

# **Quarterly Environmental Radiological Survey Summary**

**First Quarter 1998**

**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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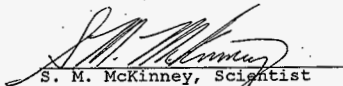
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QUARTERLY ENVIRONMENTAL RADIOLOGICAL SURVEY SUMMARY  
 FIRST QUARTER 1998 100, 200, 300, AND 600 AREAS

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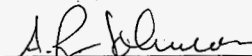
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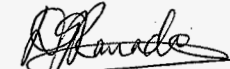
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**EXECUTIVE SUMMARY**

This report provides a summary of the radiological surveys performed in support of near-facility environmental monitoring at the Hanford Site. The First Quarter 1998 survey results and the status of actions required are summarized below:

- All of the one hundred fifteen routine environmental radiological surveys scheduled during January, February, and March were performed as planned. Thirty five of the surveys were conducted at Project Hanford Management Contractors (PHMC) sites and 80 at Environmental Restoration Contractor (ERC) sites. Contamination above background levels was found at eight of the PHMC waste sites and six of the ERC waste sites. Contamination levels as high >1,000,000 disintegrations per minute (dpm) were reported. Of these contaminated surveys 11 were in Underground Radioactive Material (URM) areas and three were in contamination areas. The contamination found within six of the URM areas was immediately cleaned up and no further action was required. The remaining five URM sites were posted and will require decontamination. Radiological Problem Reports (RPR's) were issued and the sites were turned over to the landlord for further action as required.
- During the first quarter of 1998, 0.23 hectares (0.57 acres) were stabilized and radiologically down posted from Contamination Area (CA)/Soil Contamination (SC) to URM.
- Four Surveillance Compliance Inspection Reports (SCIRs) remained open and had not been resolved. Tank Farms Operations has responsibility for for the unresolved SCIRs

## TOP TEN PRIORITY RANKING FOR CONTAMINATED WASTE SITES

Below is a listing of the top ten contaminated waste sites in order of highest priority ranking for contamination control. Rankings are based on history of, or potential of, spreading contamination to noncontaminated areas; levels of contamination; types of contamination; size of area; and proximity to human occupied or utilized areas. The waste site may have an open SCIR identifying the contamination. An explanation of the prioritization system is on page 13 of this report.

	<u>SITE</u>	<u>CUSTODIAN</u>	<u>SCIR/CAR</u>
1.	241-C Tank Farm Perimeters	TFO	9008EP200-068
2.	241-B Tank Farm Perimeters	TFO	8909EP200-036
3.	241-BX-BY Tank Farm Perimeters	TFO	9007EP200-056
4.	241-S, SX, SY Tank Farm Perimeters	TFO	9208ERI-006
5.	UN-216-E-6, 241-BX-155 Diversion Box	TFO	NONE
6.	216-U-14 Trench (North of 16 <sup>th</sup> Street)	TFO	NONE
7.	216-B-64 Basin	B-Plant	NONE
8.	207-A Retention Basin	TFO	NONE
9.	207-B Retention Basin	B-Plant	NONE
10.	241-A Tank Farm	TFO	NONE

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## 1.0 INTRODUCTION

Routine radiological surveys are part of near-facility environmental monitoring, which monitors and helps direct the reduction of the radiological areas at the Hanford Site. The routine radiological surveys are performed by the Southern Area Remediation Support Group and the Site Support Services Radiological Control Group as directed by Environmental Monitoring and Investigations. The surveys performed have included inactive waste sites; outdoor radiological control areas; tank farm perimeters and associated diversion boxes, lift stations, and 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 (Figures 1 through 10). This report provides a summary of the radiological surveys performed in support of near-facility environmental monitoring at the Hanford Site during the first quarter 1998. The survey results and the status of actions required are also discussed.

A waste site survey schedule, *Routine Environmental Monitoring Schedule, Calendar Year 1998*, HNF-SP-0098-9, was developed by Environmental Monitoring and Investigations working with the Southern Area Remediation Support Group and the Site Support Services Radiological Control Group. Environmental Monitoring and Investigations reviews the radiological survey reports and files a copy for historical purposes and reference. Radiological conditions are tracked and trends noted. All sites are surveyed at least once each year. The survey frequencies for particular sites are based on site history, radiological conditions, and general maintenance. Special surveys may be conducted at irregular frequencies if conditions warrant (e.g., 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 general site maintenance conditions. Survey data are compared with standards identified in HSRCM-1, *Hanford Site Radiological Control Manual*, as well as previous surveys to recognize possible trends, assess environmental impacts, and help determine where corrective actions are needed.

Landlords of the sites found out of compliance with HSRCM-1 may be issued a Radiological Problem Report (RPR) from the appropriate radiological Control Group. Open Surveillance Compliance Inspection Reports (SCIRs) are listed in Table 1 of this report.

Surveillance of the active nuclear facilities and inside the tank farms is the responsibility of the facility. These radiological surveys are 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.

