouse Ditch in February 1999, and a liquid grab sample was collected.

This sample was screened for gross alpha/beta radioactivity and no unusual levels were observed. This sample was ultimately discarded. No aquatic vegetation or sediment samples were collected in 1999.

Figure 6-1 100-N Area Shoreline Seepage Well Locations

Table 6-1 1999 Radiological Results for N-Springs Water Samples
(pCi/L $\pm$ overall analytical error)

Location	Isotope	Result $\pm$ Error
Y301	^3H	9.70E+01 $\pm$ 76%
	^{60}Co	-2.40E+00 $\pm$ 158%
	^{65}Zn	3.80E+00 $\pm$ 239%
	^{90}Sr	7.10E+00 $\pm$ 20%
	^{103}Ru	-1.80E-01 $\pm$ 1000%
	^{106}Ru	-1.80E+01 $\pm$ 211%
	^{113}Sn	-8.70E-01 $\pm$ 621%
	^{125}Sb	-3.50E+00 $\pm$ 343%
	^{134}Cs	2.30E+00 $\pm$ 178%
	^{137}Cs	-1.40E+00 $\pm$ 271%
	^{144}Ce	-1.80E-01 $\pm$ 1000%
	^{152}Eu	2.70E+00 $\pm$ 481%
	^{154}Eu	-5.50E+00 $\pm$ 218%
	^{155}Eu	-1.50E+01 $\pm$ 100%

Location	Isotope	Result $\pm$ Error
Y302	^3H	1.00E+02 $\pm$ 70%
	^{60}Co	-1.60E+00 $\pm$ 313%
	^{65}Zn	4.40E-01 $\pm$ 1000%
	^{90}Sr	3.60E+00 $\pm$ 25%
	^{103}Ru	-7.70E+00 $\pm$ 100%
	^{106}Ru	2.20E+01 $\pm$ 200%
	^{113}Sn	5.90E-01 $\pm$ 949%
	^{125}Sb	-1.10E+01 $\pm$ 164%
	^{134}Cs	-2.60E+00 $\pm$ 188%
	^{137}Cs	<8.30E+00 $\pm$ 64%
	^{144}Ce	-3.90E+00 $\pm$ 692%
	^{152}Eu	-2.60E+00 $\pm$ 500%
	^{154}Eu	1.90E+00 $\pm$ 737%
	^{155}Eu	6.80E-01 $\pm$ 1000%

Location	Isotope	Result $\pm$ Error
Y302	^3H	1.80E+00 $\pm$ 189%
(Duplicate)	^{60}Co	5.10E-01 $\pm$ 745%
	^{65}Zn	-1.00E+00 $\pm$ 870%
	^{90}Sr	4.90E+01 $\pm$ 15%
	^{103}Ru	2.20E+00 $\pm$ 200%
	^{106}Ru	-9.90E+00 $\pm$ 404%
	^{113}Sn	3.00E+00 $\pm$ 190%
	^{125}Sb	3.40E+00 $\pm$ 353%
	^{134}Cs	2.90E+00 $\pm$ 141%
	^{137}Cs	1.60E+00 $\pm$ 269%
	^{144}Ce	-3.10E+01 $\pm$ 100%
	^{152}Eu	-3.90E+00 $\pm$ 333%
	^{154}Eu	5.10E+00 $\pm$ 196%
	^{155}Eu	-6.50E+00 $\pm$ 215%

Location	Isotope	Result $\pm$ Error
Y303	^3H	1.90E+02 $\pm$ 51%
	^{60}Co	-2.80E+00 $\pm$ 150%
	^{65}Zn	2.60E+00 $\pm$ 319%
	^{90}Sr	1.30E+03 $\pm$ 15%
	^{103}Ru	-2.60E+00 $\pm$ 162%
	^{106}Ru	-3.30E+00 $\pm$ 1000%
	^{113}Sn	3.30E+00 $\pm$ 191%
	^{125}Sb	-3.80E+00 $\pm$ 316%
	^{134}Cs	-1.90E+00 $\pm$ 221%
	^{137}Cs	7.60E-01 $\pm$ 553%
	^{144}Ce	-1.90E+00 $\pm$ 1000%
	^{152}Eu	-4.00E+00 $\pm$ 300%
	^{154}Eu	-2.20E+00 $\pm$ 500%
	^{155}Eu	3.50E+00 $\pm$ 371%

Location	Isotope	Result $\pm$ Error
Y305	^3H	4.70E+01 $\pm$ 100%
	^{60}Co	7.00E-01 $\pm$ 671%
	^{65}Zn	2.60E+00 $\pm$ 385%
	^{90}Sr	3.00E+01 $\pm$ 15%
	^{103}Ru	-1.60E+00 $\pm$ 313%
	^{106}Ru	-1.90E+01 $\pm$ 242%
	^{113}Sn	2.00E-01 $\pm$ 1000%
	^{125}Sb	-1.40E+01 $\pm$ 121%
	^{134}Cs	-1.40E+00 $\pm$ 371%
	^{137}Cs	1.10E+00 $\pm$ 445%
	^{144}Ce	-1.60E+01 $\pm$ 250%
	^{152}Eu	-7.60E+00 $\pm$ 184%
	^{154}Eu	4.80E+00 $\pm$ 271%
	^{155}Eu	1.40E+01 $\pm$ 121%

Location	Isotope	Result $\pm$ Error
Y306	^3H	3.60E+00 $\pm$ 211%
	^{60}Co	5.00E+00 $\pm$ 110%
	^{65}Zn	8.20E+00 $\pm$ 244%
	^{90}Sr	8.10E+00 $\pm$ 20%
	^{103}Ru	-1.80E+00 $\pm$ 300%
	^{106}Ru	-3.10E+01 $\pm$ 171%
	^{113}Sn	1.10E+00 $\pm$ 636%
	^{125}Sb	2.10E+00 $\pm$ 714%
	^{134}Cs	-2.50E+00 $\pm$ 260%
	^{137}Cs	-8.20E-01 $\pm$ 720%
	^{144}Ce	2.90E+01 $\pm$ 131%
	^{152}Eu	8.00E+00 $\pm$ 188%
	^{154}Eu	7.80E+00 $\pm$ 192%
	^{155}Eu	5.60E+00 $\pm$ 339%

Table 6-1 1999 Radiological Results for N-Springs Water Samples
(pCi/L $\pm$ overall analytical error) (cont)

Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
Y307	^3H	2.70E+02 $\pm$ 41%	Y308	^3H	1.10E+02 $\pm$ 80%
	^{60}Co	1.60E+00 $\pm$ 319%		^{60}Co	-1.60E+00 $\pm$ 288%
	^{65}Zn	-1.50E-01 $\pm$ 1000%		^{65}Zn	-5.60E+00 $\pm$ 196%
	^{90}Sr	1.90E+00 $\pm$ 40%		^{90}Sr	2.50E+00 $\pm$ 30%
	^{103}Ru	-5.20E+00 $\pm$ 140%		^{103}Ru	9.20E-01 $\pm$ 522%
	^{106}Ru	2.80E+00 $\pm$ 1000%		^{106}Ru	6.50E+00 $\pm$ 723%
	^{113}Sn	3.60E+00 $\pm$ 161%		^{113}Sn	-1.80E+00 $\pm$ 328%
	^{125}Sb	-1.00E+01 $\pm$ 160%		^{125}Sb	-6.30E+00 $\pm$ 206%
	^{134}Cs	2.60E+00 $\pm$ 188%		^{134}Cs	-1.70E+00 $\pm$ 288%
	^{137}Cs	-1.80E+00 $\pm$ 322%		^{137}Cs	4.50E-01 $\pm$ 1000%
	^{144}Ce	-2.60E+01 $\pm$ 100%		^{144}Ce	1.60E+01 $\pm$ 188%
	^{152}Eu	6.00E+00 $\pm$ 233%		^{152}Eu	8.20E+00 $\pm$ 183%
	^{154}Eu	-1.00E+01 $\pm$ 130%		^{154}Eu	1.90E+00 $\pm$ 684%
	^{156}Eu	-8.80E-01 $\pm$ 1000%		^{156}Eu	1.00E+01 $\pm$ 160%
Location	Isotope	Result $\pm$ Error	Location	Isotope	Result $\pm$ Error
Y310	^3H	1.30E+02 $\pm$ 65%	Y311	^3H	1.80E+02 $\pm$ 55%
	^{60}Co	2.40E-01 $\pm$ 1000%		^{60}Co	3.60E+00 $\pm$ 131%
	^{65}Zn	-5.60E+00 $\pm$ 179%		^{65}Zn	-2.60E+00 $\pm$ 423%
	^{90}Sr	4.00E+00 $\pm$ 22%		^{90}Sr	4.30E+01 $\pm$ 15%
	^{103}Ru	-2.50E+00 $\pm$ 200%		^{103}Ru	5.80E-01 $\pm$ 793%
	^{106}Ru	-1.80E+01 $\pm$ 250%		^{106}Ru	2.00E+01 $\pm$ 250%
	^{113}Sn	1.70E+00 $\pm$ 359%		^{113}Sn	-2.10E+00 $\pm$ 300%
	^{125}Sb	-5.20E+00 $\pm$ 269%		^{125}Sb	-3.10E-01 $\pm$ 1000%
	^{134}Cs	2.80E+00 $\pm$ 200%		^{134}Cs	3.80E+00 $\pm$ 129%
	^{137}Cs	4.40E+00 $\pm$ 130%		^{137}Cs	-5.50E+00 $\pm$ 100%
	^{144}Ce	-1.50E+01 $\pm$ 240%		^{144}Ce	-2.00E+01 $\pm$ 150%
	^{152}Eu	-6.40E+00 $\pm$ 234%		^{152}Eu	2.00E+00 $\pm$ 700%
	^{154}Eu	1.40E+00 $\pm$ 929%		^{154}Eu	1.10E+01 $\pm$ 118%
	^{156}Eu	-4.90E+00 $\pm$ 388%		^{156}Eu	1.40E+00 $\pm$ 1000%
Location	Isotope	Result $\pm$ Error	1999 N-Springs Averages		
Y312	^3H	1.50E+02 $\pm$ 65%	Isotope	Average $\pm$ 2SEM ^(a)	
	^{60}Co	-1.70E+00 $\pm$ 200%	^3H	1.2E+02 $\pm$ 4.9E+01	
	^{65}Zn	5.40E+00 $\pm$ 159%	^{60}Co	1.4E-01 $\pm$ 1.5E+00	
	^{90}Sr	9.20E+00 $\pm$ 16%	^{65}Zn	7.4E-01 $\pm$ 2.6E+00	
	^{103}Ru	<9.10E+00 $\pm$ 66%	^{90}Sr	1.3E+02 $\pm$ 2.3E+02	
	^{106}Ru	-4.50E-01 $\pm$ 1000%	^{103}Ru	-1.8E+00 $\pm$ 2.6E+00	
	^{113}Sn	-1.50E+00 $\pm$ 367%	^{106}Ru	-4.4E+00 $\pm$ 1.0E+01	
	^{125}Sb	-2.80E+00 $\pm$ 429%	^{113}Sn	6.6E-01 $\pm$ 1.3E+00	
	^{134}Cs	-5.00E-01 $\pm$ 780%	^{125}Sb	-4.7E+00 $\pm$ 3.3E+00	
	^{137}Cs	-4.90E-01 $\pm$ 755%	^{134}Cs	3.5E-01 $\pm$ 1.5E+00	
	^{144}Ce	1.80E+01 $\pm$ 161%	^{137}Cs	-1.7E-01 $\pm$ 2.1E+00	
	^{152}Eu	1.70E-01 $\pm$ 1000%	^{144}Ce	-4.6E+00 $\pm$ 1.2E+01	
	^{154}Eu	-5.10E+00 $\pm$ 190%	^{152}Eu	2.3E-01 $\pm$ 3.4E+00	
	^{156}Eu	3.20E+00 $\pm$ 406%	^{154}Eu	1.0E+00 $\pm$ 3.8E+00	
			^{156}Eu	1.0E+00 $\pm$ 4.8E+00	

a - 2 Standard Error of the Mean

Table 6-2 Historical N-Springs Shoreline Tritium Concentration
(pCi/L $\pm$ overall analytical error)

