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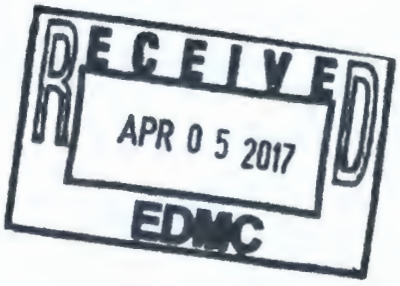
HNF-SP-0665
Revision 71

Quarterly Environmental Radiological Survey Summary

Fourth Quarter 2008
100, 200, 300, and 600 Areas



Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under contract DE-AC06-96RL13200

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Quarterly Environmental Radiological Survey Summary Fourth Quarter 2008 100, 200, 300, and 600 Areas

Document Type: RPT

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Date Published
January 2009

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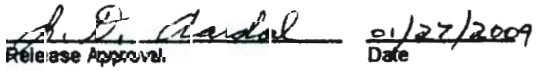
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QUARTERLY ENVIRONMENTAL RADIOLOGICAL SURVEY SUMMARY FOURTH QUARTER 2008 - 100, 200, 300, AND 600 AREAS

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EXECUTIVE SUMMARY

This report provides a summary of the radiological surveys performed in support of near-facility environmental monitoring at the Hanford Site during the fourth quarter of 2008 and calendar year (CY) 2008. The survey results and the status of actions required are summarized below. During the fourth quarter of CY 2008:

- Eighty-seven routine environmental radiological surveys scheduled during October, November, and December were performed as planned.

- Two scheduled surveys were conducted at Fluor Hanford, Inc. (FH) managed sites, 16 at Tank Operations Contract (TOC) sites and 69 at Plateau Remediation Contract sites (PRC).

- Scheduled radiological surveys found contamination at 12 of the waste sites and non-scheduled surveys found contamination at 30 additional sites. Contamination above background levels was found at 22 of the PRC sites, 17 of the TOC sites, 2 River Protection Project sites (RPP), and 1 of the FH sites. Contamination levels were detected as high as >1,000,000 disintegrations per minute (dpm) per 100 cm^2 beta/gamma. Of these contaminated sites, 1 was located in an unposted area, 1 was in a radiological buffer area (RBA), 1 was in a radiologically controlled area (RCA), 38 were found in underground radioactive materials areas (URMA), and 1 was in a radioactive materials area (RMA). All of the contamination was removed for proper disposal with the exception of one found in a RCA, one found in an RBA, one found in an RMA, and five found in an URMA which were posted to meet the requirements in the PHMC Radiological Control Manual, HNF-5173.

Of the 42 contamination incidents discovered, 7 were caused by animal related material (rabbit feces, deer mouse, snake), 28 were caused by vegetation uptake, 2 were from soil/specks, and 5 were from other miscellaneous items (lowboy trailer, RR rails, SCA PAC bottle, etc.).

- One waste site was down posted during the fourth quarter of CY 2008.

- No new waste sites were identified for inclusion into the Waste Information Data System (WIDS) during the fourth quarter of CY 2008.

Biological Control Program accomplishments for the fourth quarter of 2008 include:

- 749 hectares (1,852 acres) of Hanford land were treated with herbicides.
- 13 hectares (33 acres) of the noxious weeds were treated with the application of herbicides in the fourth quarter of 2008.
- 29 waste sites were evaluated for herbicide effect on the target vegetation.
- 6,839 pest control responses were conducted for Hanford Site facilities.
- 2,115 animal control devices were placed at Hanford operation areas and facilities.
- 25.5 non-regulated compactor truckloads of tumbleweeds were taken to the 200-W burn pit for disposal. (1-compactor truckload $\cong$ 11,000 ft^3 of uncompacted tumbleweeds.)
- Three regulated compactor truckloads were taken to the Environmental Restoration Disposal Facility (ERDF) for disposal. These tumbleweeds are collected out of a contamination area (CA) most of which have blown in, but are required to be treated as though they are contaminated.

The survey results and accomplishments for CY 2008 are summarized below:

- During CY 2008, 473 scheduled radiological surveys were performed. Contamination was found in 189 of the waste sites surveyed, 5 in a contamination area/soil contamination area (CA/SCA), 144 in a URMA, 31 in a RCA/RMA, 3 in a RBA, and 6 in unposted areas.

- The number of incidents of contaminated animals/insects observed during 2008 (30) was similar to the average/typical of those reported during the last The majority of the contaminated animal/insect incidents in 2008 were due primarily to rabbit/mice activity.

- The number of vegetation incidents in 2008 (127) was the highest seen to date. An assessment of the biological control program conducted during 2006 concluded that the vegetation had developed a chemical resistance from the usage of the same herbicide over a period of years. A program to rotate the herbicides used to control the deep rooted vegetation was developed and implemented during 2007 and continued through 2008.

- Remediation activities in the 100 and 600 Areas have resulted in the release from posting of 5.6 hectares (14 acres). Waste sites receiving interim closure by the River Corridor Project during CY 2008 include the118-F-1 Solid Waste Burial Ground, the 118-B-1 Solid Waste Burial Ground, 118-F-2 Solid Waste Burial Ground, 118-F-5 Sawdust Pit Mixed Animal Waste, 118-F-6 PNL Solid Waste Burial Ground, and the UN-616-16 P-11 Fire Contamination Spread.

- Eight waste disposal cells have been excavated in ERDF. The contract for the construction of cells 7 and 8 was awarded in December 2007. The new expansion is scheduled to be completed by December 2009 and the ERDF will have a capacity of over 11,000,000 tons of waste from decommissioning activities in the 100, 200, 300, and 600 Areas.

Biological Control program accomplishments during CY 2008 included:

- 2,215 hectares (5,473 acres) of Hanford land were treated with herbicides.

- 21 hectares (52 acres) were treated for noxious weed control.

- There were 32,868 pest control responses for Hanford Site facilities.

- 125 hectares (309 acres) of waste transfer lines in the 200-East and 200-West Areas were mowed.

- 179 non-regulated compactor truckloads of tumbleweeds were taken to the 200-W burn pit for disposal.

- 10 regulated compactor truckloads of contaminated tumbleweeds were removed for disposal. 7 went to Permafix NW (formerly PEcoS) and 3 were disposed of in ERDF.

Below is a ranking of the top ten contaminated waste sites in order of the highest priority for contamination control. Rankings are based on levels and types of contamination, proximity to human occupied or utilized areas, and the history or potential to spread contamination. The prioritization system and rankings are described on page 13 of this report.

TOP TEN PRIORITY RANKING FOR CONTAMINATED WASTE SITES

Waste Site	Custodian	Levels	Location	Mobility	Total
218-E-12A Burial Ground	CHPRC	4	3	5	12
218-E-12B Burial Ground	CHPRC	4	3	5	12
216-BC Cribs/Control Area	CHPRC	4	3	5	12
216-U-10 Pond	CHPRC	4	3	5	12
241-B Tank Farm	CHPRC	5	1	5	11
241-SX/SY Tank Farm	WRPS	5	1	5	11
241-BX/BY Tank Farm	WRPS	4	2	5	11
241-C Tank Farm	WRPS	4	2	5	11
241-S Tank Farm	WRPS	4	2	5	11
216-U-11 Pond	CHPRC	4	2	5	11

CH2M Hill Plateau Remediation Company = CHPRC
Washington River Protection Solutions, LLC = WRPS

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1.0 INTRODUCTION

Routine radiological surveys are an integral part of near-facility environmental monitoring, for tracking facility and waste site status, and to aid in directing the reduction of the radiological areas at the Hanford Site. The River Corridor Contract, Plateau Remediation Contract, and the Project Hanford Management Contract Radiological Control Groups perform the routine radiological surveys.

The surveys are performed at inactive waste sites; outdoor radiological control areas; tank farm perimeters; diversion boxes; lift stations; vent stations; perimeters of active or uncovered waste sites such as burial grounds, retention basins, ponds, process trenches, and ditches; underground pipelines; and road and rail surfaces (see Figures 1 through 10).

This report summarizes the radiological surveys performed in support of near-facility environmental monitoring at the Hanford Site during the fourth quarter of 2008 and Calendar Year (CY) 2008. The survey results and the status of actions required are also discussed.

Complete surveillance coverage was assured by completing a waste site survey schedule, *Routine Environmental Monitoring Schedule, Calendar Year 2008* (HNF-SP-0098-19). Environmental Monitoring and Investigations (EM&I) personnel working with the site Radiological Control Groups developed the schedule. EM&I personnel review the radiological survey reports and file a copy for summarizing in the site annual environmental report, for historical purposes, and for reference. Radiological conditions are tracked and trends noted for use by the facility managers and landlords.

All known radioactive waste sites are surveyed at least once each year. Newly discovered radioactive waste sites/unplanned release sites are added to the schedule as necessary. The survey frequencies for particular sites are based on its history, radiological conditions, and general maintenance. Special surveys may be conducted at irregular frequencies if conditions warrant (i.e., growth of deep-rooted vegetation is noted at a waste site). Radiological surveys are conducted to detect surface contamination and document changes in vegetation growth, biological intrusion, erosion, and site maintenance conditions. Survey data are compared with standards identified in *PHMC Radiological Control Manual* (HNF-5173), as well as previous surveys to determine trends, assess environmental impact, and allow determination of where corrective actions are needed.

The Occurrence Reporting System is used to track legacy radioactive contamination greater than 10 times the total contamination values in 10 CFR Part 835, Appendix D and that is found outside a posted Contamination Area, High Contamination Area, Airborne Radioactivity Areas, Radiological Buffer Areas, and areas controlled in accordance with 10 CFR 835.1102(c).

These radiological surveys are conducted to determine surface radiological conditions and do not constitute a release survey. Therefore, surveys that detect no contamination in radiological areas do not release the site from control, but may result in a posting status change. Surveillance of the active nuclear facilities and the areas inside the tank farm fences is the responsibility of the individual facility landlord.

Figure 1. 100-B/C Area.

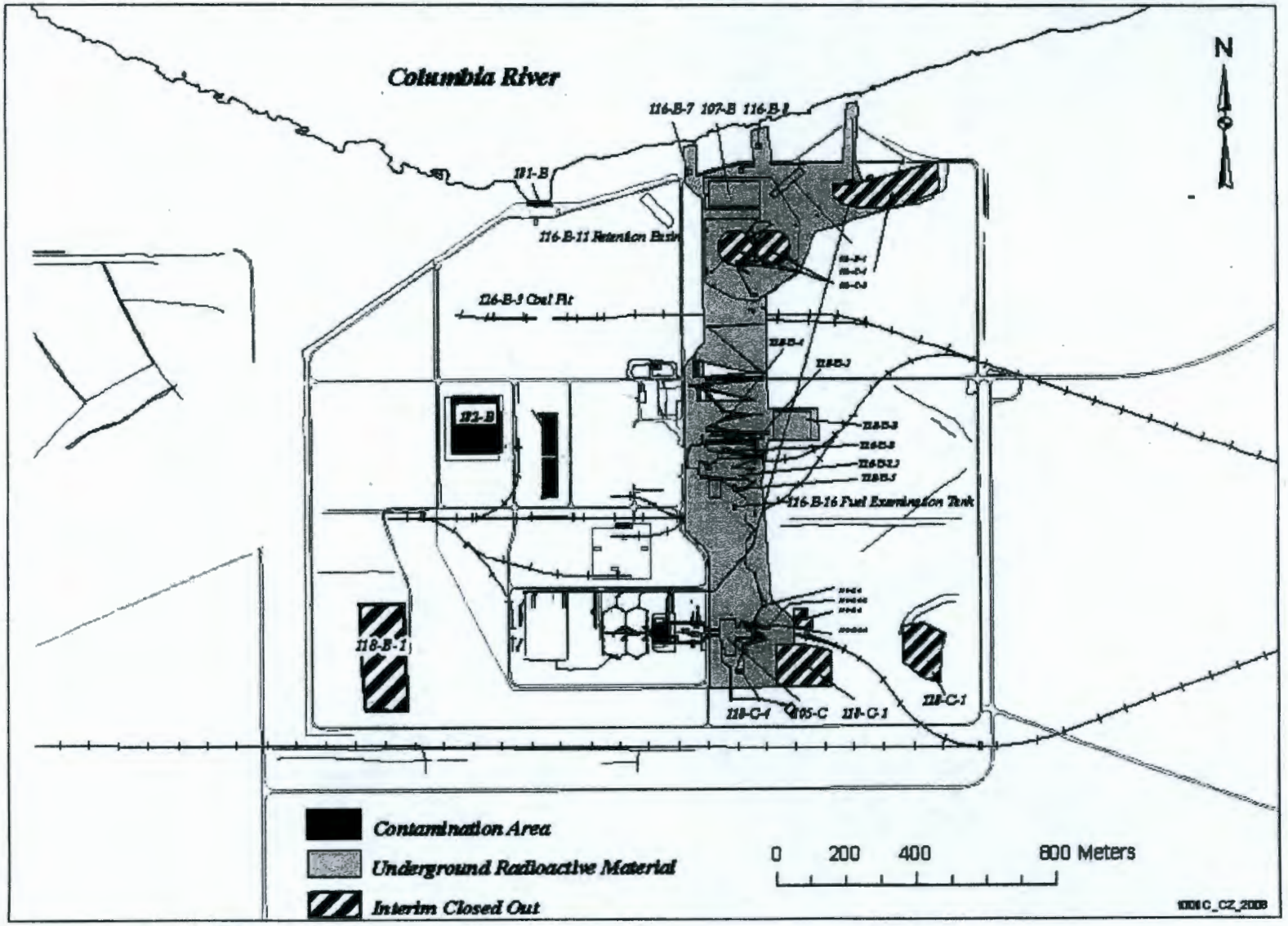


Figure 2. 100-D/DR Area.

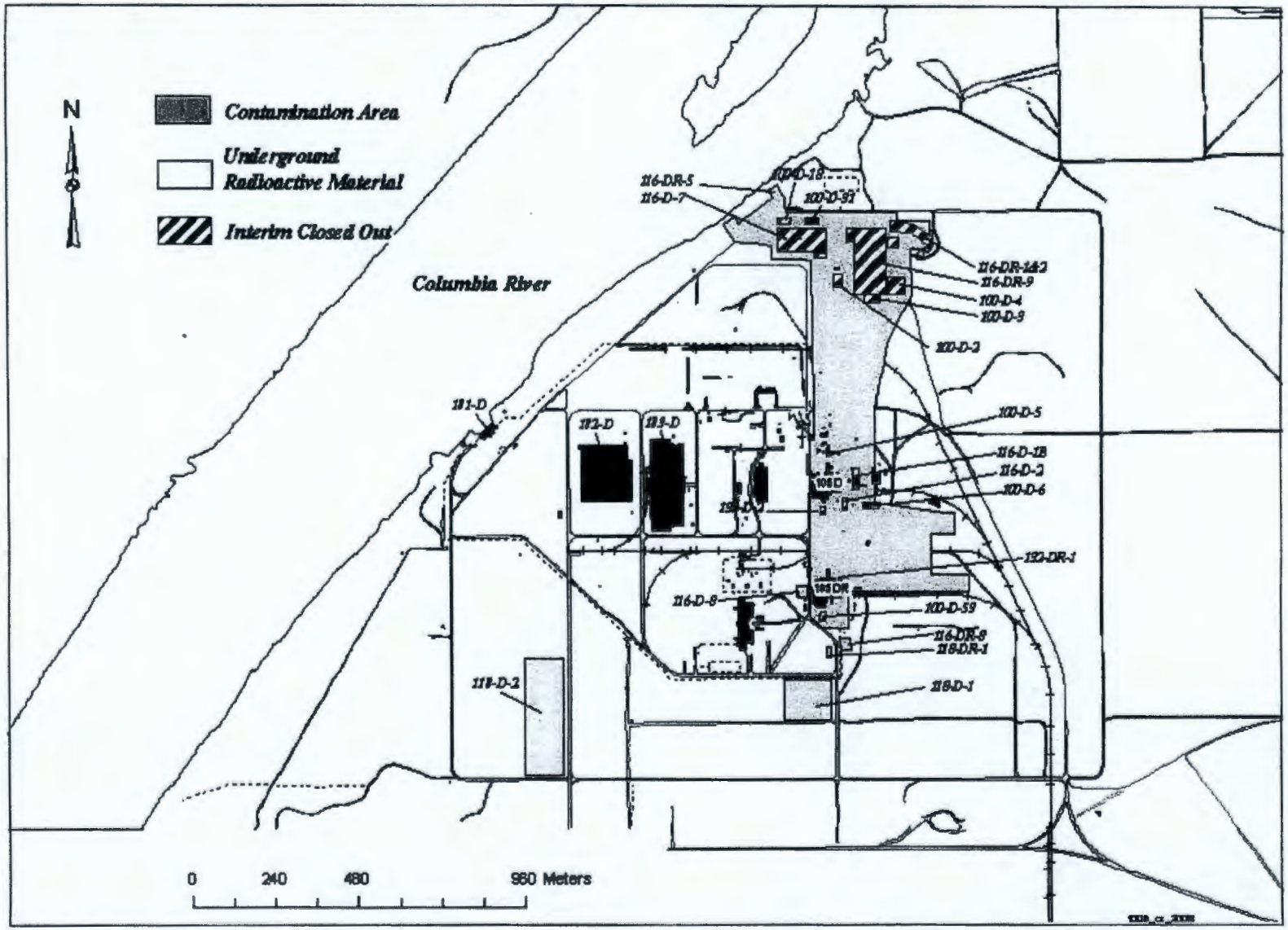


Figure 3. 100-F Area.