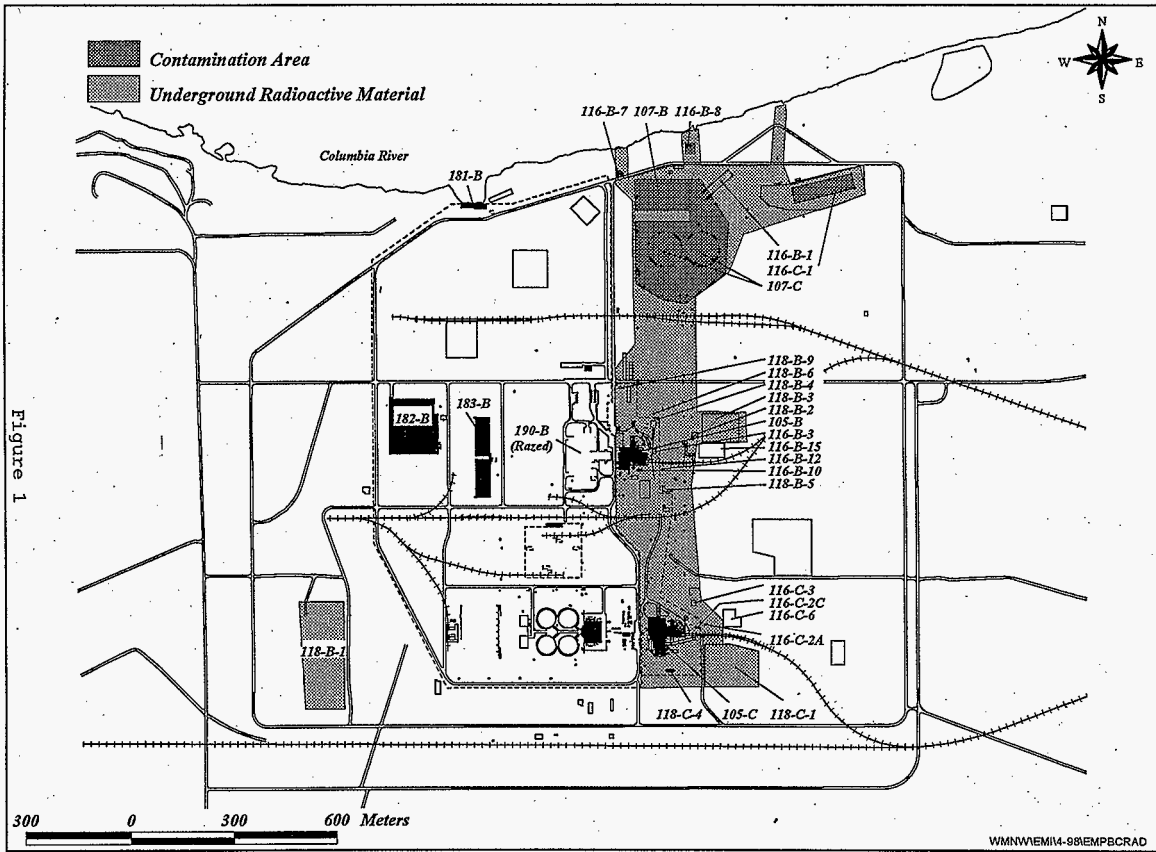
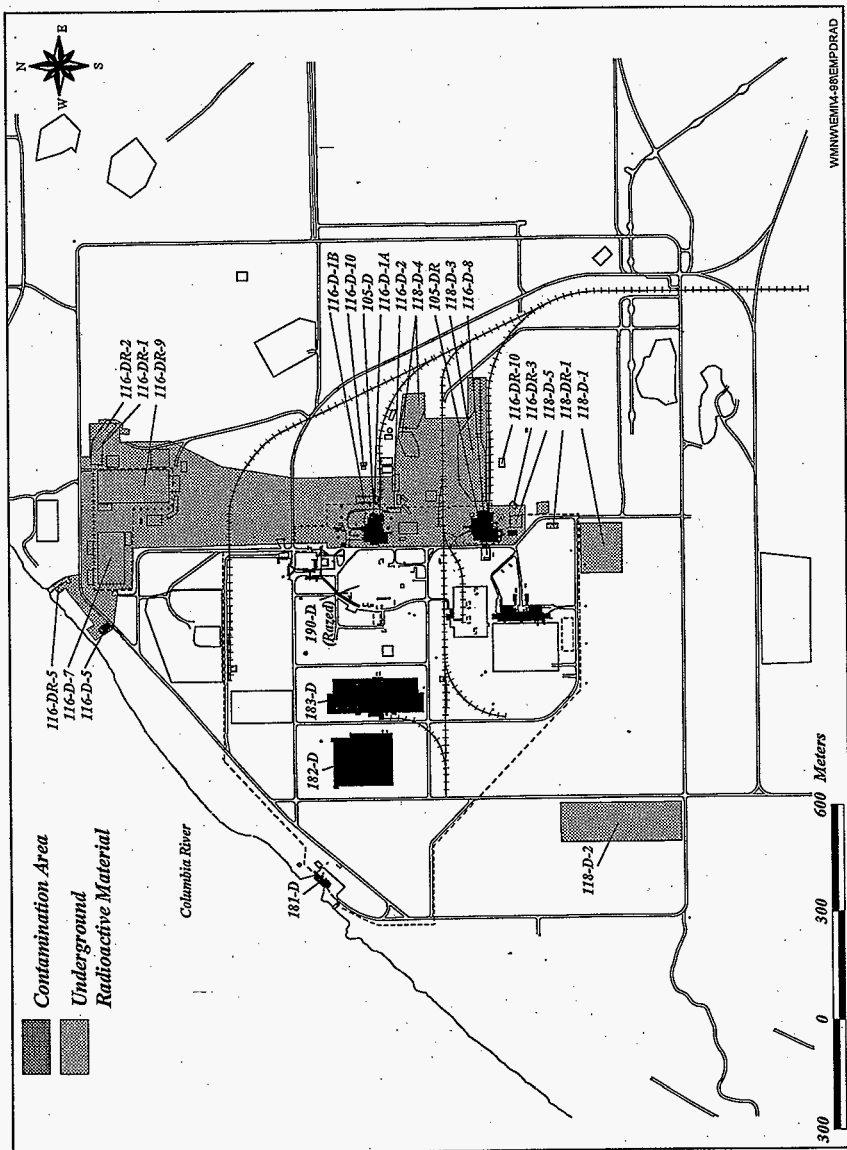