Year	Y301	Y302	monitoring well	Y303	Y304	Y305	Y306
1987	6.8 E+04	7.6 E+04	9.5 E+04	9.2 E+04	9.4 E+04	8.8 E+04	7.9 E+04
1988	5.7 E+03	2.8 E+04	7.5 E+04	6.9 E+04	7.4 E+04	NS	NS
1989	2.5 E+04	2.8 E+04	3.9 E+04	3.6 E+04	5.0 E+04	NS	6.8 E+04
1990	2.9 E+04	3.2 E+04	3.8 E+04	3.6 E+04	NS	NS	3.4 E+03
1991	2.2 E+02	8.4 E+01	3.7 E+04	2.6 E+03	3.4 E+04	NS	4.0 E+02
1992	7.2 E+02	NS	5.0 E+04	9.5 E-01	NS	NS	1.5 E+02
1993	2.8 E+02	1.3 E+02	2.7 E+04 $\pm$ 7.90%	1.4 E+02	5.6 E+02	1.0 E+02	1.8 E+02
1994	NS	<4.0E+01 $\pm$ 471%	2.6 E+04 $\pm$ 8.10%	4.0 E+01	NS	NS	<1.2 E+02 $\pm$ 163%
1995	NS	NS	5.2 E+03	<-1.2 E+01 $\pm$ >999%	NS	NS	<-4.4 E+01 $\pm$ 331%
1996	2.5 E+02	8.5 E+02 $\pm$ 29%	2.0 E+04 $\pm$ 8.20%	1.6 E+04 $\pm$ 8.00%	4.2 E+03 $\pm$ 12%	1.6 E+02 $\pm$ 135%	2.2 E+02 $\pm$ 95%
1997	-4.3E+01 $\pm$ 130%	<3.6E+01 $\pm$ 90%	1.6 E+04 $\pm$ 8.00%	3.0 E+03 $\pm$ 20%	-6.3E+02 $\pm$ 180%	-5.7E+01 $\pm$ 160%	-1.1E+02 $\pm$ 490%
1998	NS	4.6E+02 $\pm$ 45%	1.6 E+04 $\pm$ 32%	1.4E+02 $\pm$ 26%	NS	3.7E+02 $\pm$ 70%	4.3E+02 $\pm$ 51%
1999	9.7E+01 $\pm$ 76%	1.0E+02 $\pm$ 70%	1.3E+02 $\pm$ 61%	1.9E+02 $\pm$ 51%	NS	4.7E+01 $\pm$ 100%	3.6E+00 $\pm$ 211%

Year	Y307	Y308	Y309	Y310	Y311	Y312	Y313
1987	7.3 E+04	4.6 E+04	7.5 E+04	4.0 E+03	5.8 E+04	2.1 E+04	1.3 E+03
1988	1.1 E+04	3.0 E+04	1.0 E+04	NS	2.9 E+04	1.9 E+04	3.0 E+03
1989	NS	7.7 E+04	7.0 E+04	3.5 E+04	4.2 E+04	NS	NS
1990	NS	1.4 E+04	3.5 E+03	9.7 E+03	3.8 E+04	2.0 E+04	NS
1991	8.1 E+02	2.1 E+03	6.5 E+03	7.9 E+02	7.1 E+02	2.4 E+03	9.3 E+00
1992	NS	NS	3.0 E+02	4.3 E+02	6.5 E+02	1.7 E+02	NS
1993	NS	NS	NS	NS	NS	NS	NS
1994	<8.5 E+01 $\pm$ 225%	<1.3 E+02 $\pm$ 154%	8.4 E+01 $\pm$ 230%	4.0 E+02 $\pm$ 52%	4.5 E+02 $\pm$ 46%	2.9 E+02 $\pm$ 70%	NS
1995	<-2.1 E+00 $\pm$ >999%	<-2.3 E+01 $\pm$ 630%	<-3.1 E+01 $\pm$ 462%	<-1.2 E+01 $\pm$ >999%	3.2 E+02 $\pm$ 50%	5.0 E+02 $\pm$ 35%	NS
1996	1.9 E+02 $\pm$ 113%	2.4 E+02 $\pm$ 86%	NS	NS	2.2 E+02 $\pm$ 95%	NS	NS
1997	-1.4E+02 $\pm$ >999%	-1.2E+02 $\pm$ 680%	-6.4E+01 $\pm$ 160%	-1.1E+02 $\pm$ 490%	<2.6E+01 $\pm$ 80%	NS	NS
1998	3.5E+02 $\pm$ 75%	NS	3.5E+02 $\pm$ 76%	3.0E+02 $\pm$ 70%	5.6E+02 $\pm$ 45%	6.2E+02 $\pm$ 40%	5.2E+02 $\pm$ 50%
1999	2.7E+02 $\pm$ 41%	1.1E+02 $\pm$ 80%	NS	1.3E+02 $\pm$ 65%	1.8E+02 $\pm$ 55%	1.5E+02 $\pm$ 65%	NS

NS - Not Sampled

Table 6-3 Historical N-Springs Shoreline Strontium-90 Concentration
(pCi/L $\pm$ overall analytical error)

Year	Y301	Y302	Effluent monitoring well	Y303	Y304	Y305	Y306
1987	1.7 E+03	2.7 E+03	6.1 E+03	8.3 E+03	4.1 E+03	9.5 E+02	7.2 E+02
1988	8.7 E+02	3.0 E+03	7.9 E+03	9.1 E+03	3.5 E+03	NS	NS
1989	9.8 E+02	2.1 E+03	6.5 E+03	5.4 E+03	3.8 E+03	NS	8.9 E+02
1990	2.4 E+03	2.9 E+03	4.9 E+03	7.1 E+03	NS	NS	1.5 E+02
1991	1.6 E+01	2.4 E+01	6.9 E+03	1.4 E+03	3.2 E+03	NS	8.6 E+01
1992	NS	NS	6.3 E+03	1.5 E+02	NS	NS	9.6 E+00
1993	1.2 E+01	8.3 E+01	7.4 E+03 $\pm$ 18%	1.2 E+02	4.1 E+03	4.1 E+01	1.3 E+01
1994	NS	1.1E+02 $\pm$ 24%	6.6 E+03 $\pm$ 21%	1.2 E+02	NS	NS	6.4 E+00 $\pm$ 26%
1995	NS	NS	5.7 E+03 $\pm$ 25%	3.0 E+02 $\pm$ 17%	NS	NS	7.0 E+00 $\pm$ 20%
1996	5.8 E+01	2.6E+02 $\pm$ 25%	1.4 E+04 $\pm$ 29%	5.8 E+03 $\pm$ 28%	9.5 E+02 $\pm$ 27%	3.7 E+01 $\pm$ 27%	1.6 E+01 $\pm$ 26%
1997	3.1 E+01 $\pm$ 15%	2.0E+02 $\pm$ 14%	1.1 E+04 $\pm$ 35%	3.2 E+03 $\pm$ 12%	1.7 E+02 $\pm$ 13%	2.6 E+01 $\pm$ 18%	3.1 E+00 $\pm$ 50%
1998	NS	1.1E+02 $\pm$ 12%	1.4E+04 $\pm$ 15%	1.9E+03 $\pm$ 12%	NS	1.7E+01 $\pm$ 15%	7.7E+00 $\pm$ 20%
1999	7.1E+00 $\pm$ 20%	4.9E+01 $\pm$ 15%	3.2E+03 $\pm$ 15%	1.3E+03 $\pm$ 15%	NS	3.0E+01 $\pm$ 15%	8.1E+00 $\pm$ 20%

Year	Y307	Y308	Y309	Y310	Y311	Y312	Y313
1987	1.3 E+01	4.2 E+01	2.4 E+02	5.7 E+01	6.6 E+02	5.8 E+01	5.0 E+01
1988	1.5 E+01	3.2 E+01	4.1 E+01	NS	3.4 E+02	4.0 E+01	5.8 E+01
1989	NS	7.8 E+01	2.9 E+02	1.6 E+02	9.5 E+02	NS	NS
1990	NS	9.0 E+01	4.4 E+01	3.1 E+01	5.8 E+02	5.4 E+01	NS
1991	1.4 E+01	2.8 E+01	1.0 E+02	1.5 E+01	4.0 E+02	8.9 E+00	8.1 E+00
1992	NS	NS	8.1 E+00	6.7 E+00	1.1 E+02	7.1 E+00	NS
1993	NS	NS	NS	NS	NS	NS	NS
1994	3.8 E+00 $\pm$ 23%	1.2 E+01 $\pm$ 21%	3.4 E+00 $\pm$ 27%	3.8 E+00 $\pm$ 27%	5.1 E+01 $\pm$ 22%	1.8 E+01 $\pm$ 24%	NS
1995	3.8 E+00 $\pm$ 21%	1.4 E+01 $\pm$ 19%	5.5 E+00 $\pm$ 21%	7.0 E+00 $\pm$ 20%	7.1 E+01 $\pm$ 19%	1.9 E+01 $\pm$ 19%	NS
1996	6.5 E+00 $\pm$ 28%	2.2 E+01 $\pm$ 26%	NS	NS	1.7 E+02 $\pm$ 29%	NS	NS
1997	<3.6E-01 $\pm$ 540%	1.1 E+01 $\pm$ 20%	5.6 E+00 $\pm$ 30%	<7.6E-01 $\pm$ 260%	1.5 E+02 $\pm$ 13%	NS	NS
1998	1.5E+01 $\pm$ 15%	NS	5.1E+00 $\pm$ 20%	2.9E+00 $\pm$ 30%	1.1E+02 $\pm$ 13%	1.8 E+01 $\pm$ 13%	3.6E+00 $\pm$ 30%
1999	1.9E+00 $\pm$ 40%	2.5E+00 $\pm$ 30%	NS	4.0E+00 $\pm$ 22%	4.3E+01 $\pm$ 15%	9.2E+00 $\pm$ 16%	NS

NS - Not Sampled

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7.0 RADIOLOGICAL SURVEYS

In 1999, there were approximately 3,628 ha (8,964 acres) of posted outdoor contamination areas and 594 ha (1,468 acres) of posted underground radioactive materials areas at the Hanford Site. Survey locations are illustrated in Figures 7-1 through 7-10. These areas were typically associated with cribs, ponds, trenches, burial grounds, tank farms, and covered ditches.

The posted contamination areas vary in number and size between years because of an ongoing effort to clean, stabilize, and remediate areas of known contamination. During this time, new areas of contamination are also being identified. Approximately 4.3 ha (10.6 acres) were reclassified from contamination/soil contamination areas to underground radioactive materials areas. Newly identified areas may have resulted from contaminant migration or an increased effort to investigate outdoor areas for radiological contamination. Vehicles equipped with radiation detection devices and an ultrasonic ranging and data system have identified areas of contamination that were previously undetected.

The external dose rate at 80% of the identified outdoor contamination areas was estimated at less than 1 mrem/h, although direct dose rate readings from isolated radioactive specks (a diameter less than 0.6 cm [0.25 in.]) could have been considerably higher. Contamination levels of this magnitude did not significantly add to dose rates to the public or Hanford Site workers in 1999.

Figure 7-1 1999 Radiological Survey Locations, 100-B, C Area

Figure 7-2 1999 Radiological Survey Locations, 100-D, DR Area

Figure 7-3 1999 Radiological Survey Locations, 100-F Area

Contamination Area
Underground Radioactive Material

*Spoil pile containing waste
from remediated 116-H-6*

116-H-6 (remediated)
116-H-5
116-H-7
116-H-1

Columbia River

118-H-2
118-H-4
105-H
118-H-5
118-H-3
118-H-1

200 0 200 400 Meters

WMNW/EM/11-001EMPHRAD

Figure 7-4 1999 Radiological Survey Locations, 100-H Area

Figure 7-5 1999 Radiological Survey Locations, 100-K Area

Figure 7-6 1999 Radiological Survey Locations, 100-N Area

Figure 7-7 1999 Radiological Survey Locations, 200 East Area

Figure 7-8 1999 Radiological Survey Locations, 200 West Area

WMNWEM11-001EMP2WRAD

Figure 7-9 1999 Radiological Survey Locations, 300 Area

Figure 7-10 1999 Radiological Survey Locations, 600 Area

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8.0 INVESTIGATIVE SAMPLING

Examples of investigative samples collected in 1999 included: soil, vegetation, animals, insects, and animal feces. Investigative samples were collected where known or suspected radioactive contamination was present, or to verify radiological conditions at project sites. In 1999, 17 samples were analyzed for radionuclides at the 222-S Laboratory. Analytical results are provided in Tables 8-1 through 8-3. Another 149 contaminated environmental samples were reported and disposed without isotopic analyses (although field instrument readings were recorded) during clean-up operations. These results are provided in Table 8-4. Only radionuclide concentrations above analytical detection limits are provided in this report.