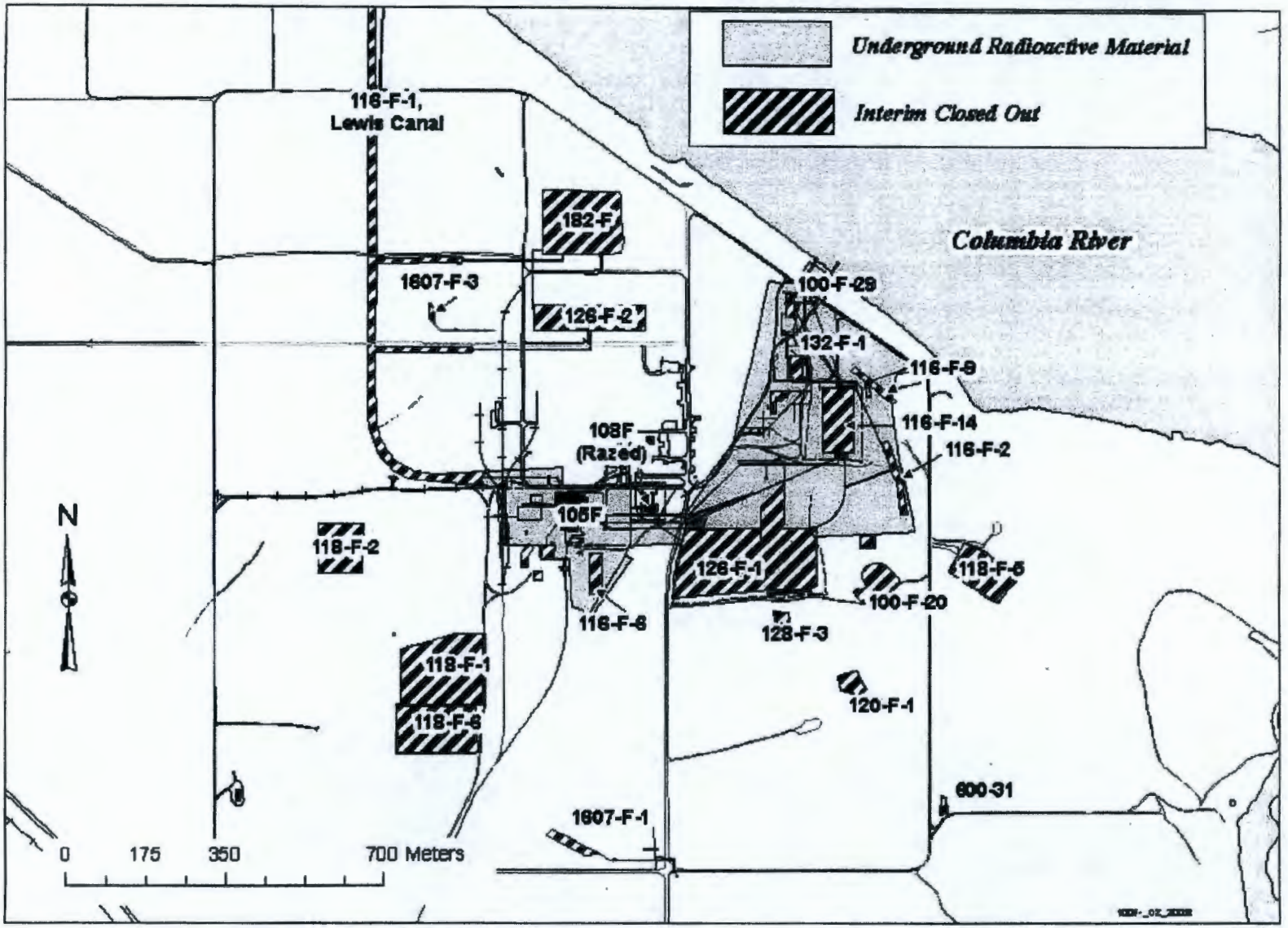


Figure 4. 100-H Area.

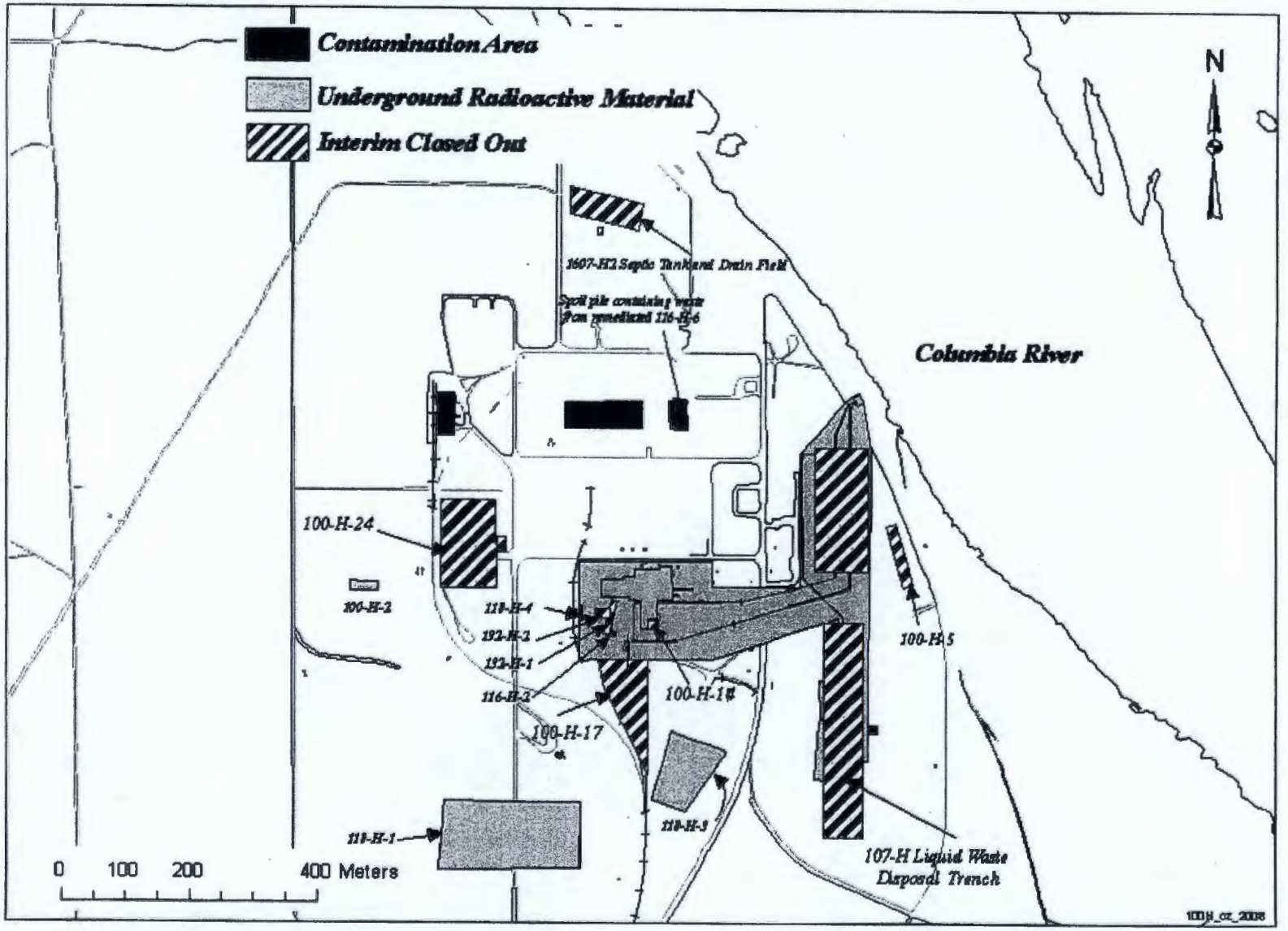


Figure 5. 100-K Area.

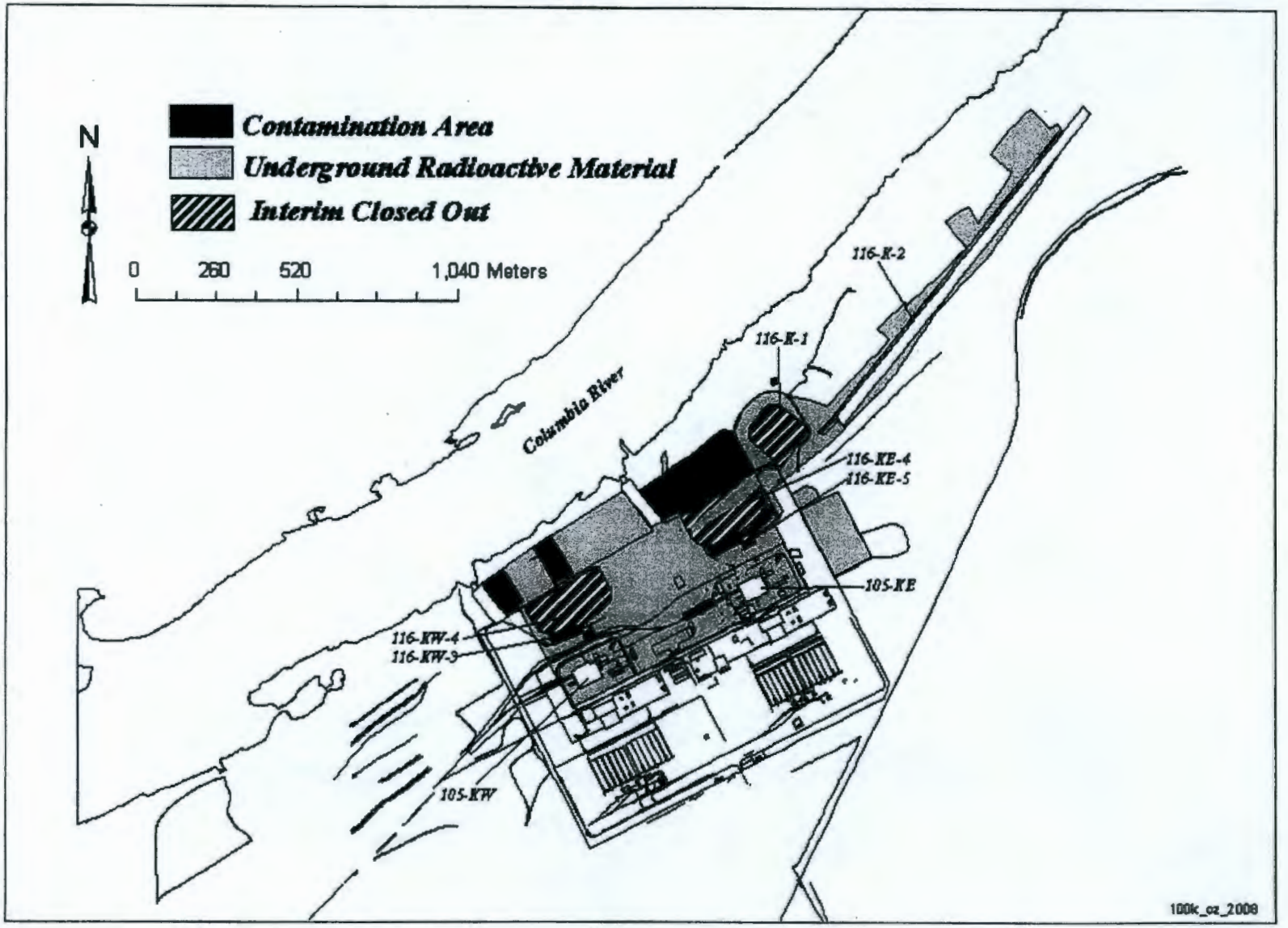


Figure 6. 100-N Area.

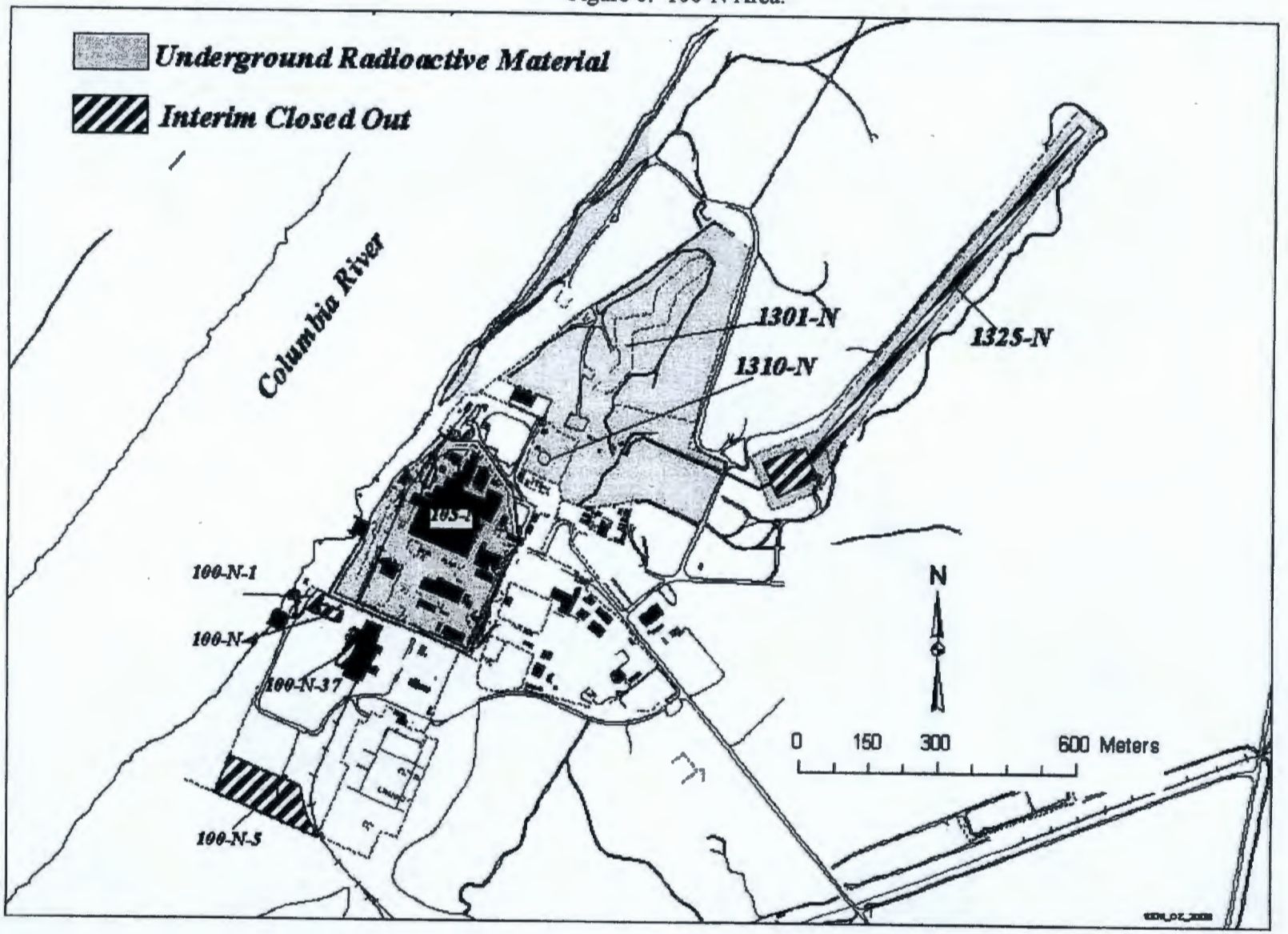


Figure 7. 200 East Area.