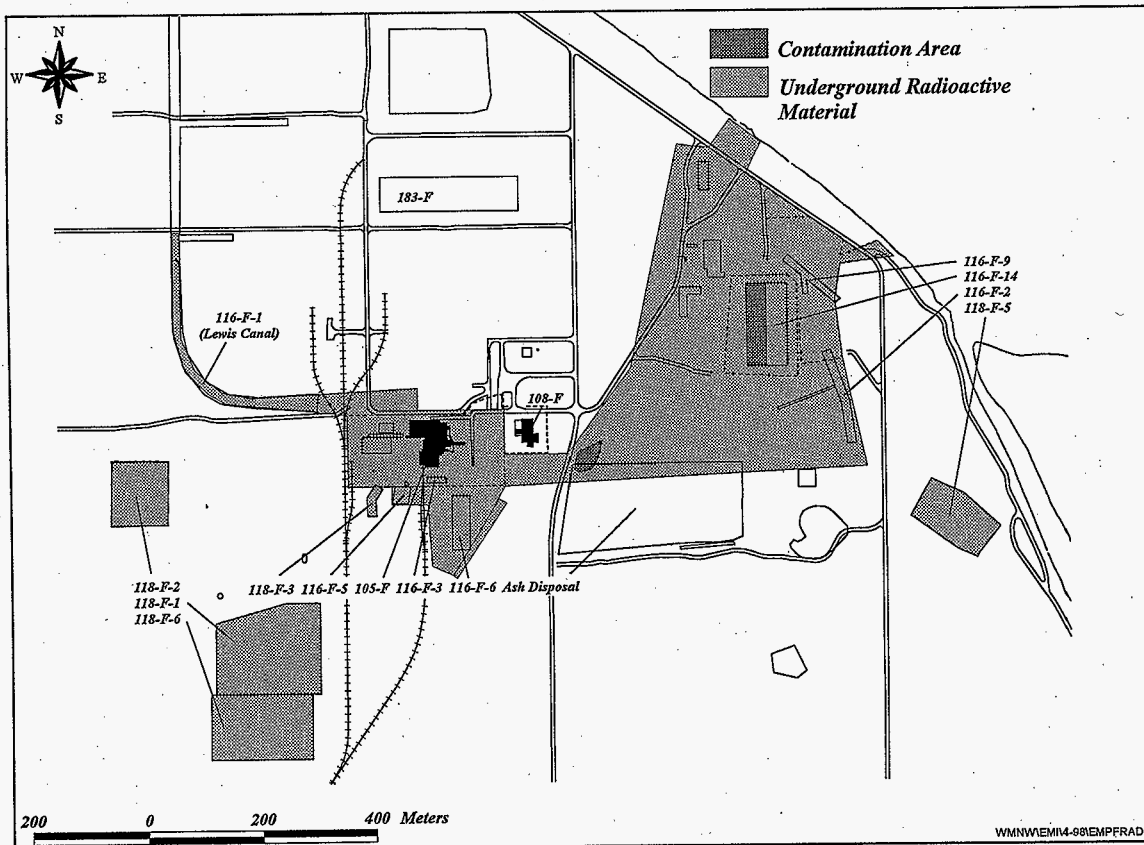