Soil

In 1999, there were 13 instances of radiological contamination in which soil was identified as the carrier of contamination, and 29 instances in which unidentified specks were responsible for contamination. At least two instances of soil contamination were suspected to have resulted from contaminated animal urine. Often, specks observed under high magnification are found to be small pieces of decomposed vegetation, most often tumbleweeds. External radioactivity levels ranged from slightly above background (approximately 8,400 disintegrations per minute [dpm]/100 cm²) to greater than 1 million dpm/100 cm². One sample was submitted for radioisotopic analysis. The number of contamination incidents, the range of radiation dose levels, and radionuclide concentrations observed in 1999 were generally within historical ranges.

Vegetation

In 1999, there were 85 instances of radiological contamination in which vegetation was identified as the carrier of contamination. Three samples were submitted to the laboratory for radioisotopic analysis. One of the samples analyzed showed field readings in excess of one million dpm. The radioactivity levels and range of radionuclide concentrations were all within historical ranges.

The number of contaminated vegetation incidents in 1998 (51) was the highest number of annual incidents to date. The substantially higher number of incidents identified in 1999 (85) can be attributed largely to two factors:

218-E-12B Burial Ground – Safety issues resulting from subsidence in the burial ground prevented application of herbicides to control tumbleweed growth in 1998. Contaminated tumbleweeds growing in the burial ground broke free during the winter and early spring of 1999. During high winds in 1999, the weeds blew from the posted burial ground into unposted areas where they were identified as radiologically contaminated.

Integrated Biological Control Program (IBCP) – As a new program in 1999, one of the primary missions of the IBCP is to aggressively seek and clean up environmental contamination. Many incidents of contamination were found in areas suspected to have historic contamination, but not subject to routine surveys. In some cases, this contamination resulted from tumbleweeds or other sources that were several years old, and does not indicate loss of contamination control from activities in 1999.

Animals

Animals were collected either as part of an integrated pest management program or as a result of finding radiologically contaminated wildlife-related material (e.g., feces, nests, etc.). Animals were collected directly from or near facilities in an effort to monitor and track effectiveness of preventive measures designed to deter animal intrusion.

In 1999, 16 instances of contaminated animals or animal related contamination were identified; 9 were submitted to the laboratory for analysis. The highest radionuclide concentrations in 1999 were observed in mouse feces collected in the 200-East Area. The numbers of animals found to be contaminated with radioactivity, the radioactivity levels, and the range of radionuclide concentrations were within historical ranges.

Special Characterization Sampling

Special characterization projects conducted, or completed, in 1999 to verify the radiological, and in some cases, potential hazardous chemical status of site operations included the projects listed below:

- A preoperational environmental survey of the Project W-314 Pipeline to be constructed in the 200-East Area was completed. This effort was in support of the Tank Waste Remediation System's (TWRS) plan to provide needed upgrades for waste transfer control and instrumentation for the existing tank farm facilities. A final report (HNF-4401) was prepared and issued.
- A preoperational environmental survey is currently being conducted in support of the Spent Nuclear Fuels Project Facilities. Environmental samples are being collected in the proximity of the Canister Storage Building (CSB) and the Interim Storage Area (ISA) in the 200-East Area and near the Cold Vacuum Drying Facility (CVDF) in the 100-K Area. A Sampling and Analysis Plan (HNF-SD-SNF-AP-003) was prepared and issued.

Table 8-1 Investigative Sample Results – Soil, 1999 (pCi/g)

Sample #	Location	Sample Matrix	⁶⁰ Co	⁹⁰ Sr	¹³⁷ Cs	¹⁵⁴ Eu	total U	^{239,240} Pu	Field Reading ^(a)
6854	216-B-3-A Pond	Soil (possible urine)	6.1E+03	2.2E+03	2.9E+06	9.3E+04	(b)	ND ^(c)	>1,000,000dpm/100cm ²
6866	241 SX	Soil Speck	ND	1.3E+01	4.7E-01	ND	1.3E+05	ND	500,000dpm/100cm ²

a - Field monitoring results are expressed as disintegrations per minute per probe area (dpm) when a Geiger-Müller detector is used and the geometry of the source is not considered; or as millirad per hour (mrads/h) when an ion chamber is used.

To obtain field instrument readings expressed as dpm/100cm², the measured background radioactivity is subtracted from the Geiger-Müller reading (in counts per minute) and converted to dpm by multiplying x 10 (an average conversion), and further converted to dpm per 100 cm² by multiplying x 6 (approximate number of probe areas in 100 cm²).

b- Laboratory analysis not performed

c - Not Detected (result less than zero, or less than its overall analytical error, or no peak detected).

Table 8-2 Investigative Sample Results – Vegetation, 1999 (pCi/g)

Sample #	Location	Sample Matrix	⁹⁰ Sr	¹³⁷ Cs	total U	Field Reading ^(a)
6860	241 EW 151	Tumbleweed	4.3E+03	1.5E+01	5.6E+04	300,000 dpm/100cm ²
6861	241 TX 152/155	Tumbleweed	1.4E+04	ND	1.3E+05	200,000 dpm/100cm ²
6870	241 TX 155	Tumbleweed	3.5E+05	4.1E+02	1.1E+06	450,000 dpm/100cm ²

a - Field monitoring results are expressed as disintegrations per minute per probe area (dpm) when a Geiger-Müller detector is used and the geometry of the source is not considered; or as millirad per hour (mrads/h) when an ion chamber is used.

To obtain field instrument readings expressed as dpm/100cm², the measured background radioactivity is subtracted from the Geiger-Müller reading (in counts per minute) and converted to dpm by multiplying x 10 (an average conversion), and further converted to dpm per 100 cm² by multiplying x 6 (approximate number of probe areas in 100 cm²).

Table 8-3 Investigative Sample Results – Animals, 1999 (pCi/g)

Sample #	Location	Sample Matrix	⁶⁰ Co	⁹⁰ Sr	¹³⁷ Cs	¹⁵⁴ Eu	¹⁵⁵ Eu	total U	²³⁸ Pu	^{239,240} Pu	Field Reading ^(a)
6851	200 East Area	Mouse Feces	ND ^(b)	9.5E+04	1.9E+03	ND	ND	(c)	ND	ND	200,000dpm/100cm ²
6852	200 East Area	Fruit Fly	ND	3.1E+04	5.0E+02	ND	ND	ND	ND	ND	200,000dpm/100cm ²
6864	200 East Area	House Fly	ND	ND	ND	ND	ND	ND	ND	ND	7,500dpm/100cm ²
6865	200 East Area	Mouse	ND	7.7E+00	5.9E+01	ND	ND	7.7E+03	ND	ND	30,000dpm/100cm ²
6867	200 East Area	Mouse	ND	3.1E+02	5.5E+02	ND	ND	7.5E+04	ND	ND	10,000dpm/100cm ²
6868	200 East Area	Mouse	ND	8.7E+02	4.1E+02	ND	ND	2.5E+05	ND	ND	30,000dpm/100cm ²
6869	200 East Area	Mouse Feces	ND	3.9E+05	7.5E+04	ND	ND	1.2E+06	ND	ND	>1,000,000dpm/100cm ²

a - Field monitoring results are expressed as disintegrations per minute per probe area (dpm) when a Geiger-Müller detector is used and the geometry of the source is not considered; or as millirad per hour (mrads/h) when an ion chamber is used.

To obtain field instrument readings expressed as dpm/100cm², the measured background radioactivity is subtracted from the Geiger-Müller reading (in counts per minute) and converted to dpm by multiplying x 10 (an average conversion), and further converted to dpm per 100 cm² by multiplying x 6 (approximate number of probe areas in 100 cm²).

b - Not Detected (result less than zero, or less than its overall analytical error, or no peak detected).

c - Laboratory analysis not performed.

Table 8-4 Investigative Samples Not Analyzed, 1999

DATE	Sample Matrix	Location	Field Reading ^(a)
01/05/1999	Specks	North Fence Line 241-SY	54,000dpm/100cm ²
01/06/1999	Tumbleweed	Northwest side of 221-T Plant	>1,000,000dpm/100cm ²
01/06/1999	Garbage	4843 Facility	80,000dpm/100cm ²
01/07/1999	2-Tumbleweeds	Northeast corner of 200-E Fence line	18,000dpm/100cm ²
01/07/1999	4-Tumbleweed Fragments	West Side of Canton Ave	150,000dpm/100cm ²
01/07/1999	Herbal Contamination	241-EW-151 Vent Station	60,000dpm/100cm ²
01/13/1999	Fixed Contamination	South Side of 105KW in URM Area	163,000dpm/100cm ²
01/14/1999	Tumbleweeds	300 meters North of 241-EW-151 towards Fire Station	10,000dpm/100cm ²
01/18/1999	Tumbleweeds	X-Site Transfer Line inside 200-E	1,800,000dpm/100cm ²
01/25/1999	Tumbleweeds	200-E fence line east of LERF	120,000dpm/100cm ²
01/25/1999	Tumbleweed	Cross Site Transfer Line east of 200-E perimeter fence	18,000dpm/100cm ²
01/27/1999	Tumbleweeds	241-EW-151 Vent Station	300,000dpm/100cm ²
02/01/1999	Tumbleweeds	Outside 200-E Fence east of LERF (max 8mR/hr, 16mrad/hr)	200,000dpm/100cm ²
02/03/1999	Tumbleweeds	West side of Canton Ave.	180,000dpm/100cm ²
02/04/1999	Tumbleweeds	East side of the 2025-E Bldg. @ the 200LWP Facility	200,000dpm/100cm ²
02/10/1999	Tumbleweeds	X-Site Transfer Line inside 200-E	60,000dpm/100cm ²
02/11/1999	Soil/Specks	Waste Storage Pad at 225-B	70,000dpm/100cm ²
02/12/1999	Tumbleweeds	X-Site Transfer Line inside 200-E, South of CSB	36,000dpm/100cm ²
02/13/1999	Tumbleweed Fragment	241-TX-155 Diversion Box	200,000dpm/100cm ²
02/13/1999	Tumbleweed	2238-E Facility @ FDNW Carpenters Field Fabrication Yard	39,900dpm/100cm ²
02/19/1999	Tumbleweeds	West of the 282-WC Salt Brine Pits	8,000dpm/100cm ²
02/19/1999	Specks	241-S & 241-SY Tank farms	199,000dpm/100cm ²
03/04/1999	Soil	5'X5' Area @ UPR-200-E-79	240,000dpm/100cm ²
03/04/1999	Mouse	1706-KE	2,000dpm/PA ^(b)
03/04/1999	Mouse	1706-KE	5,000dpm/PA
03/05/1999	Soil	2'X2' Area @ UPR-200-E-80	237,000dpm/100cm ²
03/10/1999	Tumbleweed Fragments	East side of 241-B Tank Farm	328,500dpm/100cm ²
03/10/1999	Speck	241-BX RCV Parking Area	249,900dpm/100cm ²
03/15/1999	Tumbleweeds	218-E-12B	950,000dpm/100cm ²
03/19/1999	Tumbleweeds	2247-B Facility	30,000dpm/100cm ²
03/19/1999	Tumbleweeds	Northeast of 241-B tank farm fence line	>1,000,000dpm/100cm ²
03/20/1999	Spots	Adjacent to 241-ER-151	245,000dpm/100cm ²
03/23/1999	Tumbleweed Fragments	Canton Ave south of Gate 810	3,600,000dpm/100cm ²
03/24/1999	Tumbleweed Fragments/Soil	4843 Transfer Station	50,000dpm/100cm ²
03/25/1999	Tumbleweeds	Northeast corner of fence line at Gate 810	1,250,000dpm/100cm ²
03/26/1999	Speck	241-ER-152	600,000dpm/100cm ²
03/26/1999	Tumbleweeds & Fragments	12th St. from Baltimore Ave to Gate 810 and Canton Ave	500,000dpm/100cm ²
03/29/1999	Tumbleweed	Outside RBA @ Gate 810	59,000dpm/100cm ²
04/02/1999	Tumbleweed Fragments	RBA located off Canton Ave.	360,000dpm/100cm ²
04/02/1999	Dogs	10th & Beloit Ave.	100dpm (radon)
04/05/1999	Tumbleweeds	216-E-12B @ NE Corner of Trench #94	400,000dpm/100cm ²
04/07/1999	Speck	241-ER-152	600,000dpm/100cm ²
04/14/1999	Mouse	190-KE	10,000dpm/100cm ²
04/15/1999	Mouse	1706-KE	10,000dpm/100cm ²
04/16/1999	Tumbleweed Fragments	Outside Gate 810 (1.5 mrad/hr)	>1,800,000dpm/100cm ²
04/17/1999	Tumbleweed Fragments	4843 Building Transfer Station (225-B Facilities)	25,000dpm/100cm ²
04/21/1999	Tumbleweed Fragments	Outside RBA off Canton Ave. south of Gate 810	180,000dpm/100cm ²