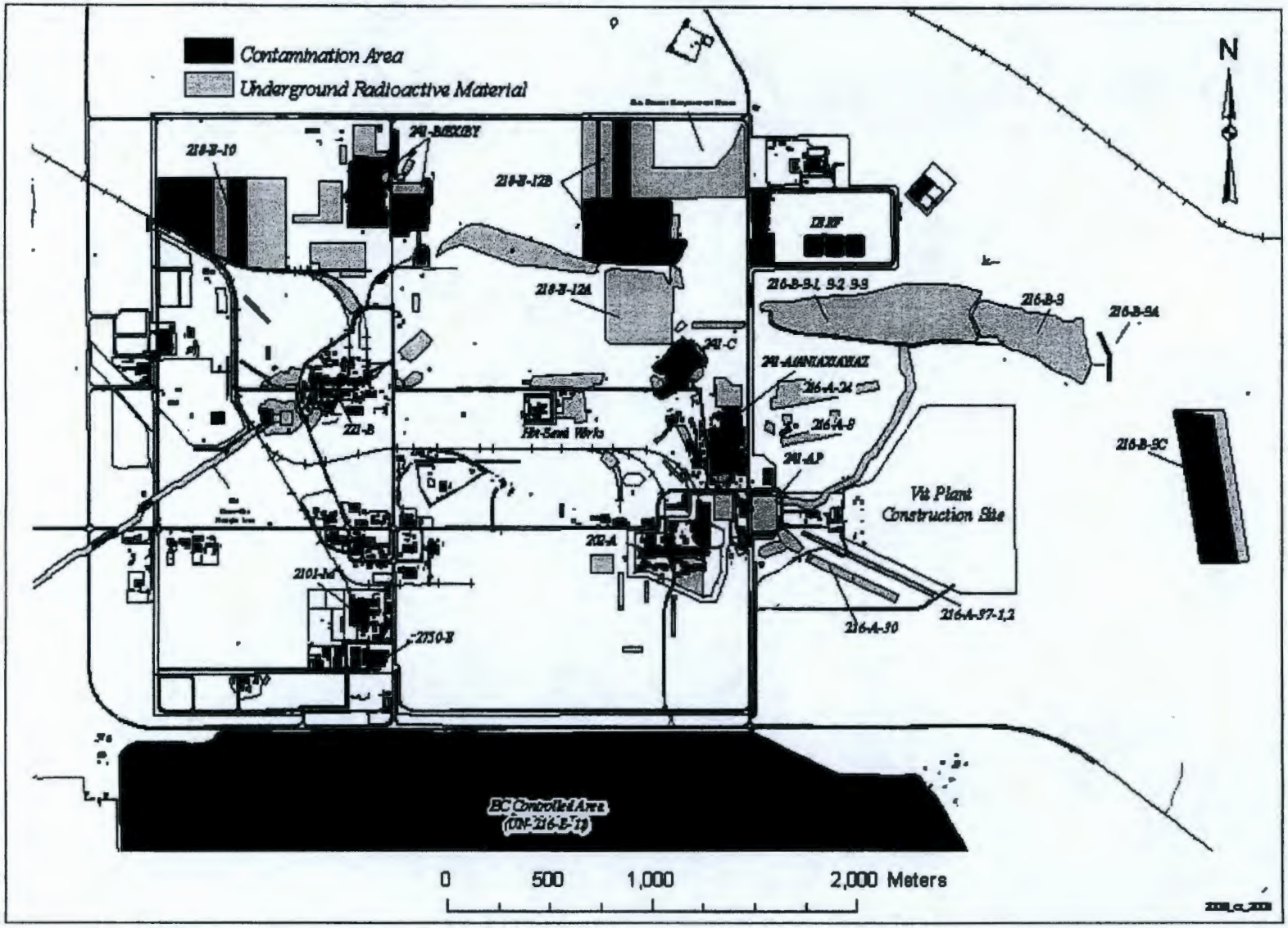


Figure 8. 200 West Area.

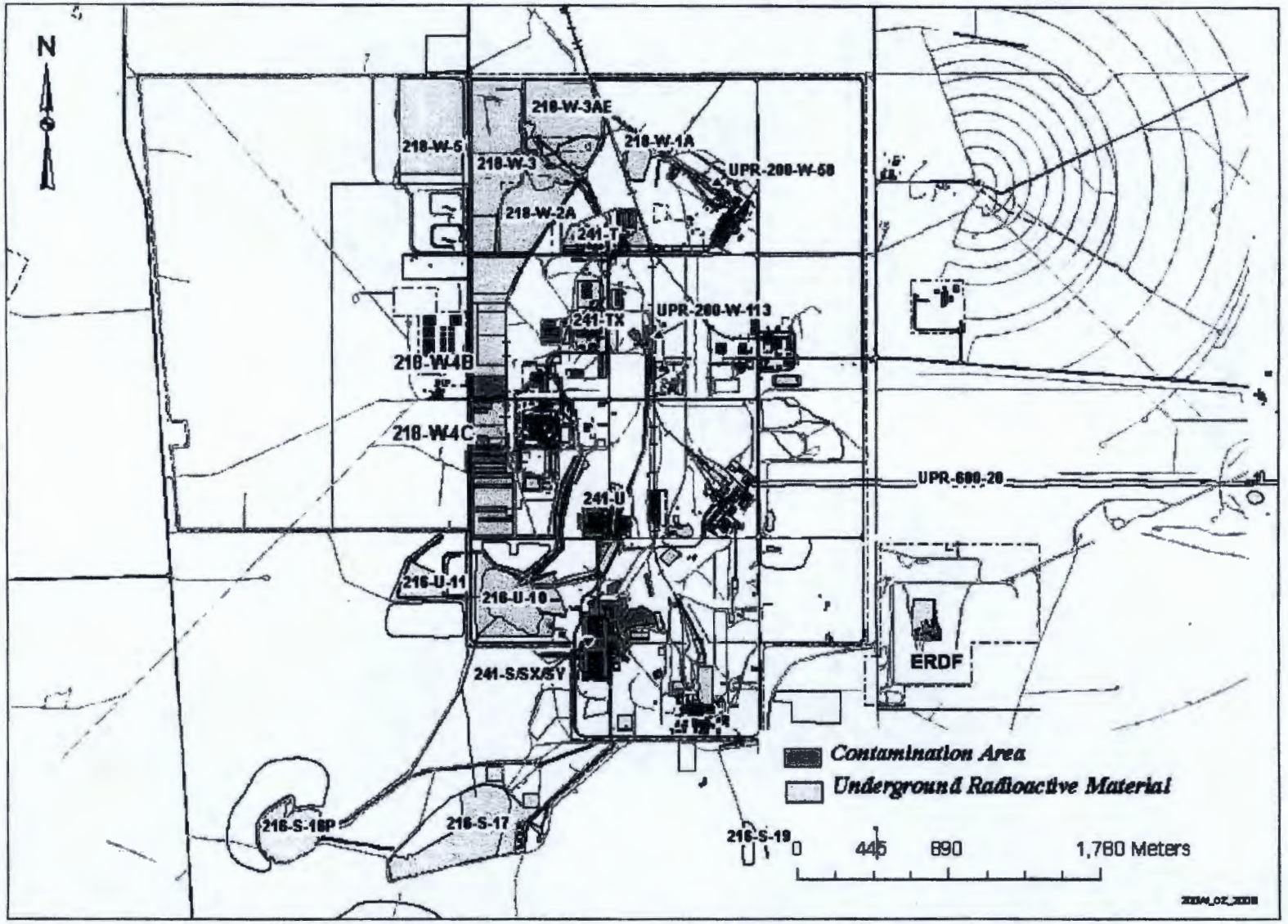


Figure 9. 300 Area.

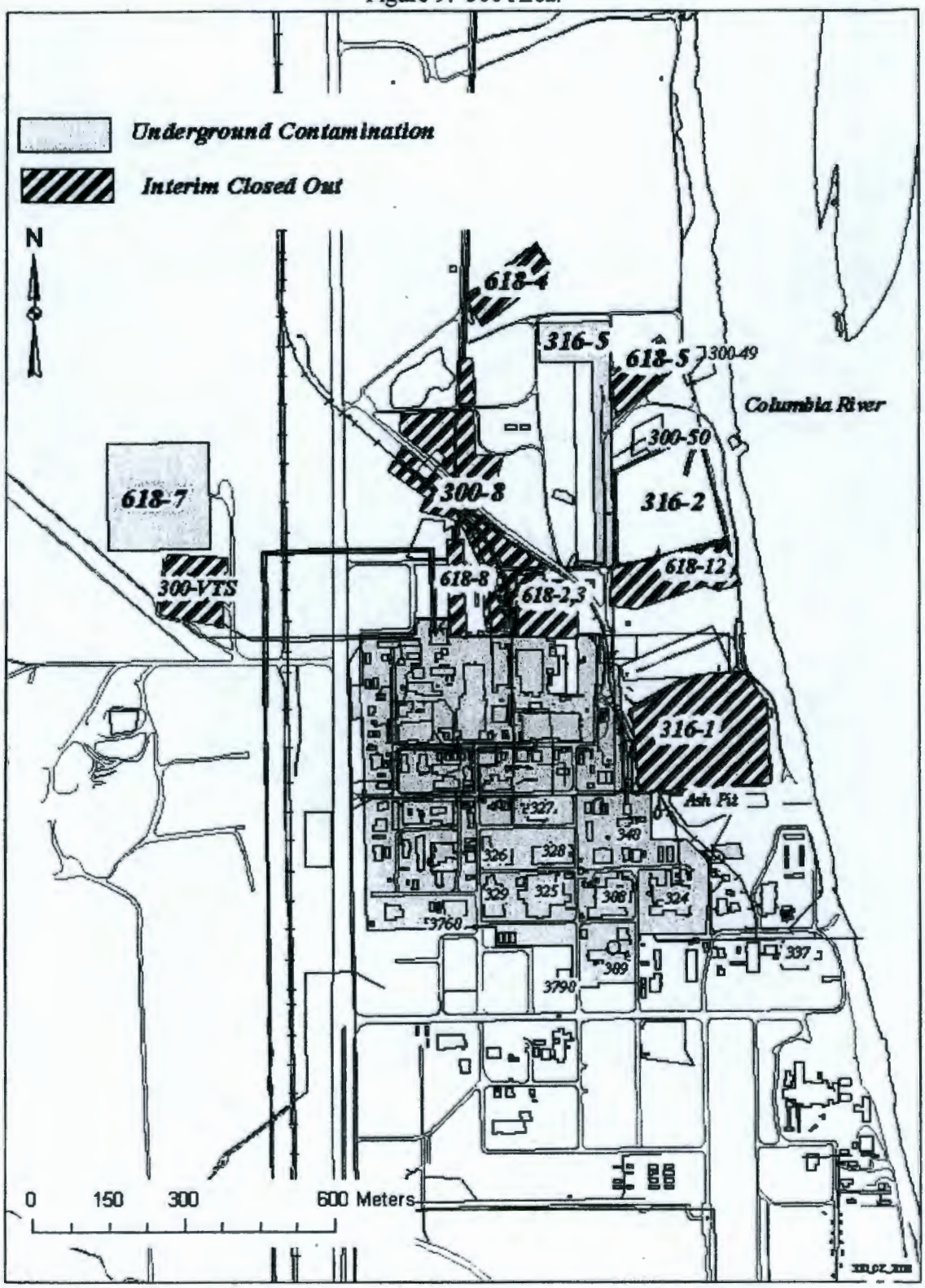
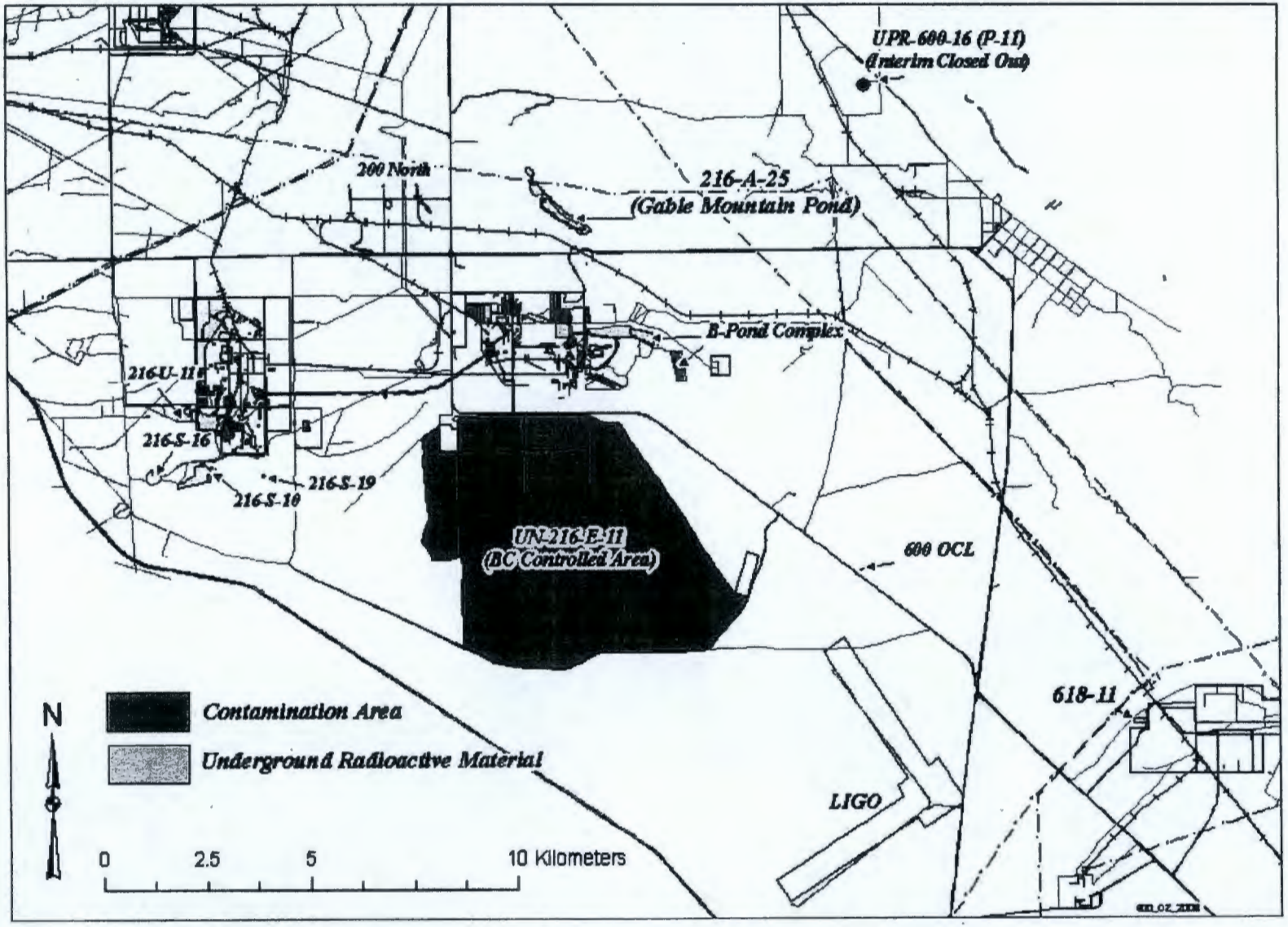


Figure 10. 600 Area.