Figure 1



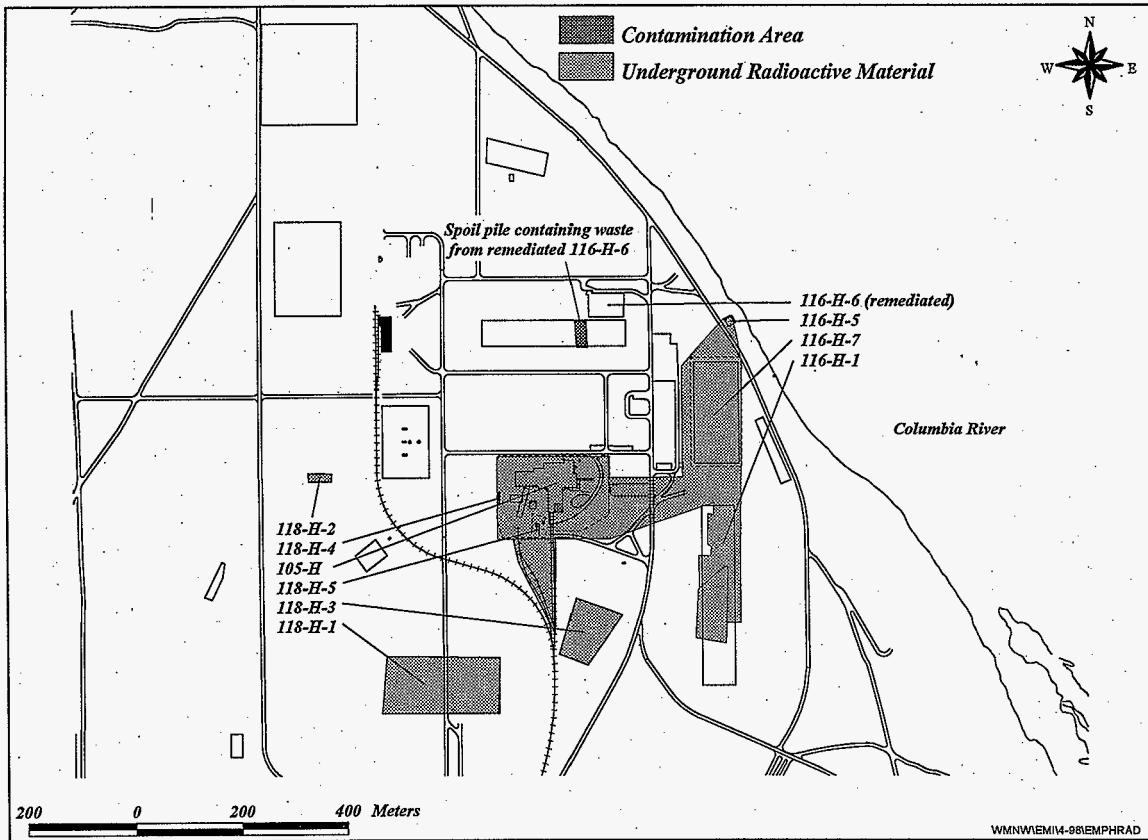
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Figure 2



HNF-SP-0065-28

Figure 3  
4