Table 8-4 Investigative Samples Not Analyzed, 1999 (cont)

DATE	Sample Matrix	Location	Field Reading ^(a)
04/28/1999	Tumbleweed	West of 241-EW-151 Vent Station	36,000dpm/100cm ²
04/28/1999	Speck	325-Building/300 Area, Speck found on carpet runner	130,000dpm/100cm ²
04/30/1999	Soil	Fence Line, SE of RBA at the LERF Site, 2"X2" Area	155,000dpm/100cm ²
04/30/1999	Speck	1/4 mile west of the 241-EW-151 Vent Station	200,000dpm/100cm ²
05/05/1999	Tumbleweed Fragments	West & East sides of the 241-U Tank Farm	40,000dpm/100cm ²
05/06/1999	Tumbleweed Fragments	East side of 241-A, AX, & AZ Tank Farm	22,500dpm/100cm ²
05/06/1999	Tumbleweed Fragments	Outside RBA off Canton Avenue	24,000dpm/100cm ²
05/07/1999	Tumbleweed Fragments	North east of RR Cut at entrance to 221-T Tunnel	80,000dpm/100cm ²
05/10/1999	Tumbleweed	200-East Fence Line	360,000dpm/100cm ²
05/10/1999	Tumbleweed	Northeast Corner of the 200-E Interior Fenceline	360,000dpm/100cm ²
05/12/1999	Tumbleweeds	200-East Perimeter Fenceline @ LERF	375,000dpm/100cm ²
05/19/1999	Tumbleweed	Northeast Corner of the 200-E Interior Fenceline	360,000dpm/100cm ²
05/19/1999	Tumbleweed Fragments	East fence line of 241-TX/TY Tank Farm	15,000dpm/100cm ²
05/26/1999	Tumbleweed Fragments	North of gate 810	180,000dpm/100cm ²
05/26/1999	Tumbleweed Fragments	North of gate 810	40,000dpm/100cm ²
05/26/1999	Rock	241-BY Perimeter	19,500dpm/100cm ²
05/27/1999	Speck	241-S Tank Farm	500,000dpm/100cm ²
06/02/1999	Speck	241-A Complex @ 701-A Compressor Building	70,000dpm/100cm ²
06/02/1999	Tumbleweed	200-East fence line	80,000dpm/100cm ²
06/02/1999	Bunch Grass	North of Gate 810	60,000dpm/100cm ²
06/03/1999	Tumbleweed	200-East Fence Line	146,000dpm/100cm ²
06/04/1999	Mouse carcass	241-ER-151 Diversion Box	10,000 dpm/100cm ²
06/08/1999	Tumbleweed	Outside HCA/RBA east of LERF (2.5 mrem/hr)	>1,000,000dpm/100cm ²
06/08/1999	Mouse	241-AN	30,000dpm/100cm ²
06/09/1999	Tumbleweed Fragments	North of Gate 810 (0.3 mrad/hr)	>1,000,000dpm/100cm ²
06/14/1999	Tumbleweed Fragments	242-B Perimeter	200,000dpm/100cm ²
06/16/1999	Tumbleweed Fragments	Posted Radiological Areas off Canton Ave.	22,000dpm/100cm ²
06/24/1999	Tumbleweed Fragments	Outside RBA off Canton Ave.	90,000dpm/100cm ²
06/24/1999	Soil (Suspect coyote urine)	URM Pipeline between B-Plant & 241-C Tank Farm	120,000dpm/100cm ²
06/24/1999	Specks	East of the 241-SX Tank Farm	75,000dpm/100cm ²
06/24/1999	Soil	300 yards north of 209-E Facility over URM Pipeline	120,000dpm/100cm ²
06/30/1999	Tumbleweed Fragments	Outside Gate 810 & off Canton Ave.	110,000dpm/100cm ²
07/01/1999	Soil	241-AX-151 (1.5 mrad/hr)	>1,000,000dpm/100cm ²
07/01/1999	Bait Trap	241-ER-151 Diversion Box	200,000dpm/100cm ²
07/06/1999	Specks	Outside Door 148, 105-KE	60,000dpm/100cm ²
07/06/1999	Tumbleweed Fragments	241-C Tank Farm	200,000dpm/100cm ²
07/08/1999	Tumbleweed	216-E-12B, Trench #94	1,000,000dpm/100cm ²
07/13/1999	Speck	241-ER-151 Diversion Box	1,000,000dpm/100cm ²
07/14/1999	Tumbleweed Fragments	216-E-12B, Trench #94	800,000dpm/100cm ²
07/26/1999	Tumbleweed Fragments	216-E-12B, Trench #94	70,000dpm/100cm ²
07/26/1999	Specks	241-ER-151 Diversion Box	800,000dpm/100cm ²
07/28/1999	Tumbleweeds	4843 Waste Handling Facility	65,000dpm/100cm ²
07/29/1999	Mouse Feces	244-A Lift Station	400,000dpm/100cm ²
08/02/1999	Soil	SE of the 11A Hotcell at 218-W-7 (244dpm/100cm ² Alpha)	290,000dpm/100cm ²
08/04/1999	Mouse Feces	244-A Lift Station (15mRad/hr uncorrected)	>1,000,000dpm/100cm ²
08/04/1999	Soil Speck	Outside the SE corner of 241-SX	60,000dpm/100cm ²
08/09/1999	Soil/Tumbleweed Fragments	241-TX-155 Diversion Box (15mrad/hr)	>1,000,000dpm/100cm ²
08/10/1999	Soil/Tumbleweed Fragments	241-TX-155 Diversion Box	120,000dpm/100cm ²
08/12/1999	Tumbleweed	MO-269 @ 200-LWP	90,000dpm/100cm ²

Table 8-4 Investigative Samples Not Analyzed, 1999 (cont)

DATE	Sample Matrix	Location	Field Reading ^(a)
08/12/1999	Tumbleweed Fragments	216-E-12B, Trench #94	200,000dpm/100cm ²
08/13/1999	Mouse Feces	ADCO Shop	>1,000,000dpm/100cm ²
08/18/1999	Trash	4843 Waste Handling Facility	750,000dpm/100cm ²
08/23/1999	Tumbleweed Fragments	Outside the fenceline at the SE corner of LERF	100,000dpm/100cm ²
08/24/1999	Mouse	241-SX, Tank 115	30,000dpm/100cm ²
08/25/1999	Soil	216-A-8	180,000dpm/100cm ²
09/02/1999	Mouse	Inside electrical panel at 2701-ZA	5,000dpm/100cm ²
09/03/1999	Tumbleweed Fragments	50' North of Gate 810	200,000dpm/100cm ²
09/03/1999	Mouse Trap	241-BX Change House	3,500dpm/100cm ²
09/04/1999	Tumbleweed Fragments	East of LERF	>1,000,000dpm/100cm ²
09/09/1999	Tumbleweed Fragments	218-E-12B	1,200,000dpm/100cm ²
09/14/1999	Tumbleweed Fragments	MO-964	80,000dpm/100cm ²
09/16/1999	Speck	241-SX	60,000dpm/100cm ²
10/05/1999	Tumbleweeds/Rabbit Brush	241-TX-155	300,000dpm/100cm ²
10/06/1999	Mouse Trap	241-A	8,000dpm/100cm ²
10/07/1999	Tumbleweeds	UPR-200-W-160(UN-216-W-36)	120,000dpm/100cm ²
10/07/1999	Soil	241-TX-155	>1,000,000dpm/100cm ²
10/07/1999	Speck	241-ER-151	>1,000,000dpm/100cm ²
10/07/1999	Tumbleweed Fragments	241-TX-302	>1,000,000dpm/100cm ²
10/07/1999	Tumbleweed Fragments	12th St. and Canton Ave	95,000dpm/100cm ²
10/12/1999	Specks	241-ER-151	500,000dpm/100cm ²
10/12/1999	Speck	241-TX-155	500,000dpm/100cm ²
10/12/1999	Railroad Rail	241-TX-155	300,000dpm/100cm ²
10/14/1999	Soil Speck	241-TX-155	10,000dpm/100cm ²
10/14/1999	Tumbleweed Fragments	241-TX-155	>1,000,000dpm/100cm ²
10/14/1999	RR Tie	244-A	>1,000,000dpm/100cm ²
10/14/1999	Specks	241-ER-311	200,000dpm/100cm ²
10/18/1999	Soil	221-T RR Cut	70,000dpm/100cm ²
10/18/1999	Specks	241-ER-151	350,000dpm/100cm ²
10/18/1999	Tumbleweed Fragments	LERF	55,000dpm/100cm ²
10/20/1999	Soil	216-B-3 Pond	8,400dpm/100cm ²
10/28/1999	Tumbleweed Fragments	271-T Loading Area	100,000dpm/100cm ²
10/26/1999	Tumbleweed Fragments	LERF	10,000dpm/100cm ²
11/04/1999	Tumbleweed Fragment	241-AN	35,000dpm/100cm ²
11/15/1999	Specks	241-ER-151	>1,000,000dpm/100cm ²
11/10/1999	Soil	241-U	650,000dpm/100cm ²
11/22/1999	Specks	218-W-4B	>1,000,000dpm/100cm ²
11/23/1999	Specks	218-W-4C	20,000dpm/100cm ²
11/23/1999	Specks	241-ER-151	54,000dpm/100cm ²
11/29/1999	Tumbleweeds	241-BX/BY Perimeter	36,000dpm/100cm ²
11/29/1999	Specks	241-ER-151	>1,000,000dpm/100cm ²
12/06/1999	Specks	241-ER-151	>57,000dpm/100cm ²
12/08/1999	Tumbleweed Fragments	Gate 810	61,000dpm/100cm ²
12/08/1999	Tumbleweeds	218-E-12B, Trench 94	249,000dpm/100cm ²
12/08/1999	Tumbleweed Fragments	218-E-12B, Trench 94	8,000dpm/100cm ²
12/13/1999	Tumbleweeds	207-B	480,000dpm/100cm ²
12/14/1999	Specks	Northwest of 241-ER-151	38,000dpm/100cm ²
12/14/1999	Tumbleweed Fragments	Southeast of LERF	100,000dpm/100cm ²
12/15/1999	Tumbleweed Fragments	South of LERF	27,000dpm/100cm ²

Table 8-4 Investigative Samples Not Analyzed, 1999 (cont)

DATE	Sample Matrix	Location	Field Reading ^(a)
12/17/1999	Tumbleweed Fragments	LERF loop road, south of LERF	79,500dpm/100cm ²
12/20/1999	Tumbleweed Fragments	LERF loop road, east side fence	94,000dpm/100cm ²
12/27/1999	Tumbleweed Fragments	LERF loop road, east & north fence	750dpm/100cm ²
12/29/1999	Specks	Northwest of 241-ER-151	34,000dpm/100cm ²
12/29/1999	Specks	BC Control Area	34,000dpm/100cm ²

a - Field monitoring results are expressed as disintegrations per minute per probe area (dpm) when a Geiger-Müller detector is used and the geometry of the source is not considered; or as millirad per hour (mrads/h) when an ion chamber is used.

To obtain field instrument readings expressed as dpm/100cm², the measured background radioactivity is subtracted from the Geiger-Müller reading (in counts per minute) and converted to dpm by multiplying x 10 (an average conversion), and further converted to dpm per 100 cm² by multiplying x 6 (approximate number of probe areas in 100 cm²).

b - Probe Area

9.0 NOXIOUS WEED CONTROL PROGRAM

Nine plant species are on a high priority list for control at the Hanford Site. These species are listed below, with a summary of the 1999 control activities. Major populations of noxious weeds on the Hanford Site are illustrated in Figure 9-1.

Yellow Starthistle (*Centaurea solstitialis*). Yellow starthistle represents the most rapidly expanding weed infestation in the Western United States. Hanford is at a critical point in the infestation cycle. Over 3,000 acres have been heavily infested, and a large seed bank has been established in the soil. Many additional acres have scattered starthistle infestation. Efforts to control yellow starthistle in 1999 included spot treatment of pioneer populations, and aerial application of herbicide to approximately 2,200 acres which completed the initial control effort on the area of major infestation.