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2.0 PROGRAM DESCRIPTION

2.1 ENVIRONMENTAL RADIOLOGICAL SURVEY OBJECTIVES

Radiological surveys are conducted to determine whether there have been changes in the radiological status of the 100, 200, 300, and 600 Areas outdoor radioactive waste sites. These sites include surface water disposal units, cribs, trenches, burial grounds, tank farm and diversion box perimeters, and reverse wells. The *Routine Environmental Monitoring Schedule, Calendar Year 2008*, WHC-SP-0098-19 (McKinney 2007), lists the waste sites and the survey frequency. Identifying trends in radiation levels or radiological contamination aids in assessing the adequacy of waste containment by detecting the movement of radioactive material away from radiological control areas, or by detecting releases that might otherwise go unrecognized. When activity is detected, a thorough survey is performed using a portable count rate meter equipped with a thin-window, pancake-type probe. The appropriate facility manager or landlord is notified if contamination is identified and the responsible manager initiates corrective actions.

2.2 PRIORITY RANKING SYSTEM

A numerical ranking system is used for categorizing contaminated waste sites relative to environmental radiological concerns. This system provides a priority guideline to responsible landlords for clean up or interim stabilization of waste sites.

The history of each waste site, level and type of contamination, site accessibility and size, and contamination mobility, are all used as a basis for review. A numerical value is assigned to each site based on this review. There is a maximum of 15 points possible with this ranking system.

Contamination levels ranging from 1,000 disintegrations per minute (dpm) to greater than 10 mrad/hr (as measured on field survey instruments) are considered and assigned a numerical value of one (lowest value) to five (greatest value). Any removable alpha contamination is considered a high priority and automatically receives a rank value of five.

The location is evaluated for accessibility. A restricted site in a remote area would receive the lowest point value of one. They would progress up to a value of five where the public may have access.

Mobility scoring is based on contamination that can be or has a history of being transported from where it was originally identified to places outside of the posted radiological area. Fixed contamination would receive a value of one. Contamination that can potentially be blown by the wind or migrate through biological uptake would receive a value of five.

It should be noted that this system is not intended to be a total qualitative or quantitative risk assessment, but rather a way of communicating environmental significance to the landlord and respective program office. Before a site is designated for remediation, other elements of the site clean-up process are also considered such as costs, location, public/regulatory interest, risk assessments, and engineering strategies.

2.3 ENVIRONMENTAL STANDARDS

Radiological survey data are used to determine compliance of Radioactive Waste Sites with *Effluent and Environmental Monitoring* (HNF-PRO-15334), and *Environmental Protection Requirements* (HNF-RD-15332), for Fluor Hanford, Inc. (FH) and CH2M HILL Hanford Group, Inc. (CH2M HILL) managed sites. During the fourth quarter of 2008, Washington River Protection Solutions, LLC (WPRS) assumed the work performed by CH2M HILL and CH2M HILL Plateau Remediation Contract (CHPRC) assumed portions of the work that was being performed by (FH). Compliance requirements for Washington Closure Hanford, LLC (WCH) managed sites are provided in Chapter 1.9, Environmental Monitoring & Management (ENV-1).

In order to compare field instrument values with the standards listed in the *PHMC Radiological Control Manual* (HNF-5173), a conversion factor is necessary. This conversion factor has been established using a Geiger-Mueller detector with a pancake type probe where 20,000 dpm (2,000 counts per minute [cpm]) are approximately equivalent to 1 millirem per hour for beta-emitting radionuclides as indicated in *Evaluation of Beta Energy (E max) and Spectral Type Using Survey Instruments* (UCRL-88275). It should be understood that converting field instrument values, which include both beta and gamma energies, is approximate for field reporting purposes and does not allow for absolute precision.

2.4 SURVEY METHODS AND PROCEDURES

Surveys documented in this report include road surfaces, railroads and sidings, cribs, underground pipelines, stabilized burial grounds, covered ponds and ditches, tank farm perimeters, active burial ground perimeters, unplanned release sites and other radiological areas. Methods and procedures for these surveys can be found in *Operational Environmental Monitoring* (FSWO-OEM-001); *PHMC Radiological Control Manual* (HNF-5173); *D & D Radiation Protection Procedures* (HNF-IP-1277); and *Environmental Monitoring & Management* (ENV-1).

Waste sites and other radiological areas are surveyed with portable field instruments. The portable field instrument survey results are reported in dpm per 100 cm^2 (using an efficiency correction factor of 10 dpm/cpm and six probe areas/100 cm^2) as detected by using a Geiger-Mueller detector for beta/gamma radiation equipped with a pancake type probe. Alpha survey results are reported in dpm/100 cm^2 (using a correction factor of 7 dpm/cpm and two probe areas/100 cm^2) as measured with a portable alpha meter (PAM). Surveys include the perimeter and portions of the ground surface of radiological areas. Wherever possible, smear surveys are made on the surface of exposed equipment and other hard surfaces within a radiological area.

Vegetation, animal burrows, and animal feces are also monitored to detect biological transport.

3.0 RADIOLOGICAL SURVEY SUMMARY

Eighty-seven of the scheduled routine environmental radiological surveys were completed during the fourth quarter of CY 2008. The River Corridor Closure Project completed all of their scheduled radiological surveys during the third quarter of 2008.

Routine surveys found contamination above background levels at 12 of the surveyed sites. Non-scheduled radiological surveys found 30 additional incidents of contamination discovered outside posted contamination areas. Contamination levels ranging from a low of <6,000 dpm/100 cm^2 to a high of >1,000,000 dpm/100 cm^2 beta/gamma were reported. The contamination was found at 1 of the FH sites, 22 of the Plateau Remediation Contract (PRC) sites, 17 of the Tank Operations Contract (TOC) sites, and 2 of the River Protection Project (RPP) sites. Of the 42 incidents of contamination found, 38 were located in a underground radioactive materials area (URMA), 1 was inside a radioactive material area (RMA), 1 was inside a radiologically controlled area (RCA), 1 was inside an unposted area, and 1 was located in a radiological buffer area (RBA).

The contamination found was immediately cleaned up and no further action was required with the exception of five in a URMA, one in a RBA, one in a RCA, and one RMA, which were posted to meet the requirements of HNF-5173.

The radiologically contaminated areas are posted to meet the requirements as outlined in the *PHMC Radiological Control Manual*, (HNF-5173). The posting includes the following categories *High Contamination* (activity >100,000 dpm/100 cm^2 β/γ and/or >2,000 dpm/100 cm^2 α), *Contamination, Soil Contamination, Underground Radioactive Material, Radiological Buffer, and Radiation/High Radiation* areas. For continuity between quarterly reports, the use of the term, "Contamination Areas" (CA), in this report includes High Contamination, Contamination, and Soil Contamination Areas categories/designations. URMA, RBA, RCA, and Radiation/High Radiation areas are referred to when required.

3.1 FOURTH QUARTER RADIOLOGICAL SURVEY SUMMARY

During the fourth quarter of 2008, one waste site, UPR-600-16, was interim closed and released from posting. No new waste sites were discovered during this period.

The Environmental Restoration Disposal Facility (ERDF) continued to receive waste from remediation activities in the 100, 200, 300, and 600 Areas. To date, 120 hectares (296 acres) have been remediated and released from posting along the river corridor, which includes 98 hectares (242 acres) in the 100 Areas and 22 hectares (54 acres) in the 300 Areas.

While conducting radiological surveys, contaminated media were encountered and collected for analysis and/or disposal. Media found above actions levels defined in the *PHMC Radiological Control Manual* (HNF-5173), are documented with a Radiological Problem Report and/or an Occurrence Report. Table 1 summarizes the contamination found, location, survey document, and the corresponding field readings up through December 31, 2008.

Table 1 Contamination Incidents CY 2008. (5 Sheets)

SAMPLE NUMBER	DATE	DESCRIPTION	LOCATION	DOCUMENT	FIELD READING (Beta/Gamma)
N/A	01/15/08	C-Clamp & Welding Leads	Conex Box CC1K0519 @ 100-K	PHMC-GENERAL-2008-0002	120,000 dpm/100cm^2
N/A	01/16/08	Tumbleweed	Between 222-S & REDOX	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	01/17/08	Mouse	Inside 224-U	DAR 01/17/2008	1,500 dpm/100cm^2
N/A	01/22/08	Tumbleweeds	Inside Perimeter Fence @ 16th and Dayton St,	DAR 01/122/2008	36,000 dpm/100cm^2
N/A	01/23/08	Tumbleweeds	Corner of 16th & Dayton St	DAR 01/23/2008	36,000 dpm/100cm^2
N/A	01/23/08	Tumbleweeds (8)	On top of 216-A-34 Crib	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	01/24/08	Speck	At RMA-028 @ 241-C Tank Farm	BCPSR 01/26/2008	15,000 dpm/100cm^2
N/A	01/24/08	Tumbleweeds	Outside the intersection of 16th & Dayton St	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	01/25/08	Tumbleweeds	Outside the Perimeter Fence at 16th & Dayton St	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	01/31/08	Speck	Outside the Perimeter Fence 241-SX Tank Farm	PHMC-GENERAL-2008-0004	149,000 dpm/100cm^2
N/A	02/01/08	Mouse Feces	Outside 209-E Gate (Hot Semiworks)	CH2M-PER-2008-0260	3,000 dpm/100cm^2
N/A	02/04/08	Tumbleweed	Outside 241-BX Tank Farm Perimeter Fence	PHMC-GENERAL-2008-0004	54,000 dpm/100cm^2
N/A	02/05/08	Compaction Whacker #65402634	2711-E Shop (had been inside 241-C)	RPR-CS&I-09-005	1,000 dpm/100cm^2
N/A	02/09/08	Tumbleweeds	221-Z Plant PFP Entrance	SS-276193	20,000 dpm/100cm^2
N/A	02/09/08	Tumbleweeds	Outside 241-U Tank Farm	SS-276193	48,000 dpm/100cm^2
N/A	02/09/08	Tumbleweeds (3)	East Side of 284-W Powerhouse	SS-276193	18,000 dpm/100cm^2
N/A	02/11/08	Rabbit Feces	Between 242-A Evaporator and 241-A Tank Farm	CH2M-PER-2008-0325	20,000 dpm/100cm^2
N/A	02/11/08	Tumbleweed	Along Buffalo Ave. West of 241-A/AX /AZ Tank Farms	RPR-CS&I-08-007	30,000 dpm/100cm^2
N/A	02/12/08	Tumbleweeds (3)	Outside the PFP Perimeter Fence	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	02/19/08	Tumbleweeds (2)	On top of the 218-E-12A Burial Ground	PHMC-GENERAL-2008-0004	120,000 dpm/100cm^2
N/A	02/20/08	Bunch Grass	On top of the 218-E-12A Burial Ground	PHMC-GENERAL-2008-0004	5,400,000 dpm/100cm^2
N/A	02/21/08	Tumbleweeds	UPR-200-W-38 on Backside of 221-T	PHMC-GENERAL-2008-0004	4,200,000 dpm/100cm^2
N/A	02/21/08	Tumbleweeds (20)	On top of the 218-E-12A Burial Ground	PHMC-GENERAL-2008-0004	3,900,000 dpm/100cm^2
N/A	02/22/08	Grass Root Balls/Sod Material	UPR-600-20 between Rt 4S and 200-E Fuel Station	SS-276525	120,000 dpm/100cm^2
N/A	02/25/08	Soil	16 sq ft Area inside the 216-BC Cribs	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	02/26/08	Tumbleweeds (10)	inside a 20 X 10 ft area inside the 216-BC Cribs	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	02/27/08	Tumbleweeds (10)	10 X 10 ft area around a well inside the 216-BC Cribs	RC-04471	30,000 dpm/100cm^2
N/A	02/27/08	Tumbleweeds (8)	West Fenceline 241-U Tank Farm	RPR-CS&I-08-09	48,000 dpm/100cm^2
N/A	02/28/08	Mud Dauber Nest	Outside Rm 115 at 109-N	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	02/28/08	Tumbleweeds (4)	West side of PFP in Security Buffer Zone	SS-276536	48,000 dpm/100cm^2
N/A	02/29/08	Tumbleweed	South side of PFP in Security Buffer Zone	SS-276541	30,000 dpm/100cm^2
N/A	03/04/08	Tumbleweeds (>100)	218-E-12B LLBG Trench 94	PHMC-GENERAL-2008-0004	>1,000,000 dpm/100cm^2
N/A	03/04/08	Tumbleweeds (30)	On top of the 216-B-9 Crib	RC-04488	1,794,000 dpm/100cm^2
N/A	03/05/08	Tumbleweed	Along Exterior Fence of 241-B Tank Farm	PHMC-GENERAL-2008-0004	120,000 dpm/100cm^2
N/A	03/06/08	Tumbleweeds (>200)	218-E-12B LLBG Trench 94	PHMC-GENERAL-2008-0004	>1,000,000 dpm/100cm^2
N/A	03/08/08	Tumbleweeds (3-bags)	3-Bags (full) collected around 221-U Plant	RPR-CS&I-09-13	48,000 dpm/100cm^2
N/A	03/12/08	25'X25' area of Tumbleweeds	Over old Pipeline east of 241-SX Tank Farm	PHMC-GENERAL-2008-0004	100,000 dpm/100cm^2
N/A	03/12/08	Soil (6 areas) and Fragment	On top of 218-E-12B Burial Ground	PHMC-GENERAL-2008-0004	2,400,000 dpm/100cm^2
N/A	03/12/08	Tumbleweeds (2)	Outside200-W Area East Fenceline	RPR-CS&I-08-14	18,000 dpm/100cm^2
N/A	03/17/08	Soil	Inside 200-W-106 West of 241-TX	SS-276569	27,000 dpm/100cm^2
N/A	03/18/08	Tumbleweed Fragments	North Fenceline 241-U Tank Farm	BCPSR 03/16/2008	6,000 dpm/100cm^2
N/A	03/18/08	Tumbleweed	West fenceline 241-BX/BY Tank Farm	BCPSR 03/16/2008	15,000 dpm/100cm^2
N/A	03/19/08	Tumbleweed Fragments	East Perimeter Fenceline 241-SY	PHMC-GENERAL-2008-0004	400,000 dpm/100cm^2
N/A	03/24/08	Tumbleweed and Fragments	Northeast of 241-B Tank Farm	PHMC-GENERAL-2008-0004	>1,000,000 dpm/100cm^2

Table 1 Contamination Incidents CY 2008. (5 Sheets)