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Figure 4

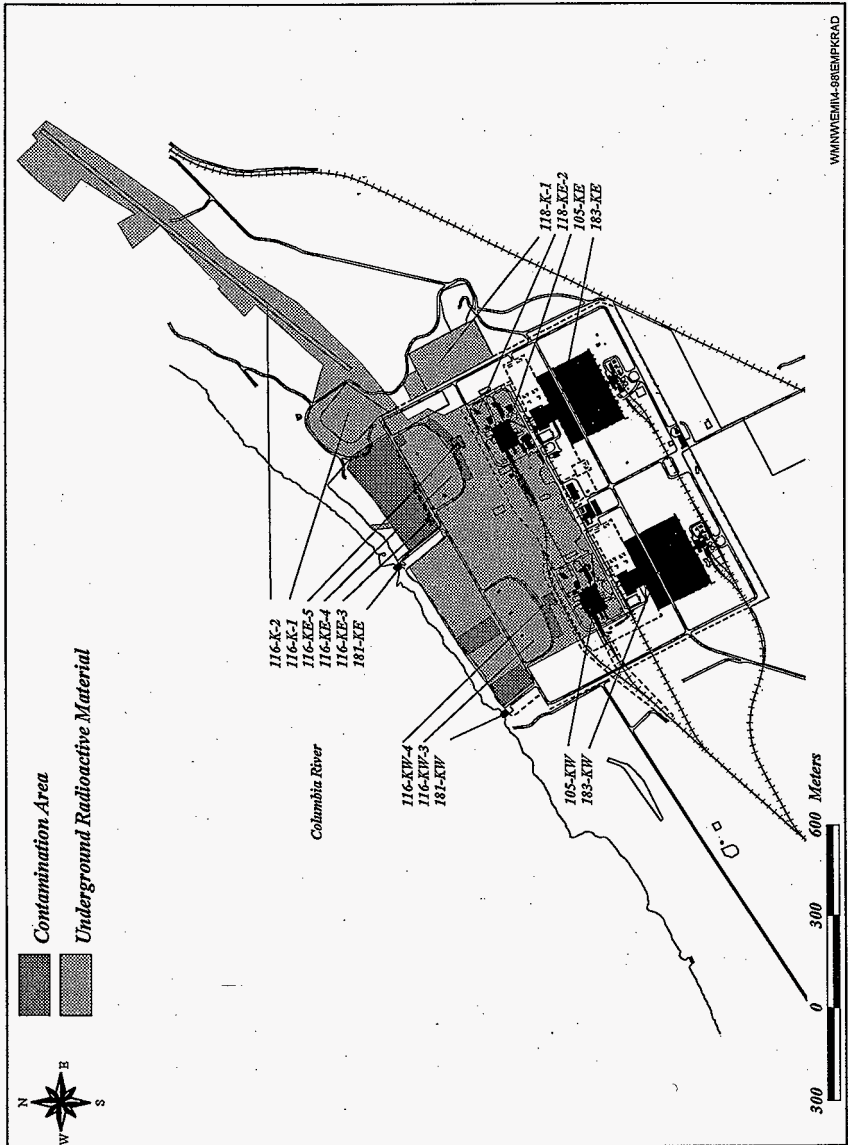
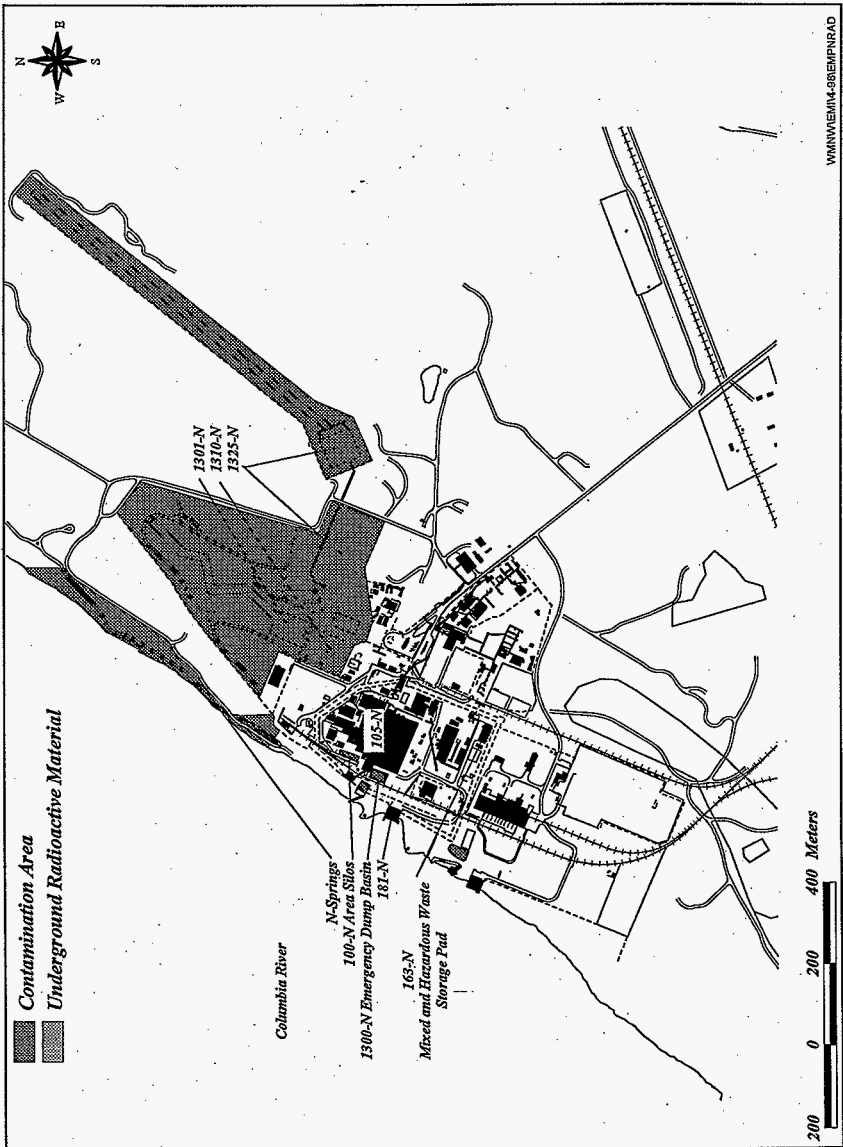