Rush Skeletonweed (*Chondrilla juncea*). Rush skeletonweed is widely scattered over several thousand acres on the Hanford Site. Included are four populations of one or more acres where skeletonweed is either the dominant or co-dominant species. Each of these four large populations was treated in 1998, and follow-up treatment was conducted in 1999 to plants that escaped the 1998 control efforts. As in most other years, some populations were highly affected by the bio-controls, and flowering was eliminated. Other populations were less affected, and some were not significantly impacted by the bio-control agents.

Babysbreath (*Gypsophila paniculata*). Control of babysbreath continued in 1999. Approximately 90% of the population was controlled before the population become too mature for additional controls to be effective.

Dalmatian Toadflax (*Linaria genistifolia* ssp. *Dalmatica*). Follow-up monitoring of dalmatian toadflax in 1999 found no surviving plants in areas sprayed in 1998. An additional population, with individuals scattered over approximately 50 acres, was discovered and treated in 1999.

Spotted Knapweed (*Centaurea maculosa*). Monitoring continued at five known locations of spotted knapweed infestation. Three of these populations had surviving plants that were again treated in 1999.

Diffuse Knapweed (*Centaurea diffusa*). Diffuse knapweed has become established in several locations on the Hanford Site, and is rapidly invading and expanding in many areas. Approximately 350 acres were treated aerially in 1999, with spot treatment occurring over an additional 500 acres. Vehicle traffic is a major vector for dispersal of diffuse knapweed and a special effort was made to treat roadways to prevent seed production and transport.

Russian Knapweed (*Acroptilon repens*). Approximately 20 acres of Russian knapweed were treated in 1999. Russian knapweed is difficult to control, and evaluation of treatment will occur in the early summer of 2000.

Saltcedar (*Tamarix spp.*). Several individual plants of saltcedar are found on the Hanford Site, generally south and west of the Columbia River. Most are remaining from ornamental plantings around homes in the early part of this century, and a few populations are the result of natural seed dispersal. All individuals were treated in 1999 to prevent seed dispersal to sensitive habitats.

Purple Loosestrife (*Lythrum salicaria*). Portions of Hanford's riparian areas were monitored for Purple Loosestrife in 1999. Two scattered populations of approximately 25 acres each were located and treated.

Figure 9-1 Major Populations of Noxious Weeds, 1999

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10.0 QUALITY ASSURANCE

Quality Assurance (QA) may be defined as the actions necessary to ensure the accuracy of a program. The near-facility environmental monitoring QA program consists of procedures and guides to demonstrate that environmental monitoring techniques and analyses are performed within established limits of acceptance. This is documented in the *Near-Facility Environmental Monitoring QA Project Plan* (McKinney 2000).

Written operating procedures are an integral part of near-facility environmental monitoring QA. Procedures for field operations are provided in an internal WMTS *Operational Environmental Monitoring* manual. This appendix briefly describes the essential components of the near-facility environmental monitoring QA program.

DOCUMENTATION

Record keeping is a vital part of any environmental monitoring program. Maintenance of environmental data is important from a QA standpoint, from a regulatory standpoint, and for trend analyses and optimization of environmental monitoring procedures. Each phase of near-facility environmental monitoring is documented. This documentation includes environmental sample logbooks, quarterly and annual reports, and occurrence reports.

SAMPLE REPLICATION

Replicate sampling and subsequent analyses are the primary means of assessing sample variability. Duplicate samples of air, water, soil, sediment, and vegetation are collected.

DATA ANALYSIS

Environmental data are reviewed to determine compliance with applicable regulations and company guides. The data are analyzed both graphically and by standard statistical tests to determine trends and impacts on the environment. Newly acquired data are compared with historical data and natural background levels. Routine environmental data are stored on both magnetic media (i.e., in a computer environment) and hard-copy printouts.

TRAINING

To ensure quality and consistency in sample collection and handling, all personnel performing such work receive formal training. All radiological control technicians are required to complete a certification program. In addition, those radiological control technicians assigned to environmental monitoring receive special classroom orientation and on-the-job training by

experienced personnel. WMTS Environmental Monitoring and Investigations personnel, in addition to their formal training received while obtaining professional degrees, received training in such courses as "Radiation in the Environment," taught through the Washington State University, courses taught at the Harvard School of Public Health, and various short courses.

SAMPLE FREQUENCY

1. Ambient air sample filters are collected biweekly.
2. Water samples from active ponds and ditches are collected monthly.
3. Radiological surveys of roads are performed quarterly, bimonthly, or annually.
4. The TLDs are exchanged quarterly.
5. Radiological surveys of waste sites are performed quarterly, semiannually, or annually depending on the operating status, condition, and history of the site.
6. Soil, vegetation, surface water, fecal samples, and sediment and vegetation samples from active ponds and ditches are collected annually.

ANALYTICAL PROCEDURES

Three laboratories provided analytical support to the near-facility environmental monitoring: Pacific Northwest National Laboratory, the WSCF, and the 222-S Analytical Laboratory. Samples are analyzed in accordance with prescribed procedures and quality control guides that are described briefly in the following paragraphs.

Quanterra Environmental Services

Environmental samples that require measurements at a very low detection limit and special samples in support of pre-operational environmental monitoring may be performed at Quanterra Environmental Services. The analytical laboratory may analyze soil, vegetation, animal feces, groundwater, and air samples. Analyses are performed according to formal, written procedures and quality control guides.

Pacific Northwest National Laboratory Radiation Standards and Engineering

Thermoluminescent Dosimeters. External radiation levels are measured using TLDs. The Hanford Site uses the Harshaw 8807 dosimeter and the Harshaw 8800 reader. The TLDs are calibrated, packaged, and read by the Pacific Northwest National Laboratory Radiation

Calibration Laboratory, Radiation Standards and Engineering Department. All TLD work is performed in accordance with formal, written procedures.

222-S and Waste Sampling and Characterization Facility Analytical Laboratories

The 222-S and WSCF laboratories also provide analytical support to near-facility environmental monitoring. The WSCF is used for the samples containing typical environmental levels of radioactivity. The 222-S Laboratory is normally used for samples containing higher than normal environmental levels of radioactivity. Formal, written laboratory procedures are used in analyzing samples.

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11.0 GLOSSARY

Aboveground Tank - A tank situated so that its entire surface area is completely above the plane of the adjacent surrounding surface and the entire surface area of the tank (including the tank bottom) can be visually inspected (WAC 173-303-040).

Accessible Soils - Hanford soils that are not behind security fences must meet the Table 1 values found in the Fluor Hanford, Inc. *Inactive Waste Sites*, HNF-PRO-454. These limits apply specifically to the Hanford Site with respect to onsite disposal operations, stabilization and cleanup, and decontamination and decommissioning operations. The values reflect a 10-mrem/yr effective dose equivalent limit from Hanford Site operations to the most exposed member of the public. A listing of the limits can be found in Section 12.0, Table 12-3 of this report.

Activation Products - Material made radioactive by exposure to a radiation source such as the neutrons in a nuclear reactor.

Administrative Control Value (ACV) - Operating contractor's internally imposed release limit for an airborne or liquid effluent. The ACV is usually expressed as a fraction or multiple of the derived concentration guide-public but may also be expressed as a total release value (curies per year for krypton-85 and tritium). In applying the ACV, the "Unity Rule" applies; the sum of the fractions of the ACV in an effluent shall not exceed 1.

Airborne Radioactive Effluents - Radioactive particles, mists, vapors, fumes, and/or gases contained or entrained in airborne effluents.

Areal Contamination - Contamination generally confined to less than the first centimeter of soil. Numerically, the radioactivity content averaged over a suitable area.

As Low As Reasonably Achievable (ALARA) - The implementation of ALARA is described in HNF-PRO-1618, *ALARA Management Commitment and Policy*. This concept applies to maintaining releases at or below prescribed regulatory limits.

Average Soil Contamination - Contamination generally dispersed through the soil. Numerically, the radioactivity content averaged over a suitable mass of soil.

Backfill Soil - The soil used as a plant growth medium between the depths of 30-120 cm as measured at the restabilization site.

Background Radiation - Refers to regional levels of radioactivity produced by sources other than those of specific interest (e.g., the nuclear activities at the Hanford Site).

Barrier or Engineered Barrier - At a disposal site, a manufactured addition designed to retard or preclude radionuclide or other contaminant transport and/or preserve the integrity of the disposal site.

Becquerel (Bq) - The standard international unit of radioactivity. One Becquerel is one disintegration per second or: $Bq = 2.7 \text{ E} - 11 \text{ Ci}$

Biological Transport - Means of biological transport may include one or more of the following processes:

- Movement of subsurface radioactivity to the surface by physiological vegetative processes.
- Dispersion of such vegetation by the wind.
- Contaminated urine and feces deposited by animals that have gained access to and ingested radioactive materials.
- Contaminated animals themselves that have ingested radioactive materials directly or ingested other contaminated animals or plants.
- Physical displacement of radioactive materials by burrowing animals.
- Nests built using contaminated materials.

Biota - The plant and animal life of a specific region.

Building - A structure created to shelter any form of human activity, such as a house, barn, church, hotel, or similar structure; it also may refer to a historically related complex, such as a courthouse and jail; or, on the Hanford Site, buildings to include: old reactor buildings, office buildings; e.g., 2750 Building, 222-S Laboratory Building, etc.

Burial Ground - A land area specifically designated to receive contaminated solid or solidified liquid waste packages and equipment. The contaminated articles are usually placed in trenches and covered with overburden.

Byproduct - A material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slag or distillation column bottoms. The term does not include a coproduct that is produced for the general public's use and is ordinarily used in the form in which it is produced by the process.

Calibration - Determining the deviation of an instrument from a standard traceable to the National Bureau of Standards or other recognized agency and reporting the deviations and/or eliminating them by adjustment.

Central Landfill - The DOE-owned disposal site once used for the disposal of trash and other nonhazardous nonradioactive wastes. Landfill operations were discontinued in March 1996.

Chemical Processing - Chemical treatment of material to separate desired components selectively. At the Hanford Site, plutonium, uranium, and fission products were chemically separated from irradiated fuels.

Chemical Trench - The central landfill trench that was used for the disposal of chemicals, hazardous wastes, and hazardous substances.

Committed Dose Equivalent - The predicted total dose equivalent to a tissue or organ over a 50-year period after a known intake of a radionuclide into the body. It does not include contributions from external dose. Committed dose equivalent is expressed in units of rem (or sievert).

Committed Effective Dose Equivalent - The sum of the committed dose equivalents to various tissues in the body, each multiplied by the appropriate weighing factor. Committed effective dose equivalent is expressed in units of rem (or sievert).

Composite Sample - A number of samples initially collected individually at different times or from different locations that are subsequently combined into a single sample.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) - Commonly known as "Superfund," CERCLA was enacted to respond to uncontrolled releases of hazardous substances to the environment, primarily at inactive sites that were not adequately addressed by the *Resource Conservation and Recovery Act of 1976 (RCRA)*. CERCLA also applies to actively managed facilities and any onshore or offshore facility.

Confined Aquifer - A subsurface water-bearing region having defined and relatively impermeable upper and lower boundaries.

Conserve - Use methods and procedures necessary to protect any endangered or threatened species. Such methods and procedures include, but are not limited to, activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation. In the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, methods and procedures may include regulated taking.

Controlled Area - An area where access is controlled to protect individuals from exposure to radiation and/or radioactive materials.

Construction - Addition, enlargement, modification, replacement, alteration, or restart (after a period of five years of nonoperation) of any process or stationary source that may increase emissions or ambient air concentrations of any contaminant for which federal or state ambient or emission standards have been established.

Contamination Area - Any area where contamination levels are greater than the values specified in the *PHMC Radiological Control Manual*, HNF-5173, but less than or equal to 100 times those values.

Contamination Limit - That concentration limit or activity limit for radioactive materials below which posting restrictions and environmental controls to protect personnel or the environment are not necessary.

Crib - An underground structure designed to receive liquid waste that percolates into the soil directly or percolates into the soil after having traveled through a connected tile field.

Curie (Ci) - A unit of radioactivity equal to 37 billion ($3.7\text{E}+10$) disintegrations per second.

Decommissioning - Actions taken to reduce the potential health and safety impacts of DOE-controlled contaminated facilities. Actions could include stabilizing, reducing, or removing radioactivity or demolishing the contaminated facilities.

Decontamination - The removal of radioactive or hazardous contamination from facilities, equipment, or soils by washing, heating, chemical or electrochemical treating, mechanical cleaning, or other techniques.