SAMPLE NUMBER	DATE	DESCRIPTION	LOCATION	DOCUMENT	FIELD READING (Beta/Gamma)
N/A	03/24/08	Tumbleweeds (2)	Along 200-West South Fenceline along Beloit Ave	RPR-CS&I-08-16	36,000 dpm/100cm^2
N/A	03/25/08	Tumbleweeds (4) and Fragments	Outside West Fenceline 241-S Tank Farm Complex	SS-276585	240,000 dpm/100cm^2
N/A	03/26/08	Tumbleweed	Outside West Fenceline 241-TX/TY Tank Farm	PHMC-GENERAL-2008-0004	210,000 dpm/100cm^2
N/A	03/27/08	Speck	Outside the East Side of 241-A Tank Farm	PHMC-GENERAL-2008-0004	60,000 dpm/100cm^2
N/A	03/28/08	Multiple Spots (Specks)	Surrounding 241-ER-311 Catch Tank	PHMC-GENERAL-2008-0004	200,000 dpm/100cm^2
N/A	03/31/08	Multiple Specks	Outside South Perimeter Fence 241-B Tank Farm	PHMC-GENERAL-2008-0005	300,000 dpm/100cm^2
N/A	04/01/08	Ant Mound	Inside the 218-E-12A LLBG	PHMC-GENERAL-2008-0005	800,000 dpm/100cm^2
N/A	04/01/08	Tumbleweeds (30) and Fragments	Inside the 218-E-12A LLBG	PHMC-GENERAL-2008-0005	>6,000,000 dpm/100cm^2
N/A	04/07/08	Tumbleweeds (2) and Fragments	Adjacent to the 200-E-53 CA	PHMC-GENERAL-2008-0005	400,000 dpm/100cm^2
N/A	04/10/08	Rabbit Fecal Pellets (29)	On Lawn @ 242-A Evaporator	BCPSR 04/13/2008	10,000 dpm/100cm^2
N/A	04/10/08	Tumbleweeds (2)	Outside East Perimeter 241-C Tank Farm	BCPSR 04/13/2008	9,000 dpm/100cm^2
N/A	04/21/08	Rabbit Feces (31 fecal pellets)	North of Fenceline 241-AN Tank Farm	CH2M-PER-2008-0844	30,000 dpm/100cm^2
N/A	04/21/08	Tumbleweed Fragments (3)	Northeast Fenceline 241-AN Tank Farm	CH2M-PER-2008-0844	30,000 dpm/100cm^2
N/A	04/23/08	Tumbleweed Fragments (16)	Around the 242-B/BL Building	PHMC-GENERAL-2008-0005	600,000 dpm/100cm^2
N/A	04/29/08	Blown in Tumbleweeds (10)	On Top of the 216-S-17 Pond	SS-276950	48,000 dpm/100cm^2
N/A	04/29/08	Tumbleweed Fragments	Northeast of 241-T Tank Farm	SS-276952	150,000 dpm/100cm^2
N/A	05/01/08	Wind Blown Tumbleweeds (4)	West Fence 241-BX/BY	SS-276963	48,000 dpm/100cm^2
N/A	05/05/08	Spot	Along Perimeter of 241-AW Tank Farm	SS-276959	20,000 dpm/100cm^2
N/A	05/05/08	Tumbleweed Fragments & Soil	Along North Perimeter of 241-U Tank Farm	SS-276962	100,000 dpm/100cm^2
N/A	05/06/08	Rabbit Feces (20)	Near 242-S and outside 241-S Tank Farm	PHMC-GENERAL-2008-0005	100,000 dpm/100cm^2
N/A	05/06/08	Tumbleweeds (4)	Near 242-S and outside 241-S Tank Farm	PHMC-GENERAL-2008-0005	6,000 dpm/100cm^2
N/A	05/07/08	Rabbit Feces (2)	Near 242-S and outside 241-S Tank Farm	PHMC-GENERAL-2008-0005	200,000 dpm/100cm^2
N/A	05/08/08	Tumbleweed	West Perimeter of 241-A Tank Farm along Buffalo Ave	PHMC-GENERAL-2008-0005	600,000 dpm/100cm^2
N/A	05/09/08	Rabbit	Trapped at the 272-S Building	SS-276971	8,000 dpm/100cm^2
N/A	05/09/08	Tumbleweeds (4 Attached)	Inside Weather Enclosure @ 218-E-12B	BCPSR 05/11/2008	25,000 dpm/100cm^2
N/A	05/12/08	Tumbleweed Fragments (10)	Along 241-A Tank Farm Perimeter Fenceline	PHMC-GENERAL-2008-0005	55,000 dpm/100cm^2
N/A	05/12/08	Tumbleweeds (5)	Along West Fenceline 241-S Tank Farm	SS-276976	30,000 dpm/100cm^2
N/A	05/13/08	Rabbit Fecal Pellet	Outside the 241-AZ Tank Farm Perimeter	DAR 05/14/2008	80,000 dpm/100cm^2
N/A	05/13/08	Rabbit Fecal Pellet	Outside the 241-SY Tank Farm Perimeter	CH2M-PER-2008-1082	50,000 dpm/100cm^2
N/A	05/13/08	Tumbleweed	West Fenceline 241-U Tank Farm	SS-276978	12,000 dpm/100cm^2
N/A	05/13/08	Tumbleweed	West Fenceline 241-BX Tank Farm	SS-276978	12,000 dpm/100cm^2
N/A	05/13/08	Tumbleweed Fragment	South of the 241-A Tank Farm Perimeter	CH2M-PER-2008-1081	90,000 dpm/100cm^2
N/A	05/13/08	Tumbleweeds (3 Deteriorating)	On top of the 218-E-4 Burial Ground	RC-04690	1,794,000 dpm/100cm^2
N/A	05/13/08	Tumbleweeds (Several)	Supporting Cleanup Activities @ 241-S Tank Farm	CH2M-PER-2008-1086	>1,000,000 dpm/100cm^2
N/A	05/14/08	Mice (2)	Trapped at 242-B/BL	BCPSR 05/25/2008	18,000 dpm/100cm^2
N/A	05/14/08	Mouse	Trapped at 224-U Building	BCPSR 05/25/2008	6,000 dpm/100cm^2
N/A	05/15/08	Specks	Outside Posted CA @ 218-W-4B	PHMC-SOLIDWASTE-2008-0002	12,000 dpm/100cm^2 Alpha
N/A	05/19/08	Wind Blown Tumbleweed Fragment	Outside 241-B Tank Farm Perimeter	PHMC-GENERAL-2008-0005	80,000 dpm/100cm^2
N/A	05/20/08	Wind Blown Tumbleweed Fragment (2)	Outside 241-B Tank Farm Perimeter	SS276995	>1,000,000 dpm/100cm^2
N/A	05/27/08	Wind Blown Tumbleweed Fragment (2)	Outside 241-C Tank Farm Perimeter	PHMC-GENERAL-2008-0005	60,000 dpm/100cm^2
N/A	05/28/08	Exc. Water Line Valve Box Lid	corner of 3rd and Baltimore Ave	RPR-CS&I-08-26	<5,000 dpm/100cm^2
N/A	05/29/08	Wind Blown Tumbleweeds	Northeast Perimeter Fence of 200-E	SS277408	600,000 dpm/100cm^2
N/A	06/02/08	Wind Blown Tumbleweeds	Northeast Perimeter Fence of 200-E	SS277412	>1,000,000 dpm/100cm^2
N/A	06/04/08	Specks (5)	218-W-4B Trench TV7CA	SW-08-010	7,500 dpm/100cm^2 alpha

Table 1 Contamination Incidents CY 2008. (5 Sheets)

SAMPLE NUMBER	DATE	DESCRIPTION	LOCATION	DOCUMENT	FIELD READING (Beta/Gamma)
N/A	06/05/08	Wind Blown Tumbleweeds/Fragments	Northeast Perimeter Fence of 200-E	PHMC-GENERAL-2008-0005	>1,000,000 dpm/100cm^2
N/A	06/10/08	Crescent Tools Pliers	6290 Riggers Services Facility	DAR 06/11/2008	12,000 dpm/100cm^2
N/A	06/12/08	Tumbleweed	West Perimeter Fenceline @ 241-U Tank Farm	RPR-CS&I-06-28	36,000 dpm/100cm^2
N/A	06/12/08	Tumbleweed fragment & Spots	200-E-114 PL from 241-B Tank Farm to BC Cribs	SS277430	>1,000,000 dpm/100cm^2
N/A	06/17/08	Tumbleweed and Fragments	Old Transfer Line East of 241-B Tank Farm	PHMC-GENERAL-2008-0005	>1,000,000 dpm/100cm^2
N/A	06/23/08	Tumbleweeds (50)	Growing on top of the 216-U-10 Pond	PHMC-GENERAL-2008-0005	80,000 dpm/100cm^2
N/A	06/25/08	Soil, RR Tie, and Waste Container	Inside 218-W-3A Solid Waste Burial, Trench 17	PHMC-SOLIDWASTE-2008-0003	24,000 dpm/100cm^2 Alpha
N/A	06/30/08	Tumbleweed Fragments	On UPR-200-E-101 South of 242-B/BL	RC-04808	>1,000,000 dpm/100cm^2
N/A	06/30/08	Tumbleweeds (2)	Outside 241-T Tank Farm Perimeter Fence	PHMC-GENERAL-2008-0005	180,000 dpm/100cm^2
N/A	07/01/08	Wind Blown Tumbleweeds	South of the 2727-WA Sodium Storage Area	PHMC-GENERAL-2008-0008	66,000 dpm/100cm^2
N/A	07/02/08	Wind Blown Tumbleweeds	Along 19th Street	PHMC-GENERAL-2008-0008	240,000 dpm/100cm^2
N/A	07/03/08	Wrench	In Drawer inside Rm. 212 @ 2101-M	PHMC-GENERAL-2008-0006	51,000 dpm/100cm^2
N/A	07/07/08	Tumbleweed Fragments (3)	Along West Perimeter Fence of 241-AZ	CH2M-PER-2008-1436	200,000 dpm/100cm^2
N/A	07/07/08	Tumbleweed	West fence of FFS area north of 19th Ave.	RPR-CS&I-08-031	12,000 dpm/100cm^2
N/A	07/08/08	Retrieved Waste Box	Inside 218-W-3A Solid Waste Burial Trench 17	PHMC-SOLIDWASTE-2008-0002	24,000 dpm/100cm^2 Alpha
N/A	07/08/08	Mouse Feces (3)	Inside 218-W-3AE Solid Waste Burial	PHMC-GENERAL-2008-0008	80,000 dpm/100cm^2
N/A	07/09/08	ERDF Can Hinge Plate	On ERDF Can from BC Cribs to 184-N	PHMC-CENTPLAT-2008-0002	2,000,000 dpm/100cm^2
N/A	07/10/08	Tumbleweed	221-U Plant Fenceline	RPR-CS&I-08-032	24,000 dpm/100cm^2
N/A	07/15/08	Mouse Trap	241-U Tank Farm Perimeter	CH2M-PER-2008-1457	20,000 dpm/100cm^2
N/A	07/18/08	Tumbleweed	2727-WA Fenceline	BCPSR 07/20/2008	24,000 dpm/100cm^2
N/A	07/18/08	Tumbleweed Fragments (40' X100')	Outside the Northeast Perimeter 218-E-12B LLBG	PHMC-GENERAL-2008-0008	410,000 dpm/100cm^2
N/A	07/21/08	Tumbleweeds	East Fenceline 241-B Tank Farm	CH2M-PER-2008-1482	1.3 rem open window
N/A	07/22/08	Tumbleweed	South Fenceline of 241-U Tank Farm	RPR-CS&I-08-033	42,000 dpm/100cm^2
N/A	07/22/08	Tumbleweeds (4)	West Barrier Wall of PFP	RPR-CS&I-08-035	48,000 dpm/100cm^2
N/A	07/22/08	Decomposing Rabbit Feces (5)	North Perimeter Fenceline of 241-SY Tank Farm	PHMC-GENERAL-2008-0006	800,000 dpm/100cm^2
N/A	07/22/08	Six pieces of Plastic	Outside the posted CA/HCA in ERDF	DAR 07/23/2008	360,000 dpm/100cm^2
N/A	07/23/08	Wind Blown Tumbleweeds (15)	Outside PFP Security Barrier	BCPSR 07/27/2008	42,000 dpm/100cm^2
N/A	07/23/08	Wind Blown Tumbleweeds (4)	Outside the 241-S Tank Farm Perimeter Fence	BCPSR 07/27/2008	30,000 dpm/100cm^2
N/A	07/24/08	Tumbleweeds (~300)	On Top of the 216-U-10 Pond	RC-04896	56,000 dpm/100cm^2
N/A	07/28/08	Tumbleweeds (~300)	South End of the 218-E-12B LLBG	PHMC-GENERAL-2008-0008	900,000 dpm/100cm^2
N/A	07/31/08	Rabbit Fecal Pellet (1)	Outside 244-U Instrument Building	BCPSR 08/03/2008	300,000 dpm/100cm^2
N/A	07/31/08	Rabbit Fecal Pellets (20)	Around 241-SY-272 @ 241-SY Tank Farm	PHMC-GENERAL-2008-0008	3,600,000 dpm/100cm^2
N/A	08/04/08	Spots in Soil (3) Suspect Rodent Urine	Outside 241-B Tank Farm Perimeter	PHMC-GENERAL-2008-0008	1,000,000 dpm/100cm^2
N/A	08/05/08	Tumbleweed Fragments	200-E-121 along Baltimore Ave.	SS-277724	40,000 dpm/100cm^2
N/A	08/11/08	Wind Blown Tumbleweeds (6)	Outside East Perimeter 241-AY/AZ Tank Farm	BCPSR 08/17/2008	15,000 dpm/100cm^2
N/A	08/12/08	Soil Speck	Perimeter of 241-SY Tank Farm	PHMC-GENERAL-2008-0008	60,000 dpm/100cm^2
N/A	08/13/08	Tumbleweed	At 291-S REDOX Stack	SS-277735	12,000 dpm/100cm^2
N/A	08/14/08	Waste Box	Bottom of Waste Box unearthed in 218-W-3A LLBG	DAR 08/15/2008	180,000 dpm/100cm^{2}Alpha
N/A	08/15/08	Soil	Contaminated soil found under 2" @ 241-TX/TY	PHMC-GENERAL-2008-0008	90,000 dpm/100cm^2
N/A	08/19/08	Wind Blown Tumbleweed	Outside West Perimeter Fence 241-AZ Tank Farm	PHMC-GENERAL-2008-0008	60,000 dpm/100cm^2
N/A	08/20/08	Tumbleweed Fragment	Around FFS Laydown Yard	SS-277740	40,000 dpm/100cm^2
N/A	08/20/08	Wind Blown Tumbleweed (1)	Near LEF/ETF	BCPSR 08/24/2008	40,000 dpm/100cm^2
N/A	08/26/08	Tumbleweeds	UPR-200-W-161 Around 207-U Basin	PHMC-GENERAL-2008-0008	54,000 dpm/100cm^2
N/A	08/27/08	Tumbleweed	West fenceline 241-BX/BY Tank Farm	RPR-CS&I-08-43	12,000 dpm/100cm^2

Table 1 Contamination Incidents CY 2008. (5 Sheets)