Figure 5



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Figure 6

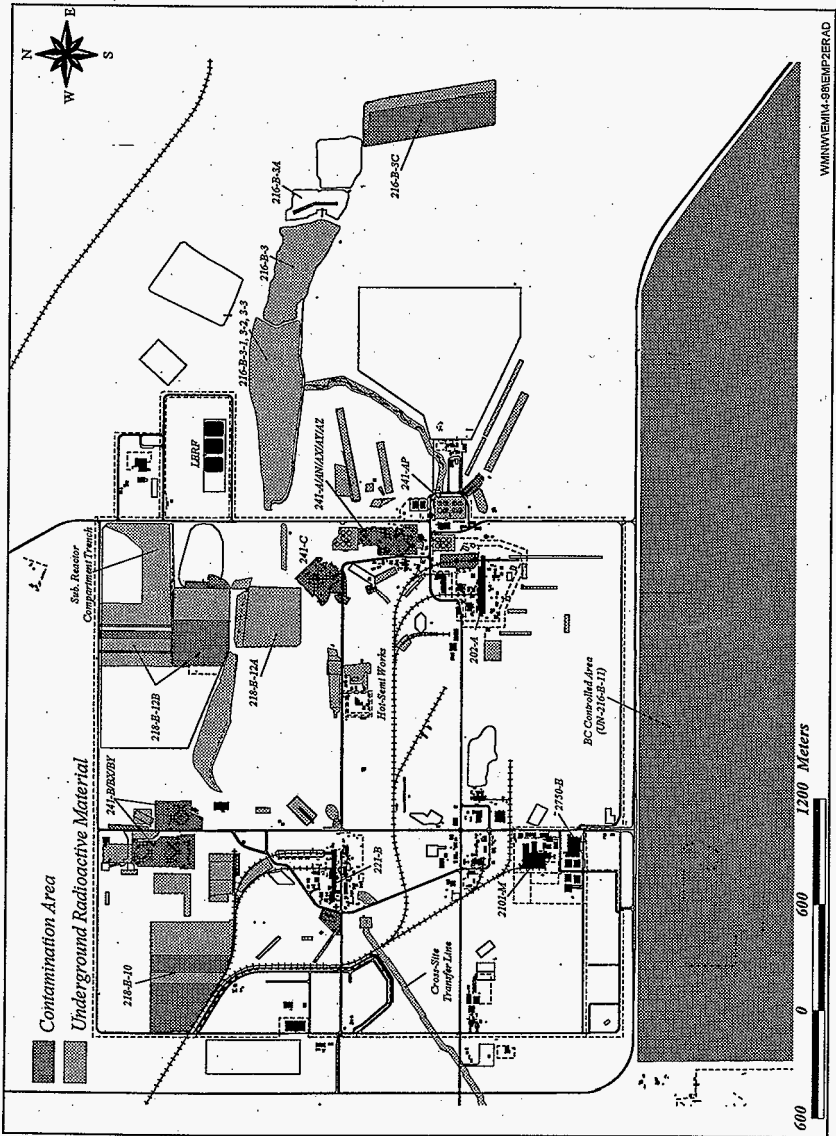


Figure 7



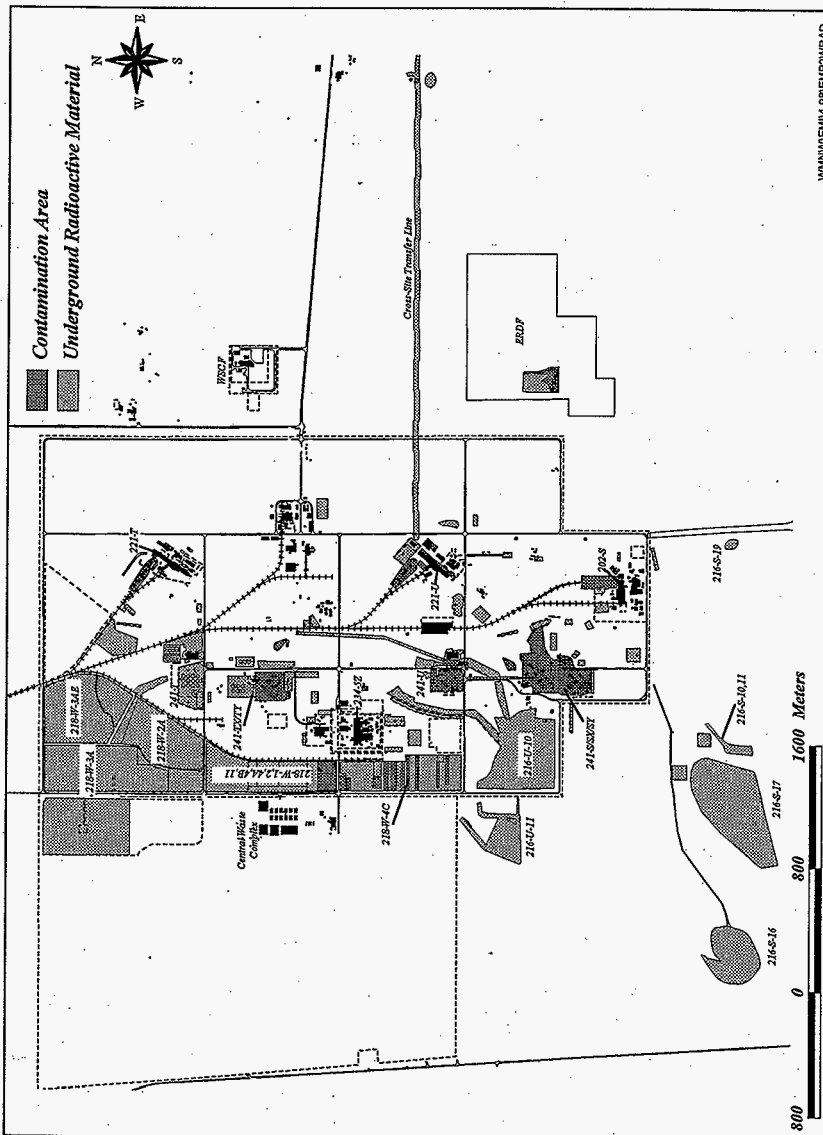


Figure 8