Demolition Waste - Solid waste, made up largely of inert waste resulting from the demolition or razing of buildings, roads, and other manufactured structures. Demolition waste consists of, but is not limited to, concrete, brick, bituminous concrete, wood and masonry, composition roofing and roofing paper, steel, and minor amounts of other metals such as copper. [Plaster (sheet rock or plasterboard), asbestos, or any material other than wood that is likely to produce gases or a leachate during the decomposition process is not considered to be demolition waste.]

Derived Concentration Guide for Occupational Exposure (DCG-Occupational) - Those concentrations in air or water that an occupationally exposed individual would have to inhale/ingest in a year to result in 5,000-mrem/50 year dose commitment.

Derived Concentration Guide for Public Exposure (DCG-Public) - The DCG-Public are those concentrations of radionuclides in air or water that would result in a maximum effective committed dose equivalent of up to 100 mrem per year using ICRP-30 dose methodology under conditions of continuous exposure or use (i.e., continuously breathing or being in contact with contaminated air or exclusively drinking contaminated water). These concentrations are specified in Section 12.0, "Derived Concentration Guides for Controlling Exposure to Members of the Public," of this report.

Diffuse Source - A source or sources of radioactive or chemical contaminants released into the environment that do not have a defined point or origin of release (a nonpoint source). Such sources are also known as area sources.

Dispersible - Capable of being widely spread.

Disposal - Discharging, discarding, or abandoning dangerous waste, or the treatment, decontamination, or recycling of such waste once it has been discarded or abandoned. This includes the discharge of any dangerous waste into or on any land, air, or water (WAC 173-303-040). This definition also includes radioactive materials.

Disposal Facility - Any facility or part of a facility where hazardous and/or radioactive waste is intentionally placed or where any land or water wastes will remain after closure.

Disturbance - Includes, but is not limited to, the following: leveling; firebreak, road, or utility line construction; excavation of pits, foundations and trenches; quarrying and borrowing of rock and soils; seismic testing; and stockpiling of earth.

Ditch - An open surface site for transport of liquid wastes to a pond or trench structure designed for percolation.

Dosimeter - A portable device for measuring the total accumulated exposure or absorbed dose from ionizing radiation fields.

Effective Dose Equivalent (EDE) - The summation of the products of the dose equivalent received by specified tissues of the body and a tissue-specific weighing factor. This sum is a risk-equivalent value and can be used to estimate the health-effects risk of the exposed individual. The tissue-specific weighing factor represents the fraction of the total health risk resulting from uniform whole-body irradiation that would be contributed by that particular tissue. The EDE includes the committed EDE from internal deposition of radionuclides and the EDE caused by penetrating radiation from sources outside the body. EDE is expressed in units of rem (or sievert).

Effluent - An airborne or liquid discharge from a facility after all engineered waste treatment and effluent controls have been performed. The term includes onsite discharges to the atmosphere, lagoons, ponds, cribs, injection wells, French drains, or ditches. The term does not include solid waste stored or removed for disposal or waste that is contained in retention basins or tanks before treatment and/or disposal.

Emissions Unit - Regarding air pollutant emissions, any part of a stationary source that emits or would have the potential to emit any pollutant subject to regulation.

Environmental Monitoring Plan (EMP) - A two-part document prepared for each site, facility, or process that uses, generates, releases, or manages significant pollutants or hazardous materials.

Exhaust System - A stack, gaseous effluent system, building ventilation system, or any system that vents air or gaseous material to the atmosphere.

Expedited Response Action - An interim response action (IRA) or interim measure (IM) process. This includes any onsite response action (under CERCLA or RCRA authority) to mitigate site contamination conducted before initiation of remedial action or corrective action in accordance with final record of decision (ROD) or permit modifications.

Exposure - The interaction of an organism with a physical (e.g., radiation) or chemical (e.g., lead) agent.

External Radiation - Radiation originating from a source outside the body.

Facility - A processing plant, tank farm, shop, laboratory, powerhouse, or laundry. Including all contiguous land and structures, other appurtenances, and improvements on land used for recycling, reusing, reclaiming, transferring, storing, and treating of dangerous waste (including treatment, storage, and disposal sites as well as groundwater wells). (40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities," and WAC 173-303-040.)

Facility-Specific Environmental Monitoring - Routine environmental monitoring of all environmental media (air, biota, etc.) around facility parameters.

Field Blank - Aliquots of analyte-free sample media brought to the field in sealed containers and transported to the laboratory with the sample container. Field blanks can include trip blanks and equipment blanks.

Field Duplicate - Field duplicates are collected at specified frequencies and are used to document precision. The field duplicate precision depends on the variance of waste composition, sampling techniques, and analytical technique.

Fish or Wildlife - Any member of the animal kingdom including (without limitation) any mammal, fish, bird, amphibian, reptile, mollusk, crustacean, arthropod, or other invertebrate--including any part, product, egg, offspring, or the dead body or parts of the offspring.

Fission Products - Elements formed from fissioning. Many fission products are radioactive.

French Drain - A covered or rock-filled encasement with the bottom end open to allow liquids to seep into the ground.

Fugitive Emissions - Material that is generated incidental to an operation, process, or activity and that is released or dispersed into the open air. Fugitive emissions occur via pathways that do not allow routine measurement at the point of release.

Grab Sample - A single sample removed from a sample collection site over a short time interval.

Groundwater - Subsurface water that is in the pore spaces of soil and geologic units.

Half-life – The average time interval in which a radioactive substance will lose (decay) half of its radioactivity.

High-Efficiency Particulate Air (HEPA) Filter - To qualify as a HEPA filter, a filter must achieve an efficiency of 99.97% under laboratory conditions and 99.95% after installation for the removal of airborne particulates greater than 3×10^{-5} cm (0.3 microns).

High-Level Nuclear Waste - Spent nuclear fuel or radioactive waste resulting directly from the dissolution and reprocessing of spent nuclear fuel. Secondary waste streams resulting from the dissolution and reprocessing of spent nuclear fuel are not considered high-level waste.

Inactive Crib - A crib that has been designated as permanently out of service.

Inactive Radioactive Waste Site - Any waste site that is no longer needed for current operational programs and that is not currently an active waste disposal site.

Inactive Waste Sites - Inactive waste sites include units such as burial grounds, unplanned release sites, cribs, ditches, ponds, trenches, and basins, abandoned storage areas, drains, single-shell tank piping, transfer pits, and jumper boxes.

Inert Waste - Noncombustible, nondangerous solid waste that is likely to retain its physical and chemical structure under expected conditions of disposal, including resistance to biological attack and chemical attack from acidic rainwater.

Isotope – Radionuclides with the same number of protons (same atomic number) but a different number of neutrons (different mass).

Less Than Detectable - An analytical term for a concentration in a sample that is lower than the minimum detection capabilities of that analytical equipment or process.

Low-Level Waste - Any gaseous, liquid, or solid radioactive waste not classified as high-level waste, transuranic waste, or spent nuclear fuel, as defined by DOE Order 435.1, *Radioactive Waste Management*.

Millirem – A unit of radiation dose equivalent that is equal to one one-thousandth (1/1000) of a rem.

Minimum Detection Limit – Smallest amount or concentration of a radionuclide or nonradioactive element that can be reliably detected in a sample.

Mixed Waste - Dangerous waste that also contains enough radioactivity to be classified as radioactive waste.

Modification - Any physical or operational change to a stationary source that results in an increase in the rate of emission to the atmosphere of an air pollutant to which a standard applies.

Near Facility Environmental Monitoring - The collection and analysis of samples of air, water, soil, biota, and other media near nuclear facilities on DOE sites and their environs and the measurement of external radiation to demonstrate compliance with applicable standards and assess radiation exposures to employees and members of the public, and the near-field environment.

Nonroutine Activities - Any actions on a large-scale (>5 acres), including stabilization, soil removal, fixative or sealant application, other surface treatments, or other activities that could affect future remediation activities in an inactive waste site.

Normally Contaminated Airborne or Liquid Effluent - An airborne or liquid effluent from a facility or area that contains dispersible or unsealed radioactive materials in quantities sufficient to cause releases of radioactive materials in excess of 10% of the administrative control limit (ACL) averaged over 1 year (i.e., the total activity present times an appropriate suspendable or immersible fraction divided by the total annual flow exceeds 10% of the ACL).

Not Detected - A reporting term which describes any or all of the following: the overall analytical error was greater than the radionuclide concentration itself; or, after allowing for the subtraction of the background level of the radionuclide, the resulting concentration was less than zero; or, no radio analytical peak was detected during the analysis.

Operate - As used in this section with respect to the activities of the Project Hanford Management Contract, the term "operate" (and other forms of the term) will refer to the performance by the Project Hanford Management Contract of its day-to-day activities in connection with the tanks and tank systems. Such activities shall be subject to the overall management, control, and oversight by DOE.

Overall Error - In this report, this term means the overall analytical error supplied by the laboratory performing the analysis.

Pesticide - As defined in 40 CFR 162, the term pesticide covers all pest-control chemicals such as herbicides, rodenticides, and insecticides.

Point of Release - The point at which a material is released to the environment such as the top of a stack or the end of a pipe.

Point Source - A single defined point (origin) of an airborne release, such as a vent or stack.

Pond - A surface impoundment used to contain or percolate low-level liquid radioactive waste, mixed waste, or hazardous waste.

Potentially Contaminated Airborne or Liquid Effluent - An airborne or liquid effluent from a facility or area that contains radioactive materials in quantities sufficient to cause releases of radioactive materials in excess of 10% of the ACV averaged over 1 year (the total activity present times a reasonable suspendable or immersible fraction divided by the annual flow equals more than 10% of the ACV).

Potentially Corrosive Liquid Waste Stream - Any liquid waste stream that has been identified as having the potential, during upset conditions, to discharge liquid with a pH value of less than or equal to 2, or greater than or equal to 12.5.

Previously Disturbed Ground - Ground that has had its contours altered by leveling, filling, or excavation or that has been contaminated by radiation or dangerous chemicals to the extent that an individual cannot enter the area without wearing protective clothing. Disturbance is determined by observation, aerial photographs, and topographic maps.

Quality Assurance - All those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service.

Radiation Survey - Evaluation of an area or object with portable instruments to identify radioactive materials and radiation fields present.

Radioactive Liquid Effluent - A liquid effluent that has a reasonable potential for containing radioactive materials in quantities such that the annual average concentration is equal to or greater than the MCL.

Radioactivity - The property possessed by some isotopes in which radiation (e.g., alpha, beta, gamma photons) is emitted during the radioactive decay process.

Radioisotope - An unstable isotope an element.

Radiological Control Area - An area where access is controlled to protect individuals from exposure to radiation and/or radioactive materials. Radiological control areas include, but are not limited to, areas posted as Radiation Area, Surface Contamination, and Underground Radioactive Materials, to describe the radiological condition of the area within.

Radiological Posting - Information in the form of signs and barriers to inform people of radiological conditions that warrant avoidance or special precautions for entry.

Release From Radiological Posting - Removal of signs and barriers when access to an area no longer needs to be restricted for radiological protection purposes.

Rem - A unit of dose equivalent and effective dose equivalent.

Representative Sample - The average stream parameter being measured occurs in the sample in the same average proportion that it occurs in the environmental discharge.

Retired Waste Site - A waste site that is isolated and no longer available to receive waste in any form.

Routine Activities - Any actions on a small-scale (<5 acres), including radioactive hot-spot removal, vegetation removal, fencing, posting, herbicide spraying, stabilization, or immediate spill response) in an inactive waste site. In general, these routine actions shall not interfere with RCRA/CERCLA response or site investigations.

Routine Emissions - Air emissions of pollutants or releases from accidents are not considered routine. However, releases of air pollutants to the atmosphere that result from normal operations and releases that are not routine, but are more likely than not to occur, are included as routine emissions.

Sampling System - Instrumentation and equipment that remove a part of a liquid or airborne waste stream for subsequent quantitative determination of stream parameters. The system generally employs such devices as filters, other sample collection media, or effluent traps of some kind. A continuous sampling system removes a part of the stream continuously except during sample change, maintenance, repair, or other necessary outages. A grab sampling system removes an instantaneous part of the stream or removes a part of the stream over a time period.

Sediment Column - The sediment beneath a crib. It can mean either all the sediment beneath the bottom of the crib extending to the water table or all sediment beneath a crib contaminated by radioactive materials.

Sievert (Sv) - Unit of dose equivalent and effective dose equivalent that is equal to 100 rem.

Soil Contamination - Contaminated soil not releasable in accordance with DOE Order 5400.5.