SAMPLE NUMBER	DATE	DESCRIPTION	LOCATION	DOCUMENT	FIELD READING (Beta/Gamma)
N/A	08/28/08	Tumbleweed Fragments	South Perimeter Fenceline of 241-B Tank Farm	SS-277754	>1,000,000 dpm/100cm^2
N/A	08/28/08	Tumbleweed Fragment	Around the 200 LEF/ETF	SS-277744	18,000 dpm/100cm^2
N/A	08/28/08	Burial Box	Lower corner of Burial Box inside 218-W-3A LLBG	PHMC-SOLIDWASTE-2008-0007	440,000 dpm/100cm^2 Alpha
N/A	08/28/08	Tumbleweeds	Corner of 19th & Dayton Ave	RPR-CS&I-08-44	18,000 dpm/100cm^2
N/A	09/01/08	Tumbleweed Fragments	Outside 241-TX-302C (UPR-200-W-38)	BCPSR 09/07/2008	42,000 dpm/100cm^2
N/A	09/03/08	Tumbleweed Fragments	West Perimeter Fence of 218-E-16 near the WTP	PHMC-GENERAL-2008-0008	72,000 dpm/100cm^2
N/A	09/08/08	Speck in Ant Mound	Speck in Ant Mound on top of 200-E-111 PL	PHMC-GENERAL-2008-0008	54,000 dpm/100cm^2
N/A	09/08/08	Spot	Outside the posted CA @ 216-BC-26 Crib	PHMC-CENTPLAT-2008-0003	163,000dpm/100cm^2
N/A	09/13/08	Tumbleweeds (<100)	Inside 218-E-12B Trench 94	PHMC-GENERAL-2008-0008	>1,000,000 dpm/100cm^2
N/A	09/15/08	Tumbleweeds (several)	200-E-135	RPR-CS&I-08-045	18,000 dpm/100cm^2
N/A	09/15/08	Tumbleweeds (30)	Outside Gate 810 200-E-110	PHMC-GENERAL-2008-0008	>1,000,000 dpm/100cm^2
N/A	09/16/08	Tumbleweeds	Northeast Perimeter Fence and Canton Ave	PHMC-GENERAL-2008-0008	2,940,000 dpm/100cm^2
N/A	09/17/08	Tumbleweed	On Top of the 216-U-10 Pond	PHMC-GENERAL-2008-0008	54,000 dpm/100cm^2
N/A	09/17/08	Crickets	On Glue Board from inside 242-BBL	ACO Logbook 9/17/2008	12,000 dpm/100cm^2
N/A	09/24/08	Tumbleweed Fragments	UPR-200-E-143 Northwest of the 244-AR Lift Station	PHMC-GENERAL-2008-0008	100,000 dpm/100cm^2
N/A	09/26/08	Tumbleweed	200-E-109 north of 218-E-12B	PHMC-GENERAL-2008-0008	>1,000,000 dpm/100cm^2
N/A	09/29/08	Rabbit Feces	Outside North Perimeter 241-SY Tank Farm	PHMC-GENERAL-2008-0008	850,000 dpm/100cm^2
N/A	10/06/08	Tumbleweed Fragments	East of 241-C tank Farm	PHMC-GENERAL-2008-0010	150,000 dpm/100cm^2
N/A	10/06/08	Tumbleweed Fragments	East of 241-BX tank Farm by MO824	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	10/09/08	Dried Mouse & Snake	Under CONEX Box Inside PUREX Fence Boundary	PHMC-GENERAL-2008-0010	200,000 dpm/100cm^2
N/A	10/14/08	Rabbit Feces	Outside 241-SX Tank Farm Perimeter	PHMC-GENERAL-2008-0010	500,000 dpm/100cm^2
N/A	10/14/08	Tumbleweed Fragments	200-E-109 North of 218-E-12B	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	10/16/08	Rabbit Feces	Outside the West and North Perimeters 241-S/SX/SY	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	10/20/08	Cottontail Rabbit	Outside North Perimeter 241-SY Tank Farm	PHMC-GENERAL-2008-0010	420,000 dpm/100cm^2
N/A	10/20/08	Lowboy Trailer	Central Waste Complex	CPRC-SOLIDWASTE-2008-0002	6,000 dpm/100cm^2 Alpha
N/A	10/21/08	Rail Road Rails	100-D Area	SS-278165	200 dpm/100cm^2 Alpha
N/A	10/23/08	Tumbleweed Fragments	UPR-200-W-38 South of T-Plant	PHMC-GENERAL-2008-0010	100,000 dpm/100cm^2
N/A	10/23/08	Tumbleweeds	On Top of the 216-A-30 Crib	PHMC-GENERAL-2008-0010	150,000 dpm/100cm^2
N/A	10/24/08	Tumbleweeds	200-E-109 north of the Trench 94	PHMC-GENERAL-2008-0010	>1,00,000 dpm/100cm^2
N/A	10/25/08	Tumbleweeds	200-E-109 north of the Trench 94	PHMC-GENERAL-2008-0010	>1,00,000 dpm/100cm^2
N/A	10/27/08	Tumbleweed Fragments	Canton Ave Side of Gate 810 N. of Trench 94	PHMC-GENERAL-2008-0010	>1,00,000 dpm/100cm^2
N/A	10/28/08	Tumbleweeds & Fragments	On top of the 218-E-12B Solid Waste Burial	PHMC-GENERAL-2008-0010	2,700,000 dpm/100cm^2
N/A	10/28/08	Tumbleweed & Multiple Fragments	Clean Drum Storage NE Side of 221-T Plant	PHMC-GENERAL-2008-0010	150,000 dpm/100cm^2
N/A	10/29/08	Tumbleweed & Fragments	200-E-109, North and East of 218-E-12B	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	10/29/08	Specks	West of 241-S Tank Farm	PHMC-GENERAL-2008-0010	200,000 dpm/100cm^2
N/A	11/03/08	Tumbleweeds	On Top of the 216-U-10 Pond	RC-05166	54,000 dpm/100cm^2
N/A	11/04/08	Tumbleweeds	On Top of the 216-U-10 Pond	RC-05172	114,000 dpm/100cm^2
N/A	11/04/08	Tumbleweed	West of 241-BY Tank Farm	PHMC-GENERAL-2008-0010	60,000 dpm/100cm^2
N/A	11/04/08	Rabbit Feces	Outside 241-S & SX Tank Farm	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	11/05/08	Fixed Contaminated spot in Shotcrete	In Shotcrete in UPR-200-E-77 (UN-216-E-5)	PHMC-GENERAL-2008-0010	300,000 dpm/100cm^2
N/A	11/05/08	Soil	A 10' X 20" area on top of 200-W-78	PHMC-GENERAL-2008-0010	72,000 dpm/100cm^2
N/A	11/06/08	Tumbleweeds Wind Blown	200-E-17 LERF Perimeter Fence	PHMC-GENERAL-2008-0010	600,000 dpm/100cm^2
N/A	11/10/08	Tumbleweeds and Fragments	200-E-109, North of 218-E-12B	PHMC-GENERAL-2008-0010	1,200,000 dpm/100cm^2
N/A	11/10/08	Tumbleweeds	On top of 216-U-10 Covered Pond	PHMC-GENERAL-2008-0010	900,000 dpm/100cm^2

Table 1 Contamination Incidents CY 2008. (5 Sheets)

SAMPLE NUMBER	DATE	DESCRIPTION	LOCATION	DOCUMENT	FIELD READING (Beta/Gamma)
N/A	11/17/08	Tumbleweed Fragments	Outside Perimeter of 241-ER-151 Diversion Box	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	11/17/08	Tumbleweeds	241-TX-155 Diversion Box Perimeter	RPR-CS&I-08-047	18,000 dpm/100cm^2
N/A	11/17/08	Tumbleweed Fragments	Outside Perimeter of 241-AP Tank Farm	PHMC-GENERAL-2008-0010	120,000 dpm/100cm^2
N/A	11/18/08	Tumbleweed and Fragments	Outside Perimeter of 241-B Tank Farm & 200-E-120	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	11/21/08	Tumbleweeds	West Fenceline of 241-S Tank Farm Complex	RPR-CS&I-08-048	30,000 dpm/100cm^2
N/A	11/22/08	Tumbleweed Fragments	Outside 241-A Tank Farm Perimeter	PHMC-GENERAL-2008-0010	150,000 dpm/100cm^2
N/A	11/22/08	Rabbit Feces	Outside Southwest Corner of241-S Tank Farm	PHMC-GENERAL-2008-0010	>1,000,000 dpm/100cm^2
N/A	12/01/08	Tumbleweed Fragments	On the 200-E-127-PL near the 207-A R.B.	PHMC-GENERAL-2008-0010	120,000 dpm/100cm^2
N/A	12/02/08	Tumbleweed Fragments	On the 200-E-127-PL	RPR-CS&I-08-049	30,000 dpm/100cm^2
N/A	12/03/08	Tumbleweeds	Along 12th Street across from 241-B Tank Farm	PHMC-GENERAL-2008-0010	54,000 dpm/100cm^2
N/A	12/04/08	Tumbleweed Fragment 10" Long	On the 200-E-127-PL near Gate 810	PHMC-GENERAL-2008-0010	120,000 dpm/100cm^2
N/A	12/05/08	Scott Escape Pack #A6215	While surveying SCAPAC Bottles in 609-J Building	PHMC-FD-2008-0002	30,000 dpm/100cm^2
N/A	12/10/08	Tumbleweed	West fenceline 241-BX/BY Tank Farm	RPR-CS&I-08-050	24,000 dpm/100cm^2
N/A	12/11/08	Speck (suspect rabbit urine)	North of the 241-SY Tank Farm	PHMC-GENERAL-2008-0010	250,000 dpm/100cm^2
N/A	12/11/08	Roof Insulation	100-KE Demolition Site	CPRC-SNF-2008-0003	60,000 dpm/100cm^2

Note: The referenced documents are as follows:
SS-2ooooo are Site Support Services Radiological Control Radiological Survey Reports
SST-0ooooo are Tank Farms Radiological Control Radiological Survey Reports
PHMC-HFD-2008, PHMC-GEN-2008, BHI-ERDF-2008, CHG-TANKFARM-2008, WHC-REMACT-2008etc., are Occurrence Reports
COF-003207, CHG Radiological Survey Reports
DAR xx/xx/2008 are Daily Activity Reports
CH2M-PER-2008-XXXX are CH2M Hill Problem Evaluation Requests
RC-XXXXX are D&D Radiological Survey Reports
ACO Logbook are Animal Control Operations Logbook
BCPSR xx/xx/2008 are Biological Control Program Weekly Status Reports

Abbreviations used are as follows:
dpm = Disintegrations per minute.
cm^2 = Square Centimeter
N/A = Not applicable or submitted for analysis.
PA = Probe Area.

Activity levels reported are the maximum observed in the field.

Table 2 summarizes the contamination incidents by area and media type through December 31, 2008. The column "Other" in this table is for miscellaneous items (e.g., clothing, equipment, etc.).

Table 2. Contamination Incidents by Area and Type During CY 2008.

Area/Waste Site Type	Vegetation	Animals	Soil/Specks	Other	Total Incidents
200-East Tank Farms	28	7	5	1	41
200-West Tank Farms	17	14	4	0	35
200-East Burial Grounds	12	1	1	0	14
200-West Burial Grounds	0	1	2	4	7
200-East Cribs, Ponds, & Ditches	3	0	0	0	3
200-West Cribs, Ponds, & Ditches	7	0	0	0	7
200-East Fence Lines	11	0	0	0	11
200-West Fence Lines	5	0	0	0	5
200-East Roads & Rail Roads	1	0	0	1	2
200-West Roads & Rail Roads	3	0	0	0	3
200-East Unplanned Release Sites	8	0	0	1	9
200-West Unplanned Release Sites	2	0	1	0	3
200-East Underground Pipelines	9	1	1	0	11
200-West Underground Pipelines	4	0	1	0	5
Cross-Site Transfer Line	0	0	0	0	0
200-BC Cribs and Trenches	2	0	0	0	2
200-East Miscellaneous	2	2	1	1	6
200-West Miscellaneous	13	3	0	1	17
200-North Area	0	0	0	0	0
100 Areas	0	1	0	3	4
300 Areas	0	0	0	0	0
400 Areas	0	0	0	0	0
600 Areas	0	0	0	4	4
1100 Areas	0	0	0	0	0
TOTALS	**127**	**30**	**16**	**16**	**189**

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4.0 BIOTIC TRANSPORT

Waste management, environmental protection, safety, and as low as reasonably achievable (ALARA) practices on the Hanford Site require that whenever possible, radiological contamination exposed to the environment be cleaned up or stabilized so that it is not easily transported from posted radiological control areas. Title 10 of the Code of Federal Regulations, Part 835, *Occupational Radiation Protection,* requires that appropriate controls be maintained and verified which prevent the inadvertent transfer of removable contamination to locations outside of radiological areas under normal operating conditions.

In response to a U.S. Department of Energy, Richland Operations Office (DOE-RL) concern, FH established a centralized Biological Control Program (BCP) to control the spread of contamination caused by biotic vectors. Prior to the establishment of the BCP, the biological control funding and requests for the application of biological control techniques were the responsibility of the affected facilities. The BCP provides vegetation control through herbicide application, grubbing, and vegetation removal in areas of accumulation. Trapping, baiting, fumigation, and the application of pesticides are used to control the spread of contamination by animals/insects.

4.1 DEEP-ROOTED VEGETATION VECTORS

Deep-rooted vegetation (e.g., tumbleweeds, sagebrush) growing over underground sources of radionuclides may selectively uptake contaminants into their tissues. When radionuclides are transported from roots to aerial portions of the plant, as often happens with tumbleweeds, surface contamination may result. This surface contamination poses a potential risk of environmental transport or human contact and can be very costly to clean up and/or stabilize. The FH procedures/requirements, *Environmental Protection Processes,* (HNF-PRO-15333), *Effluent and Environmental Monitoring* (HNF-PRO-15334), *Environmental Protection Requirements* (HNF-RD-15332), and the WCH procedure, *Environmental Monitoring & Management* (ENV-1), require that the tumbleweeds and other deep-rooted vegetation be removed from waste sites where radionuclide uptake is detected or probable.

A review of radiological reports (Radiological Problem Reports, Daily Activity Reports, Occurrence Reports, and Radiological Survey Records) indicates that during the fourth quarter of 2008, there were 28 incidents of contaminated vegetation. These incidents were all tumbleweeds and/or tumbleweed fragments.

Table 3 summarizes the number of incidents of contaminated vegetation found and the range of activity encountered between 1994 and December 31, 2008. It has been determined through field readings that the dose rate for meter readings on tumbleweeds having greater than 6,000,000 dpm/100 cm^2 ranges from approximately 2.0 to 50 millirads per hour.

Table 3. Yearly Summary of Contaminated Vegetation Incidents (1994 through December 31, 2008).

Year	Number of Incidents	Max. Activity (dpm)B/G[a]	Min. Activity (dpm)B/G
2008	127	>6,000,000/100cm^2	6,000/100cm^2
2007	62	2,400,000/100cm^2	3,000/100cm^2
2006	75	5,397,000/100cm^2	10,000/100cm^2
2005	66	1,800,000/100cm^2	6,000/100cm^2
2004	60	540,000/100cm^2	4,000/100cm^2
2003	32	3,600,000/100cm^2	6,000/100cm^2
2002	16	1,800,000/100cm^2	3,000/100cm^2
2001	31	>6,000,000/100cm^2[b]	6,000/100cm^2
2000	65	>1,000,000/100cm^2	5,000/100cm^2
1999	84	>1,000,000/100cm^2	8,000/100cm^2
1998	51	>1,000,000/100cm^2	4,000/100cm^2
1997	42	>1,000,000/PA	2,500/PA
1996	21	800,000/PA	6,000/PA
1995	12	250,000/PA	2,000/PA
1994	20	600,000/PA	2,000/PA

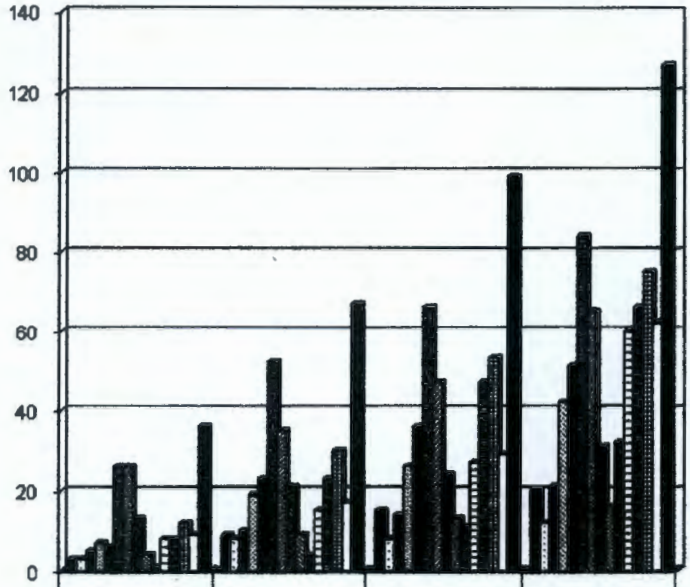
[a] The reporting of the activity changed in 1998 to meet the requirements identified in HNF-5173. The activity is reported in dpm per probe area prior to 1998 and in dpm per 100 cm^2 since 1998 (unless otherwise noted e.g., for a spec or insect).

[b] >6,000,000/100 cm^2 being used in 2001and subsequent years includes a correction factor of 6 to correct from probe area to 100 cm^2 which was not used in previous years.

Abbreviations used are as follows:
B/G = Beta/Gamma
dpm = Disintegrations per minute.
PA = Probe Area.

Figure 11 depicts graphically, on a cumulative by quarter basis, the contaminated vegetation incidents encountered between 1994 and the end of the fourth quarter of 2008. The summary data indicate that the cumulative number of vegetation contamination incidents through the fourth quarter of each year gradually increased by a factor of almost four from 1994 (15) through 1999 (66). They then declined until 2003 (11) but have increased since then to the highest levels being reported in 2008 (127).

Figure 11. Contaminated Vegetation Incidents 1994 through 2008 (Cumulative by Quarter).



	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
1994	3	9	15	20
1995	3	8	8	12
1996	5	10	14	21
1997	7	19	26	42
1998	6	23	36	51
1999	26	52	66	84
2000	26	35	47	65
2001	13	21	24	31
2002	4	9	13	16
2003	1	4	11	32
2004	8	15	27	60
2005	8	23	47	66
2006	12	30	53	75
2007	9	17	29	62
2008	36	67	99	127

Figure 12 displays the number of contaminated vegetation incidents cumulative by month between 1994 and the end of the fourth quarter of 2008. In this figure the 2008 line indicates the most incidents (127) that have occurred during the last 14 years, while the fewest number of incidents (12) occurred in 1995.

There were 127 incidents through the fourth quarter of CY 2008. The number of incidents through this time period is higher than all the previous year's reported during the same time period.