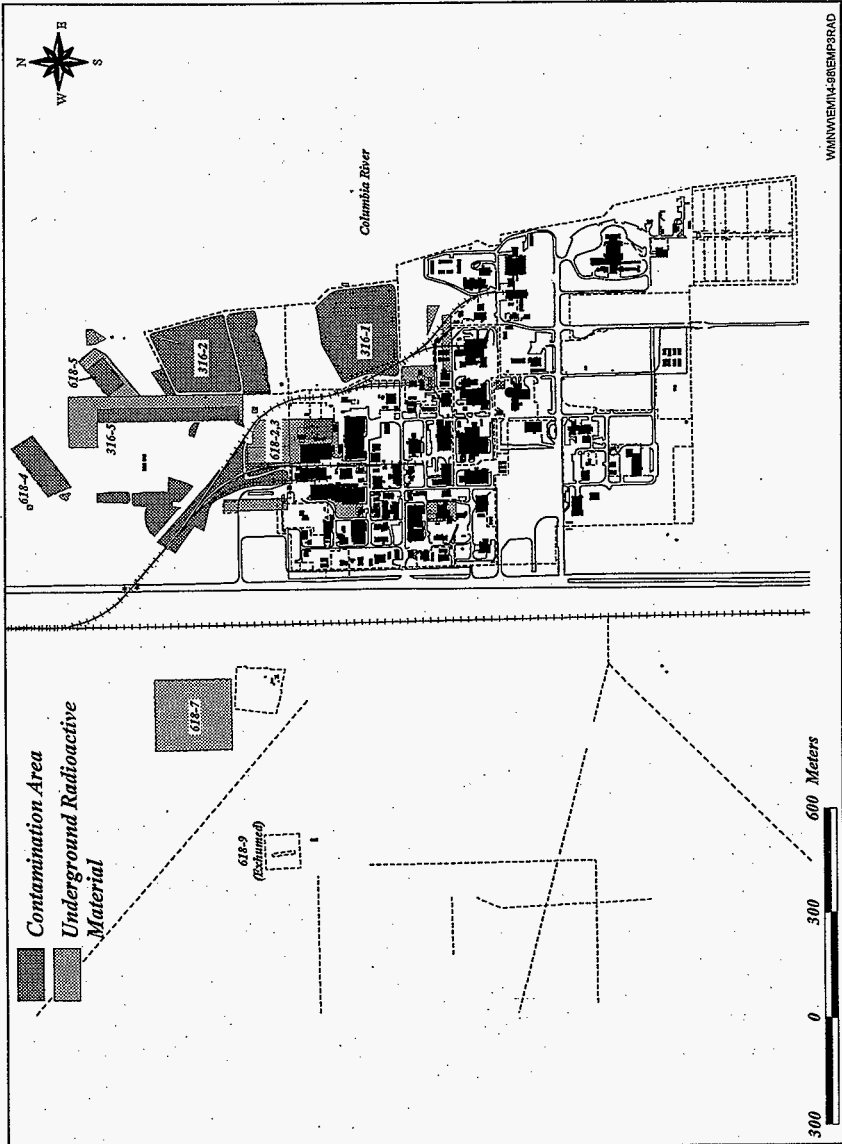


Figure 9

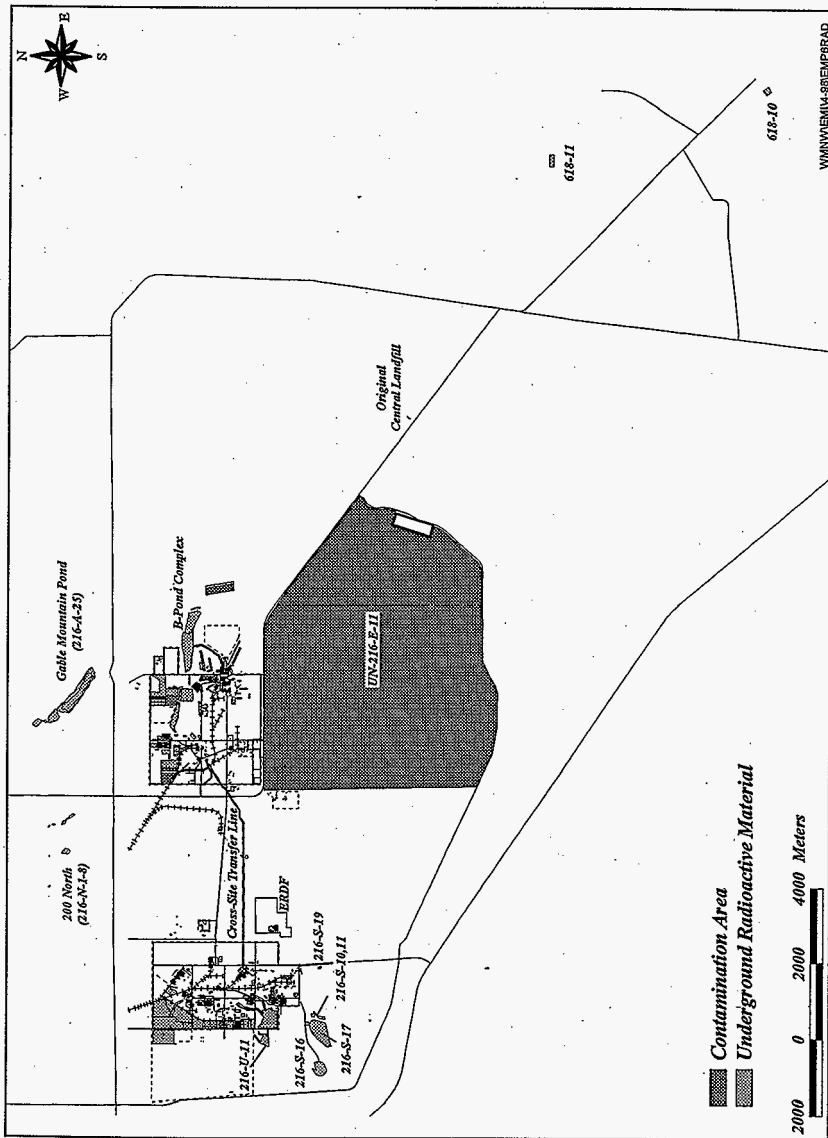


Figure 10

*Table 1. Open Surveillance/Compliance Inspection Reports*  
(maximum 15 points)