Solid Waste - Any discarded material that is not excluded by WAC 173-303-017(2) or that is not excluded by a variance granted under WAC 173-303-017(5). Materials are solid waste if they are: (1) abandoned by being disposed of, burned, or incinerated, or (2) accumulated, stored, or treated (but not recycled) before (or in lieu of) being abandoned by being disposed of, burned, or incinerated. In addition, a solid waste includes any material considered to be inherently waste-like.

Speck Contamination - Single grains of soil, rust particles, feces, or pieces of vegetation, generally with a diameter of less than 0.6 cm (0.25 in.).

Spent [Nuclear] Fuel - Nuclear reactor fuel that has been irradiated to the extent that it can no longer effectively sustain a chain reaction. It is highly radioactive.

Spot Contamination - A spot or quantity of contamination less than 1 cm³ in volume, or areal contamination less than 15 cm² in area.

Stabilization - The process of covering surface contaminated areas with clean backfill or topsoil.

Standard - A specified set of rules or conditions concerned with the classification of components; delineation of procedures; definition of terms; designation of materials, performance, design, or operations; or measurements of quality in describing materials, products, systems, services, or practices. A standard is more general than a procedure or specification and more specific than a criterion.

Standard Error of the Mean - A measure of the uncertainty in the estimated averages of data because of random variations.

Stationary Source - Any building, structure, facility, or installation that emits or may emit any air pollutant.

Suitable Surface Area - Area no more than 15 cm² over which spot contamination may be averaged in determining areal contamination.

Sump - Any stationary pit or reservoir, including those troughs/trenches connected to it, that serve to collect oil products, hazardous substances, low-level radioactive material, dangerous waste, mixed waste, high-level radioactive materials, or transuranic materials.

Surface Soil - Soil from 0 in. to 2 in. deep.

Surface Stabilization - A remedial action program on waste disposal sites that includes the addition of clean soil followed by revegetation. It is designed to cover surface contamination and inhibit biological and wind transport.

Survey - A method to detect the release, disposal, or presence of radioactive materials or hazardous substances under a specific set of conditions to determine actual or potential hazards. Such an evaluation may include, but is not limited to, tests, physical examinations, and measurements of radiation or concentrations of materials.

Suspect Waste Site - A site, believed to have been previously unknown or undocumented, that, because of characteristics present at the site or historical information about the site, is suspected of containing waste (i.e., non-dangerous, hazardous, dangerous, mixed, and radioactive).

Suspendable Fraction - The fraction of a material that may become airborne.

Tank - A stationary device designed to contain an accumulation of oil products, hazardous substances, low-level radioactive material, dangerous waste, mixed waste, high-level radioactive materials, or transuranic materials, that is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) that provide structural support.

Tank Farm - An area of large underground tanks designed to store up to 1 Mgal each of high-level liquid waste.

Thermoluminescent Dosimeter - A chip or series of chips used for measuring external gamma radiation. It consists of a material capable of absorbing energy imparted by ionizing radiation, then emitting light as a result of thermal stimulation. A measure of that light is proportional to the radioactivity absorbed.

Topsoil - The soil used as a plant growth medium at the surface up to a depth of 30 cm as measured at the restabilization site. Topsoil is added soil to support the stabilization of a retired disposal facility with the objective of controlling erosion, establishing the growth of perennial grasses, and preventing the growth of deep-rooted vegetation.

Transuranic (TRU) Radionuclide - Any radionuclide having an atomic number greater than 92 (DOE Order 435.1).

Transuranic Waste - Without regard to source or form, radioactive waste that at the end of institutional control periods is contaminated with alpha-emitting transuranium radionuclides with half-lives greater than 20 years and concentrations greater than 100 nCi/g (3700 Bq/g). The Waste Isolation Pilot Plant, high-level waste, and spent nuclear fuel as defined by DOE Order 435.1 are specifically excluded from this definition.

Trip Blank - A type of field blank used to accompany sample containers to and from the field and to detect contamination or cross-contamination that may occur during sample handling and transportation.

Uncontaminated Soil - A soil or a land area that requires no controls or restrictions in any way for radiation protection purposes and/or meets the contamination limit specifications.

Underground Radioactive Material - A radiological posting status where subsurface radioactivity is present, but where surface contamination does not exceed the soil standards.

Unity Rule - If more than one radionuclide is present, the sum of the fractions represented by each radionuclide concentration divided by its respective limiting concentration (ACV) shall not exceed unity. This rule could also apply to parameters other than radionuclide concentration.

Unplanned Release Site - An area that was contaminated by an unplanned release of radioactive contamination, making it a radiological control area.

Unrestricted Release - Values below which unrestricted release of soils will occur will be defined in an applicable record of decision.

U.S. Environmental Protection Agency (EPA) - The federal agency chartered with carrying out and monitoring the environmental regulations.

Vector - Any animal species that can transmit toxic, radioactive, or infectious material from a disposal or storage site to uncontrolled areas. Vectors include flies, birds, mice, coyotes, etc.

Waste Information Data System (WIDS) - A database that identifies waste management units on the Hanford Site. It is a subset of the ESD.

Waste Management - The activity involved with storing, disposing of, shipping, handling, and monitoring all radioactive waste.

Waste Sites - Any facility used for the planned disposal of hazardous, radioactive, toxic, or nonradioactive/nontoxic waste.

Water Table - The upper boundary of an unconfined aquifer below which saturated groundwater occurs.

Table 11-1 Radionuclide Nomenclature

Radionuclide	Symbol	Half-Life	Radionuclide	Symbol	Half-Life
tritium	³ H	12.3 yr	cesium-134	¹³⁴ Cs	2.1 yr
beryllium-7	⁷ Be	53.28 d	cesium-137	¹³⁷ Cs	30.3 yr
carbon-14	¹⁴ C	5,715 yr	cerium-144	¹⁴⁴ Ce	284.6 d
sodium-22	²² Na	2.6 yr	promethium-147	¹⁴⁷ Pm	2.6 y
potassium-40	⁴⁰ K	1.28 x 10 ⁹ yr	europium-152	¹⁵² Eu	13.2 y
argon-41	⁴¹ Ar	1.8 h	europium-154	¹⁵⁴ Eu	8.5 y
chromium-51	⁵¹ Cr	27.7 d	europium-155	¹⁵⁵ Eu	4.96 yr
manganese-54	⁵⁴ Mn	312 d	thallium-208	²⁰⁸ Tl	3.1 min
cobalt-57	⁵⁷ Co	272 d	bismuth-212	²¹² Bi	60.6 min
cobalt-58	⁵⁸ Co	71 d	lead-212	²¹² Pb	10.6 h
cobalt-60	⁶⁰ Co	5.3 yr	polonium-212	²¹² Po	3.1 x 10 ⁻⁷ s
nickel-63	⁶³ Ni	100 yr	polonium-216	²¹⁶ Po	0.15 s
zinc-65	⁶⁵ Zn	243.8 d	radon-220	²²⁰ Rn	55.6 s
krypton-85	⁸⁵ Kr	10.7 yr	radium-226	²²⁶ Ra	1,600 yr
strontium-89	⁸⁹ Sr	50.5 d	radium-228	²²⁸ Ra	5.75 yr
strontium-90	⁹⁰ Sr	29.1 yr	thorium-232	²³² Th	1.4 x 10 ¹⁰ yr
niobium-95	⁹⁵ Nb	35.0 d	uranium total	U or uranium	--
zirconium-95	⁹⁵ Zr	64.0 d	uranium-234	²³⁴ U	2.4 x 10 ⁵ yr
molybdenum-99	⁹⁹ Mo	2.7 d	uranium-235	²³⁵ U	7 x 10 ⁸ yr
technetium-99	⁹⁹ Tc	2.12 x 10 ⁵ yr	uranium-236	²³⁶ U	2.3 x 10 ⁷ yr
ruthenium-103	¹⁰³ Ru	39.4 d	uranium-238	²³⁸ U	4.5 x 10 ⁹ yr
ruthenium-106	¹⁰⁶ Ru	368 d	plutonium-238	²³⁸ Pu	87.7 yr
tin-113	¹¹³ Sn	115 d	neptunium-239	²³⁹ Np	2.4 d
antimony-125	¹²⁵ Sb	2.7 yr	plutonium-239	²³⁹ Pu	2.4 x 10 ⁴ yr
iodine-129	¹²⁹ I	1.57 x 10 ⁷ yr	plutonium-240	²⁴⁰ Pu	6537 yr
iodine-131	¹³¹ I	8.0 d	plutonium-241	²⁴¹ Pu	14.4 yr
barium-133	¹³³ Ba	10.53 yr	americium-241	²⁴¹ Am	432 yr

12.0 STANDARDS

Table 12-1 U.S. Department of Energy Derived Concentration Guides^(a)

Radionuclide	DCG		Half-life	Radionuclide	DCG		Half-life
	Air (pCi/m ³)	Liquid (pCi/L)			Air (pCi/m ³)	Liquid (pCi/L)	
³ H	1.0E+05	2.0E+06	12.3 Years	¹⁴⁷ Pm	3.0E+02	1.0E+05	2.6 Years
¹⁴ C	6.0E+03	7.0E+04	5,700 Years	¹⁵² Eu	5.0E+01	2.0E+04	13.2 Years
⁴⁰ K	9.0E+02	7.0E+03	1.28E+9 Years	¹⁵⁴ Eu	5.0E+01	2.0E+04	8.5 Years
⁴¹ Ar	1.0E+04	0.0E+00	1.8 Hours	¹⁵⁵ Eu	3.0E+02	1.0E+05	4.96 Years
⁵¹ Cr	5.0E+04	1.0E+06	28 Days	²⁰⁸ Tl	5.0E+03	0.0E+00	3.1 Minutes
⁵⁴ Mn	2.0E+03	5.0E+04	312 Days	²¹² Bi	6.0E+02	1.0E+05	60.55 Minutes
⁵⁹ Fe	8.0E+02	2.0E+04	45 Days	²¹⁴ Bi	2.0E+03	6.0E+05	19.9 Minutes
⁵⁸ Co	2.0E+03	4.0E+04	71 Days	²¹² Pb	8.0E+01	3.0E+03	10.64 Hours
⁶⁰ Co	8.0E+01	5.0E+03	5.27 Years	²¹⁴ Pb	2.0E+03	2.0E+05	26.8 Minutes
⁶⁵ Zn	6.0E+02	9.0E+03	244 Days	²¹² Po	1.0E+00	8.0E+01	3.1E-7 Seconds
⁸⁵ Kr	3.0E+06	0.0E+00	10.72 Years	²¹⁶ Po	1.0E+00	8.0E+01	0.15 Seconds
⁸⁹ Sr	3.0E+02	2.0E+04	51 Days	²²⁰ Rn	3.0E+03	0.0E+00	55.6 Seconds
⁹⁰ Sr	9.0E+00	1.0E+03	29.12 Years	²²⁴ Ra	4.0E+00	4.0E+02	3.66 Days
⁹⁵ Zr	6.0E+02	4.0E+04	64 Days	²²⁶ Ra	1.0E+00	1.0E+02	1,600 Years
⁹⁵ Nb	3.0E+03	6.0E+04	35 Days	²²⁸ Ac	4.0E+01	6.0E+04	6.13 Hours
⁹⁹ Tc	2.0E+03	1.0E+05	2.13E+5 Years	²³² Th	7.0E-03	5.0E+01	1.41E+10 Years
¹⁰³ Ru	2.0E+03	5.0E+04	39 Days	Total U	1.0E-01	6.0E+02	4.5E+9 Years ^(b)
¹⁰⁶ Ru	3.0E+01	6.0E+03	368 Days	²³⁴ U	9.0E-02	5.0E+02	2.45E+5 Years
¹¹³ Sn	1.0E+03	5.0E+04	115 Days	²³⁵ U	1.0E-01	6.0E+02	7.04E+8 Years
¹²⁴ Sb	6.0E+02	1.0E+04	60 Days	²³⁶ U	1.0E-01	5.0E+02	2.34E+7 Years
¹²⁵ Sb	1.0E+03	5.0E+04	2.7 Years	²³⁸ U	1.0E-01	6.0E+02	4.47E+9 Years
¹²⁹ I	7.0E+01	5.0E+02	1.57E+7 Years	²³⁸ Pu	3.0E-02	4.0E+01	87.7 Years
¹³¹ I	4.0E+02	3.0E+03	8.04 Days	^{239,240} Pu	2.0E-02	3.0E+01	24,131 Years ^(c)
¹³⁴ Cs	2.0E+02	2.0E+03	2.1 Years	²⁴¹ Pu	1.0E+00	2.0E+03	14.4 Years
¹³⁷ Cs	4.0E+02	3.0E+03	30 Years	²⁴¹ Am	2.0E-02	3.0E+01	432 Years
¹⁴¹ Ce	1.0E+03	5.0E+04	32.5 Days	Total alpha	2.0E-02	3.0E+01	N/A
¹⁴⁴ Ce	3.0E+01	7.0E+03	284 Days	Total beta	9.0E+00	1.0E+03	N/A

a - From DOE Order 5400.5

b - The half-life used for Total U is the half-life of ²³⁸U.

c - The half-life used for mixed ^{239,240}Pu is the half-life of ²³⁹Pu.