4.2 ANIMAL VECTORS

Biotic transport of radiological contamination through animal (insects, mice, etc.) vectors has been a major cause of contamination spread throughout the Hanford Site for a number of years.

A review of radiological reports (Radiological Problem Reports, Occurrence Reports, and Radiological Survey Records) indicates that during the fourth quarter of 2008, there were seven incidents of contaminated animals and animal related material (urine/feces). Table 4 shows the number of contaminated animal related incidences found and the range of activity encountered for the years 1994 through December 31, 2008. It should be noted that the dose rates for meter readings greater than 6,000,000 dpm/100 cm^2 or 1,000,000 dpm/PA detected in the animals/insects can range as much as approximately 1.5 to 15 millirads per hour.

Figure 13 summarizes, on a cumulative by quarter basis, the contaminated animal incidents encountered from 1994 and through the fourth quarter of 2008. This graphic also demonstrates the decreased activity of animals during the winter.

Figure 14 displays the number of contaminated animal incidents cumulative by month between 1994 and the end of the fourth quarter of 2008. CY 1998 represents the record for the most contamination incidents (46).

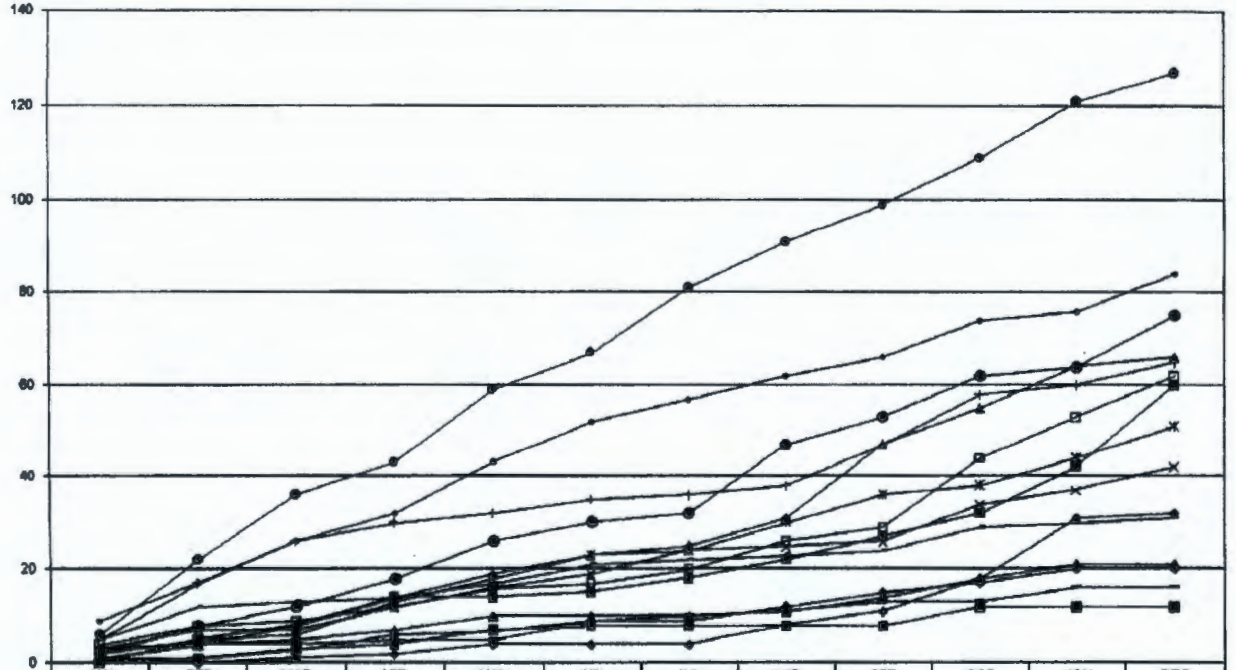
4.3 BIOLOGICAL CONTROL PROGRAM

The BCP continues to work towards controlling and eliminating the spread of radioactive contamination through biological vectors. The number of animal related contamination incidents was generally consistent with prior years through the fourth quarter of 2008. However, the vegetation related vectors became the highest number of incidents recorded during this period to date. The BCP scope includes: 1) integrated surveillance, 2) cleanup, 3) control, and 4) site restoration.

4.3.1 Surveillance

Radioactivity monitoring and surveillance activities indicate that the reduction in contaminated occurrences for vegetation related material was not maintained during the fourth quarter of CY 2008. The number of animal related incidents reported was generally consistent with the previous years during the same time periods.

Figure 12. Contaminated Vegetation Incidents
(Cumulative by Month).



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1994	1	1	3	6	7	9	9	12	15	17	20	20
1995	0	1	3	4	7	8	8	8	8	12	12	12
1996	3	4	5	7	10	10	10	11	14	18	21	21
1997	3	7	7	12	16	19	24	25	26	34	37	42
1998	2	5	6	13	18	23	24	30	36	38	44	51
1999	9	17	26	32	43	52	57	62	66	74	76	84
2000	5	17	26	30	32	35	38	38	47	58	60	66
2001	5	12	13	14	17	21	22	23	24	29	30	31
2002	3	4	4	5	6	9	10	11	13	13	16	16
2003	0	0	1	2	4	4	4	8	11	18	31	32
2004	0	5	8	14	14	15	18	22	27	32	42	60
2005	1	4	8	14	19	23	25	31	47	55	64	66
2006	2	8	12	18	26	30	32	47	53	62	64	75
2007	4	8	9	12	16	17	20	26	29	44	53	62
2008	6	22	36	43	59	67	81	91	99	109	121	127

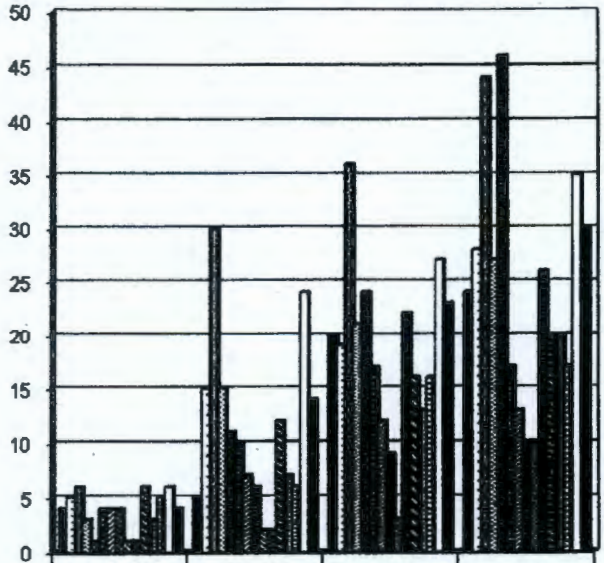
Table 4. Contaminated Animal Incidents
(1994 through December 31, 2008).

Year	Number of Incidents	Max. Activity (dpm)B/G[a]	Min. Activity (dpm)B/G
2008	30	3,600,000/100cm^2	1,500/100cm^2
2007	35	600,000/100cm^2	20,000/100cm^2
2006	17	>1,000,000/100cm^2	4,000/100cm^2
2005	20	>1,000,000/100cm^2	4,000/100cm^2
2004	20	649,000/100cm^2	1,500/100cm^2
2003	26	1,200,000/100cm^2	900cpm
2002	10	42,000/100cm^2 Alpha [b]	2,500/100cm^2
2001	10	>6,000,000/100cm^2 [c]	1,000/PA
2000	13	300,000/100cm^2	3,000/100cm^2
1999	17	500,000/100cm^2	2,000/PA
1998	46	>1,000,000/100cm^2	4,000/100cm^2
1997	27	>1,000,000/PA	NR
1996	44	>1,000,000/PA	500/PA
1995	28	>1,000,000/PA	2,000/PA
1994	24	>1,000,000/PA	2,000/PA

[a] The reporting of the activity changed in 1998 to meet the requirements identified in HNF-5173. The activity is reported in dpm per probe area prior to 1998 and in dpm per 100cm^2 since 1998 (unless otherwise noted e.g., for a spec or insect). Activity reported as beta/gamma unless otherwise noted.
[b] No Beta/Gamma reported on this incident.
[c] >6,000,000/100cm^2 being used in 2001 and subsequent years includes a correction factor of 6 to correct from probe area to 100cm^2 which was not used in previous years.

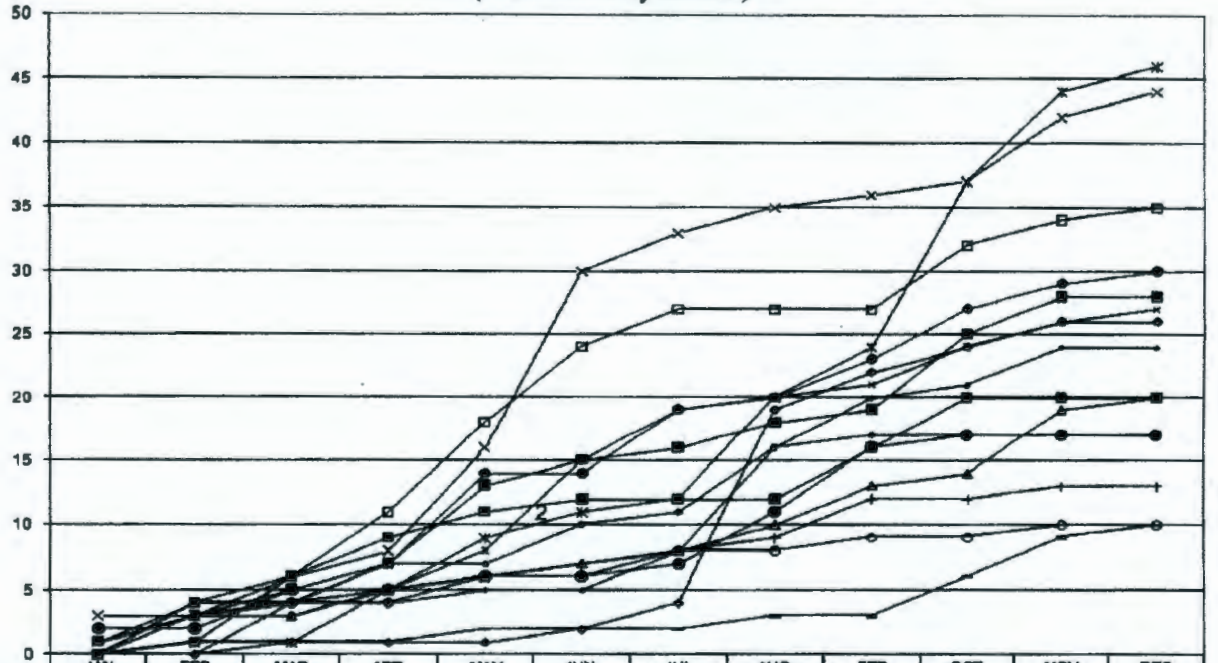
Abbreviations used are as follows:
B/G = Beta/Gamma
dpm = Disintegrations per minute.
NR = No activity above background recorded in the field.
PA = Probe Area.

Figure 13. Contaminated Animal Incidents 1994 through 2008 (Cumulative by Quarter).



	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
1994	4	5	20	24
1995	5	15	19	28
1996	6	30	36	44
1997	3	15	21	27
1998	1	11	24	46
1999	4	10	17	17
2000	4	7	12	13
2001	4	6	9	10
2002	1	2	3	10
2003	1	2	22	26
2004	6	12	16	20
2005	3	7	13	20
2006	5	6	16	17
2007	6	24	27	35
2008	4	14	23	30

Figure 14. Contaminated Animal Incidents
(Cumulative by Month).



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1994	1	3	4	4	5	5	8	16	20	21	24	24
1995	1	3	5	7	13	15	16	18	19	25	28	28
1996	3	3	6	8	16	30	33	36	36	37	42	44
1997	1	3	3	5	8	15	19	20	21	24	26	27
1998	0	1	1	5	9	11	12	20	24	37	44	48
1999	0	0	4	7	7	10	11	16	17	17	17	17
2000	0	4	4	5	6	7	8	9	12	12	13	13
2001	0	3	4	4	6	6	8	8	9	9	10	10
2002	0	1	1	1	2	2	2	3	3	6	9	10
2003	0	0	1	1	1	2	4	19	22	24	26	26
2004	0	1	6	9	11	12	12	12	16	20	20	20
2005	1	3	3	5	6	7	8	10	13	14	19	20
2006	2	2	5	5	6	6	7	11	16	17	17	17
2007	0	4	6	11	18	24	27	27	27	32	34	35
2008	1	4	4	7	14	14	19	20	23	27	29	30

4.3.2 Cleanup

The BCP reported continued progress towards cleanup of the Site's operations areas in CY 2008.

4.3.2.1 First Quarter

- Approximately 103 hectares (255 acres) of underground pipeline and power transmission line right of way were brush hogged.
- 65.5 non-regulated compactor truckloads of tumbleweeds were taken to the 200-W burn pit for disposal. (One compactor truckload $\cong$ 11,000ft^3.)
- Two regulated compactor truckloads of tumbleweeds were taken to Permafix NW (a private licensed incinerator) for disposal.

4.3.2.2 Second Quarter

- Approximately 2 hectares (5 acres) of underground pipeline and power transmission line right of way were brush hogged.
- 36.5 non-regulated compactor truckloads of tumbleweeds were taken to the 200-W burn pit for disposal. (One compactor truckload $\cong$ 11,000ft^3.)
- Three regulated compactor truckloads of tumbleweeds were taken to ERDF for disposal.

4.3.2.3 Third Quarter

- Approximately 18 hectares (44 acres) of underground pipeline and power transmission line right of ways were brush hogged.
- 51.5 non-regulated compactor truckloads of tumbleweeds were taken to the 200-W burn pit for disposal. (One compactor truckload $\cong$ 11,000ft^3.)
- Two regulated compactor truckloads of tumbleweeds were taken to ERDF for disposal.

4.3.2.4 Fourth Quarter

- Approximately 2 hectares (5 acres) of the underground pipeline and power transmission line right of ways were brush hogged.
- 25.5 non-regulated compactor truckloads of tumbleweeds were taken to the 200-W burn pit for disposal. (One compactor truckload $\cong$ 11,000ft^3.)
- Three regulated compactor truckloads of tumbleweeds were taken to ERDF for disposal.

4.3.3 Control

The interdiction of potential contamination problems appears to be working with animal vectors. The number of animal incidents in CY 2008 is similar to the average/typical of those reported during the same period from past years (see Figure 13). However, the control of contaminated vegetation vectors does not appear to be effective. An assessment of the biological control program conducted during CY 2006 concluded that the vegetation had developed a chemical resistance from the usage of the same herbicide over a period of years. A program to rotate the herbicides used to control deep rooted vegetation was developed and implemented in CY2007 and was continued through 2008. Test plots were set up outside the 200 East and 200 West Areas to test several herbicides and their application rates. The herbicides showing the greatest effect were used in 2008.

4.3.3.1 First Quarter

- Approximately 139 hectares (344 acres) of Hanford Site land were treated with herbicides.
- 131 waste site evaluations were performed (herbicide effect, etc.).
- 8,023 pest control responses for Hanford Site facilities were conducted.
- 898 bait stations and 2,011 animal control devices were in place.
- 415 animals captured, one of which was contaminated.

4.3.3.2 Second Quarter

- Approximately 724 hectares (1,790 acres) of Hanford Site land were treated with herbicides.
- 93 waste site evaluations were performed (herbicide effect, etc.).
- 9,568 pest control responses for Hanford Site facilities were conducted.
- 898 bait stations and 2,103 animal control devices were in place.
- 777 animals captured, three of which were contaminated.

4.3.3.3 Third Quarter

- Approximately 602 hectares (1,487 acres) of Hanford Site land were treated with herbicides.
- 72 waste site evaluations were performed (herbicide effect, etc.).
- 8,438 pest control responses for Hanford Site facilities were conducted.

- 898 bait stations and 2,183 animal control devices were in place.
- 812 animals captured, none of which were contaminated.

4.3.3.4 Fourth Quarter

- Approximately 749 hectares (1,852 acres) of Hanford Site land were treated with herbicides.
- 29 waste site evaluations were performed (herbicide effect, etc.).
- 6,130 pest control responses for Hanford Site facilities were conducted.
- 898 bait stations and 2,215 animal control devices were in place.
- 480 animals captured, one of which was contaminated.

4.3.4 Noxious Weed Control

The U.S. Department of Energy (DOE) is obligated by the Federal *Noxious Weed Act of 1974* to actively control noxious weeds. *Washington Administrative Code* (WAC 16-750) and (RCW 17.10) require all landowners to control noxious weeds on their property and impose specific penalties for failure to do so. Washington State Noxious Weed laws are enforced by the county Noxious Weed Control Boards. In accordance with federal, state, and local laws, each DOE facility is required to have a noxious weed management program.

4.3.4.1 First Quarter

- None of the noxious weeds were treated with herbicides. Control efforts concentrated on mapping the weed species for later treatment.

4.3.4.2 Second Quarter

- Approximately 2 hectares (4 acres) were treated with an herbicide application to control *Dalmatian toadflax*.

4.3.4.3 Third Quarter

- 6 hectares (15 acres) were treated on land west of the intersection of Route 10 and State Route 240 to control *Rush Skeletonweed*.

4.3.4.4 Fourth Quarter

- 13 hectares (33 acres) of noxious weeds were treated with an herbicide application for the control of *Rush Skeletonweed*. The areas treated were on land west of the intersection of Route 10 and State Route 240.

For a detailed description of the noxious weeds found on the Hanford Site, see the Hanford Site Environmental Report.

4.3.5 Site Restoration

Site restoration in CY 2008 was concentrated on areas damaged by the 2007 Wautoma wild fire in the 600 Area.

4.3.5.1 First Quarter

- 500 sagebrush tublings were planted over approximately 10 hectares (25 acres).

4.3.5.2 Second Quarter

- No additional areas were planted or seeded during the second quarter of 2008.
- Seed collection of locally derived native vegetation was performed during this period and permission was received to collect bluebunch wheatgrass from ALE.

4.3.5.3 Third Quarter

- 4 hectares (10 acres) were seeded with bunch grass in areas west of Army Loop Road and at the sand blow area west of the 200 East Area.

4.3.5.4 Fourth Quarter

- 118 hectares (292 acres) were seeded with bunch grass along Army Loop Road and the sand blow area west of the 200 East Area and 6 hectares (15 acres) were seeded with bunch grass in the 216-BC Cribs.

5.0 SUMMARY

Eighty-seven scheduled routine outdoor radiological surveys were completed during the fourth quarter of 2008 in the 100, 200-East/West, 300, and 600 Areas.

5.1 RADIOLOGICAL POSTING CHANGES

An ongoing effort to stabilize and/or clean up areas of known contamination and to down post or release these areas from posting is being performed by the River Corridor Project Contractor and by the facility managers. One waste site received interim closure during the fourth quarter of 2008. At the end of the fourth quarter of 2008, 584 hectares (1,443 acres) remain posted as URMA, 3,583 hectares (8,853 acres) remain posted as contamination area/soil contamination area (CA/SCA), and 116 hectares (28 acres) have received interim closure. This currently leaves 4,167 hectares (10,296 acres) of URM and CA/SCA areas remaining to be stabilized and down posted or cleaned up and released. Table 5 indicates the changes in the surface area totals for the contaminated sites from 1996 to the end of the fourth quarter of 2008. These changes can be attributed to either stabilization and down posting, addition of newly discovered waste sites, and/or increased accuracy of waste site surveys.

Remedial action activities in the 100 and 300 Areas have resulted in the interim closure and release from posting for 116 hectares (287 acres), see Table 6.

5.2 BIOTIC TRANSPORT ACTIVITY

During the fourth quarter of 2008, there were 28 incidents of contaminated vegetation and 7 incidents of contaminated animals and animal-related matter (feces/urine). This corresponds, respectively, to 33 incidents of contaminated vegetation and 8 incidents of contaminated animal related matter during the same period in 2007. Levels of activity found ranged from 18,000 dpm/100 cm^2 to >1,000,000 dpm/100 cm^2 beta/gamma and no alpha reported.

The following two charts show the biotic contamination trends from 1994 through 2008. These charts have been constructed as "C-chart" control charts. (For more information on the chart construction, see HNF-HD-10677 or the "Hanford Trending Primer" on the internet at http://www.hanford.gov/rl/?page=1144&parent=169.)

Figure 15, Contaminated Vegetation Events, does show a general increasing trend from 1994 to 2000. A significant drop in events occurred for 2001 to 2003. This was followed by an increase for 2004 to 2007, with several periods of increased events, with return to a 2.6 per month baseline. Since October 2007, the rate increased and steadied out at 11 per month. The prediction for the future is an average of 11 per month, no less than 2 and no more than 20 in a given month.

Figure 16, Contaminated Animal Incidents, shows there were approximately two events per month from 1994 to 2000, with several spikes. From 2000 to 2003, the rate dropped to less than one per month. Following a very large spike in August 2003, the rate steadied at 1.6 per month for 2004 to 2006. The data have been stable at 2.6 per month since August 2006. The prediction for the future is an average of 2.6 per month, with no more than seven in a given month.

Table 5. Outdoor Contamination Status (CA/SCA) 1997 through 2008
(approximate surface area in hectares [acres]).

Hanford Site Area	1997[a]	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
100 Areas	47 (116)	46 (114)	41 (101)	43 (107)	46 (114)	46 (114)	47(116)	42(104)[f]	10(25)[f]	7(17)[f]	7(17)[f]	7(17)[f]
200 Areas	91 (225)	87 (215)	88 (217)	97 (239)	103 (255)	99 (245)	85(210)	99(245)	99(245)	98(242)	98(242)	98(242)
300 Areas	20 (49)	20 (49)	19 (47)	11 (27)	11 (27)	11 (27)	19(47)[e]	9(22)[f]	5(12)[f]	0	0	0
600 & BC Control Areas	3,832 (9,469)[b,c]	3,480 (8,599)[d]	3,480 (8,599)	3,477 (8,592)	3,478 (8,594)	3,478 (8,594)	3,478 (8,594)	3,478 (8,594)	3,478 (8,594)	3,478 (8,594)	3,478 (8,594)	3,478 (8,594)
Totals	**3,990 (9,859)**	**3,633 (8,977)**	**3,628 (8,964)**	**3,628 (8,965)**	**3,638 (8,990)**	**3,634 (8,980)**	**3,629 (8,968)**	**3,628 (8,965)[f]**	**3,592 (8,876)[f]**	**3,583 (8,853)[f]**	**3,583 (8,853)[f]**	**3,583 (8,853)[f]**

[a] There are some discrepancies as to the total acreage reported and areas remediated. This is due to the accuracy gained in measurement from the exclusive use of GPS equipment for the measurement of the contaminated surface areas.

[b] The large acreage in 600 & BC Control Areas is due to the soil contamination areas which was added in 1995 posted around the BC Cribs Control Area.

[c] The ERDF was added during the 3rd quarter of 1997, 1.9 ha (4.8 acres).

[d] The BC Control Areas were mapped in 1998 using the GPS equipment resulting in a decrease in total area.

[e] 8 hectares (20 acres) were remediated and soil samples taken in 2000, however, the waste sites were never down posted to URM or released. The current figures reflect the actual posting in the field.

[f] These acreages reflect those waste sites that have been remediated and received interim closure status.

CA/SC = Contamination Area/Soil Contamination Areas

Table 6. Contamination Status, December 31, 2008.

Area	Contamination Areas[a]		Underground Radioactive Materials Areas[b]		Interim Closed Areas[c]	
	Hectares	Acres	Hectares	Acres	Hectares	Acres
100-B,C	0	0	29	72	17	42
100-D,DR	0	0	22	54	6	15
100-F	0	0	3	7	19	47
100-H	0	0	2	17	7	17
100-K	5	12	45	111	20	49
100-N	2	5	16	40	25	62
200-East	71	175	141	348	0	0
200-West	27	67	224	554	0	0
300	0	0	42	104	22	54
400	0	0	0	0	0	0
600[d]	3,478	8594	55	136	0	0
Totals	3,583	8,853	584	1,443	116	287

[a]Includes areas posted as contamination/soil contamination or as radiologically controlled and areas that had both underground radioactive material and contamination/soil contamination.
[b]Includes areas with only underground contamination.
[c]Includes areas which have undergone remediation and interim closure.
[d]Includes BC controlled area, ERDF, and waste disposal facilities outside the 200-East and 200-West Area boundaries.

Figure 15. Contaminated Vegetation Incidents (By Month)

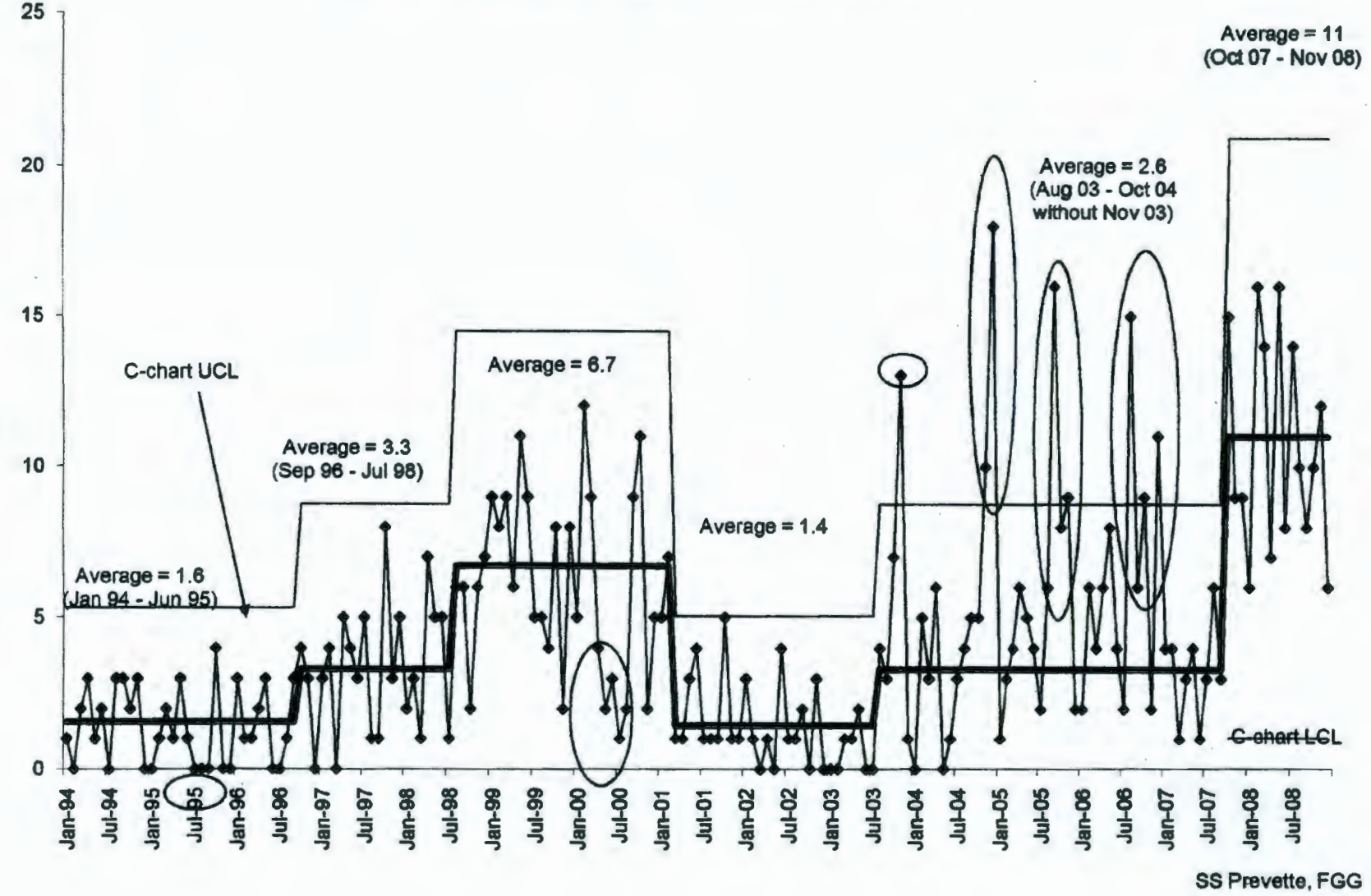
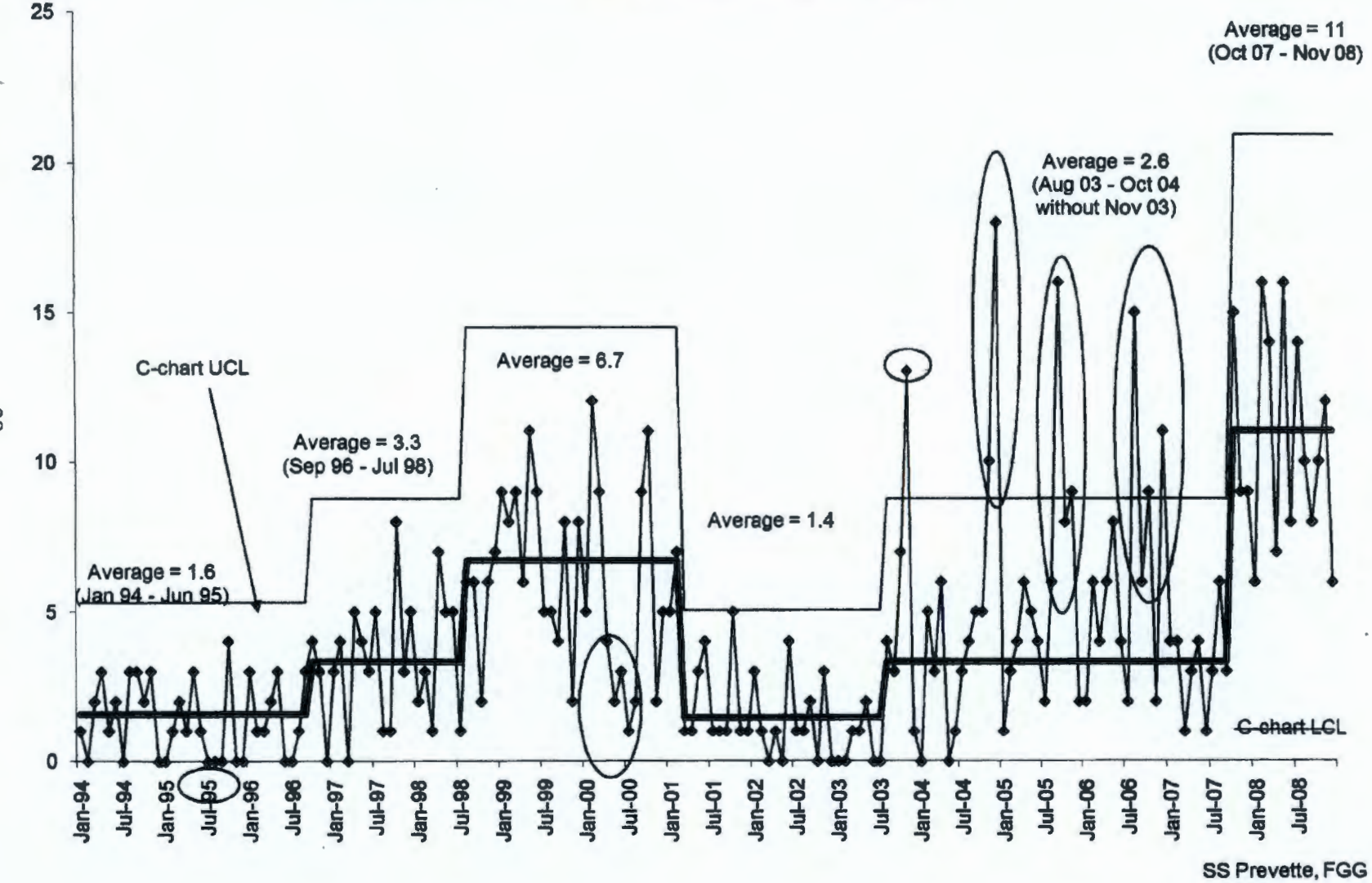


Figure 15. Contaminated Vegetation Incidents (By Month)



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