Table 12-2 Inaccessible Soil Concentration Limits ^(a)(pCi/g)

Radionuclide	100 BDKN	100 F, H	200 W	200 E	300 Area	400 Area
³ H	1.4 E+08	7.4 E+07	3.7 E+08	2.0 E+08	9.5 E+06	1.4 E+07
¹⁴ C	6.2 E+05	6.2 E+05	6.2 E+05	6.2 E+05	6.2 E+05	6.2 E+05
⁵⁵ Fe	9.7 E+06	9.7 E+06	3.6 E+10	1.9 E+10	1.0 E+07	1.4 E+09
⁵⁸ Co	9.8 E+06	9.8 E+06	8.1 E+09	4.3 E+09	1.2 E+07	3.1 E+08
⁶⁰ Co	9.9 E+05	9.9 E+05	5.7 E+08	3.0 E+08	1.0 E+06	9.9 E+06
⁶³ Ni	1.5 E+08	1.5 E+08	6.9 E+09	6.9 E+09	1.5 E+08	2.2 E+08
⁹⁰ Sr*	8.3 E+05	8.3 E+05	2.2 E+08	1.2 E+08	8.3 E+05	8.4 E+06
⁹⁹ Tc	1.3 E+07	1.3 E+07	1.3 E+07	1.3 E+07	1.3 E+07	1.3 E+07
¹⁰⁶ Ru*	2.0 E+07	2.0 E+07	5.7 E+08	3.0 E+08	1.5 E+07	2.2 E+07
¹²⁵ Sb*	9.1 E+06	9.1 E+06	5.7 E+09	3.0 E+09	9.2 E+06	1.1 E+08
¹²⁹ I	2.8 E+05	2.8 E+05	2.8 E+05	2.8 E+05	2.2 E+05	2.8 E+05
¹³⁴ Cs	1.7 E+04	1.7 E+04	2.5 E+08	1.4 E+08	2.4 E+04	9.7 E+06
¹³⁷ Ce*	1.7 E+04	1.7 E+04	3.5 E+08	1.8 E+08	1.7 E+04	1.3 E+07
¹⁴⁴ Cs*	1.4 E+06	1.4 E+06	7.4 E+08	4.0 E+08	1.9 E+06	2.8 E+07
¹⁴⁷ Pm	3.4 E+07	3.4 E+07	7.4 E+09	4.0 E+09	3.5 E+07	2.8 E+08
¹⁵² Eu	4.5 E+06	4.5 E+06	1.2 E+09	6.2 E+08	4.6 E+06	4.5 E+07
¹⁵⁴ Eu	3.3 E+06	3.3 E+06	8.8 E+08	4.7 E+08	3.3 E+06	3.4 E+07
¹⁵⁵ Eu	2.3 E+07	2.3 E+07	6.9 E+09	3.7 E+09	2.4 E+07	2.6 E+08
²²⁶ Ra*	1.3 E+05	1.3 E+05	2.1 E+05	2.1 E+05	1.3 E+05	1.4 E+05
²²⁷ Ac*	2.4 E+03	2.4 E+03	5.4 E+04	2.9 E+04	1.4 E+03	2.1 E+03
²³² Th*	2.0 E+04	2.0 E+04	2.0 E+04	2.0 E+04	4.7 E+03	7.1 E+03
²³² U*	5.5 E+04	5.5 E+04	1.4 E+05	1.4 E+05	9.9 E+03	1.5 E+04
²³³ U	4.5 E+05	4.5 E+05	4.5 E+05	4.5 E+05	6.7 E+04	1.0 E+05
²³⁴ U	4.6 E+05	4.6 E+05	4.6 E+05	4.6 E+05	6.9 E+04	1.0 E+05
²³⁵ U*	4.9 E+05	4.9 E+05	4.9 E+05	4.9 E+05	7.3 E+04	1.1 E+05
²³⁶ U	4.9 E+05	4.9 E+05	4.9 E+05	4.9 E+05	7.1 E+04	1.1 E+05
²³⁸ U*	4.7 E+05	4.7 E+05	4.7 E+05	4.7 E+05	7.7 E+04	1.2 E+05
²³⁷ Np*	8.9 E+02	8.9 E+02	8.9 E+02	8.9 E+02	8.9 E+02	8.9 E+02
²³⁸ Pu	1.3 E+04	1.3 E+04	8.8 E+05	4.7 E+05	1.3 E+04	3.4 E+04
²³⁹ Pu	1.2 E+04	1.2 E+04	1.2 E+04	1.2 E+04	1.2 E+04	1.2 E+04
²⁴⁰ Pu	1.2 E+04	1.2 E+04	1.4 E+04	1.4 E+04	1.2 E+04	1.2 E+04
²⁴¹ Pu	6.1 E+05	6.1 E+05	4.2 E+07	2.2 E+07	6.1 E+05	1.2 E+06
²⁴¹ Am	2.5 E+04	2.5 E+04	7.4 E+05	4.0 E+05	1.9 E+04	2.8 E+04

a - From Table 1, HNF-PRO-454

Note: Asterisks mark nuclides with progeny that are assumed to be present in equilibrium amounts. However, ²³⁴U was not included in the ²³⁸U limits. For supporting references see WHC-SD-EN-TI-070.

Table 12-3 Accessible Soil Concentration Limits^(a) (pCi/g)

Radionuclide	100 BDKN	100 F, H	200 W	200 E	300 Area	400 Area
³ H	1.4 E+08	7.4 E+07	3.7 E+08	2.0 E+08	9.5 E+06	1.4 E+07
¹⁴ C	6.2 E+05	6.2 E+05	6.2 E+05	6.2 E+05	6.2 E+05	6.2 E+05
⁵⁵ Fe	5.3 E+05	5.3 E+05	5.3 E+05	5.3 E+05	5.3 E+05	5.3 E+05
⁵⁸ Co	1.8 E+01	1.8 E+01	1.8 E+01	1.8 E+01	1.8 E+01	1.8 E+01
⁶⁰ Co	7.1 E+00	7.1 E+00	7.1 E+00	7.1 E+00	7.1 E+00	7.1 E+00
⁶³ Ni	2.5 E+07	2.5 E+07	2.5 E+07	2.5 E+07	2.5 E+07	2.5 E+07
⁹⁰ Sr*	2.8 E+03	2.8 E+03	2.8 E+03	2.8 E+03	2.8 E+03	2.8 E+03
⁹⁹ Tc	1.0 E+06	1.0 E+06	1.0 E+06	1.0 E+06	1.0 E+06	1.0 E+06
¹⁰⁶ Ru*	7.7 E+01	7.7 E+01	7.7 E+01	7.7 E+01	7.7 E+01	7.7 E+01
¹²⁵ Sb*	3.7 E+01	3.7 E+01	3.7 E+01	3.7 E+01	3.7 E+01	3.7 E+01
¹²⁹ I	1.0 E+04	1.0 E+04	1.0 E+04	1.0 E+04	1.0 E+04	1.0 E+04
¹³⁴ Cs	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01
¹³⁷ Cs*	3.0 E+01	3.0 E+01	3.0 E+01	3.0 E+01	3.0 E+01	3.0 E+01
¹⁴⁴ Ce*	3.3 E+02	3.3 E+02	3.3 E+02	3.3 E+02	3.3 E+02	3.3 E+02
¹⁴⁷ Pm	1.1 E+06	1.1 E+06	1.1 E+06	1.1 E+06	1.1 E+06	1.1 E+06
¹⁵² Eu	1.5 E+01	1.5 E+01	1.5 E+01	1.5 E+01	1.5 E+01	1.5 E+01
¹⁵⁴ Eu	1.4 E+01	1.4 E+01	1.4 E+01	1.4 E+01	1.4 E+01	1.4 E+01
¹⁵⁵ Eu	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02
²²⁶ Ra*	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01
²²⁷ Ac*	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01
²³² Th*	5.9 E+00	5.9 E+00	5.9 E+00	5.9 E+00	5.9 E+00	5.9 E+00
²³² U*	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01	1.0 E+01
²³³ U	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02
²³⁴ U	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02	6.3 E+02
²³⁵ U*	1.7 E+02	1.7 E+02	1.7 E+02	1.7 E+02	1.7 E+02	1.7 E+02
²³⁶ U	6.7 E+02	6.7 E+02	6.7 E+02	6.7 E+02	6.7 E+02	6.7 E+02
²³⁸ U*	3.7 E+02	3.7 E+02	3.7 E+02	3.7 E+02	3.7 E+02	3.7 E+02
²³⁷ Np*	4.8 E+01	4.8 E+01	4.8 E+01	4.8 E+01	4.8 E+01	4.8 E+01
²³⁸ Pu	2.1 E+02	2.1 E+02	2.1 E+02	2.1 E+02	2.1 E+02	2.1 E+02
²³⁹ Pu	1.9 E+02	1.9 E+02	1.9 E+02	1.9 E+02	1.9 E+02	1.9 E+02
²⁴⁰ Pu	1.9 E+02	1.9 E+02	1.9 E+02	1.9 E+02	1.9 E+02	1.9 E+02
²⁴¹ Pu	1.0 E+04	1.0 E+04	1.0 E+04	1.0 E+04	1.0 E+04	1.0 E+04
²⁴¹ Am	1.8 E+02	1.8 E+02	1.8 E+02	1.8 E+02	1.8 E+02	1.8 E+02

a - From Table 1, HNF-PRO-454

Note: Asterisks mark nuclides with progeny that are assumed to be present in equilibrium amounts. However, ²³⁴U was not included in the ²³⁸U limits. For supporting references see WHC-SD-EN-TI-070.

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13.0 DATA SUMMARY METHODS

Measuring any physical quantity has some degree of inherent uncertainty. This uncertainty results from the combination of all possible inaccuracies in the measurements process, including such factors as the reading of the result, the calibration of the measuring device, and numerical rounding errors. In this report, individual radioactive measurements are accompanied by a plus or minus ($\pm$) value, which is the uncertainty term known as a two-sigma counting error.

The two-sigma counting error gives information on what the measurement might be if the same sample were counted again under identical conditions. The two-sigma counting error implies that approximately 95% of the time, a recount of the same sample would give a value within plus or minus the two-sigma counting error at the value reported.

Values in the tables that are less than the minimum detectable activity indicate that the reported result might have come from a sample with no measurable radioactivity. Such values are considered below the detection limits of the measuring instrument. Also note that each radioactive measurement must have the random background radioactivity of the measuring instrument subtracted; therefore, negative results are possible, especially when the sample has very little radioactivity.

Reported averages also are accompanied by two standard errors of the mean. If the data fluctuate randomly, the standard error is a measure of the uncertainty in the estimated average of the data because of this randomness. If trends of periodic fluctuation are present, the standard error is primarily a measure of the variability in the trends and fluctuations about the average of the data, rather than a measure of the uncertainty of the estimated average because of random fluctuations in the data.

The mean, $\bar{X}$, is computed as:

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$$

where X_i is the i th measurement and n is the number of measurements.

The standard error of the mean was computed as:

$$SE = \sqrt{\frac{S^2}{n}}$$

where S^2 , the variance of the n measurements, was computed as:

$$S^2_M = \frac{1}{n-1} \sum_{i=1}^n (X_i - \bar{X})^2$$

This estimator, S^2 , includes the variance among the samples and the counting variance. The estimated S^2 occasionally may be less than the average counting variance.

14.0 REFERENCES

- 10 CFR 835, "Occupational Radiation Protection," *Code of Federal Regulations*, as amended.
- 40 CFR 61, Subpart H, "National Emissions Standards for Hazardous Air Pollutants," *Code of Federal Regulations*, as amended.
- 40 CFR 162, "State Registration of Pesticide Products," *Code of Federal Regulations*, as amended.
- 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities," *Code of Federal Regulations*, as amended.
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