SCIR/CAR	SITE	DATE INITIATED	MONTHS OPEN	ECD	SITE RANKING	CUSTODIAN
8909EP200-036	241-B FARM PERIMETERS	09/01/89	100	09/30/98	13	TFO
9007EP200-056	BX-BY TANK FARM PERIMETERS	07/20/90	89	09/30/98	13	TFO
9008EP200-068	C-TANK FARM PERIMETERS	08/13/90	88	09/30/98	13	TFO
9208ERI-006	241-S, SX, SY TANK FARM PERIMETERS	08/14/92	64	09/30/98	12	TFO

HNF-SF-0065-28

## 2.0 PROGRAM DESCRIPTION

### 2.1 ENVIRONMENTAL RADIOLOGICAL SURVEY OBJECTIVES

Environmental radiological surveys are performed to:

- Identify priorities for environmental cleanup or stabilization of surface contamination.
- Determine compliance with Department of Energy requirements and applicable policies and standards regarding operational control and environmental and radiological protection.
- Identify trends in radioactive contamination levels and contamination migration at waste sites and other radiological areas.
- Assess the surface integrity of solid and liquid waste disposal sites.
- Monitor for unplanned releases of radioactivity to the operations area environment.

### 2.2 PRIORITY RANKING SYSTEM

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

A numerical value is assigned based on the level of contamination, site accessibility, and contamination mobility. Site histories are examined by reviewing past and present radiological surveys. Contamination levels from 1,000 counts per minute (dpm) to greater than 10 mrad/hr (as measured on Radiological Control's field survey instruments) are considered and assigned a numerical value of 1 (lowest value) to 5 (greatest value). Any removable alpha contamination will be considered a high priority and will receive a contamination value of 5. Location is evaluated for accessibility. A restricted area would receive the lowest point value of 1 progressing up to a value of 5 where the public could have access. Mobility refers to 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 1 progressing to contamination that is blown by the wind or the result of biological uptake receiving a value of 5. There is a maximum of 15 points possible for this ranking system.

It should be noted that this system is not intended to be a total risk assessment, but rather a way of communicating environmental significance to the landlords and their program offices. Other elements of the site clean-up process are considered such as costs, location, public/regulatory interest and engineering strategies before a site is actually remediated.

### 2.3 ENVIRONMENTAL STANDARDS

Radiological survey data are used to determine compliance of Radioactive Waste Sites with HNF-PRO-454, *Inactive Waste Sites*, HNF-PRO-455, *Solid Waste Management*, and BHI-EE-02, *Environmental Requirements*, Section 7.0 (Rev. 0), requirements.

Environmental Monitoring and Investigations is responsible for:

1. Establishing environmental radiological survey schedules of active and inactive radiological waste sites.
2. Compiling and maintaining copies of historical records, including radiological survey reports, compliance assessment reports (CARs), surveillance/compliance inspection reports (SCIRs), and other information for each active and inactive radioactive waste site.

3. Trending radiological data, and issuing reports on the status of radiological surveys and compliance assessments for active and inactive radioactive waste sites.
4. Reviewing any proposed activity, other than routine inspections, that may impact or may be impacted by any active and inactive waste site.

Facility Managers/Landlords are responsible for the following requirements:

1. Engineered barriers shall be provided, where applicable, over the disposal site to inhibit radionuclide transport to the surface.
2. Inactive waste site boundaries shall be accurately and permanently marked with Hanford plant standard (AC-5-40) approved concrete marker posts. Sites never used and those that are no longer contaminated do not require marker posts.
3. Facility effluent lines which are potential discharge points shall be isolated, capped, or sealed off to prevent accidental releases to inactive sites. This shall be verified and documented.
4. Active and inactive waste sites shall be inspected and surveyed at least annually.
5. One or more of the following actions shall be taken when contamination of any type is detected (either new or in excess of action limits) to prevent the migration or mobilization of the contamination:
  - Small-scale stabilization (<5 acres)
  - Vegetation removal
  - Radioactive hot-spot removal
  - Fencing
  - Posting
  - Herbicide spraying
  - Immediate spill response
  - Other corrective measures
6. Information regarding all suspect waste sites or newly identified waste sites shall be provided for documentation into the Environmental Sites Database/Waste Identification Data System (ESD/WIDS).
7. Inactive waste sites shall be maintained to control deep-rooted vegetation that could provide transport of contamination to the surface through plant uptake. The application of herbicides or pesticides may be required.

The above mentioned requirements apply to all active and inactive radioactive waste sites which include cribs, trenches, ditches, ponds, French drains, underground pipelines, burial grounds and other areas of concern such as the perimeters of tank farms and active burial grounds, and radioactive contamination due to spills or releases. Interiors of tank farms, active burial trenches and radiological areas where operations are ongoing are not included, because monitoring and tracking is done by the facility operations and other requirements are applicable to these areas.

In order to compare standards listed in (HNF-PRO-454, *Inactive Waste Sites*, HNF-PRO-455, *Solid Waste Management* and HSRM-1, *Hanford Site Radiological Control Manual*) with field instrument values, a conversion factor is necessary. This conversion factor has been established where 20,000 dpm (2,000 cpm) are approximately equivalent to one millirem per hour for beta-emitting radionuclides. It must be understood that converting field instrument values, which include both beta and gamma energies, is approximate and does not allow for absolute precision.

## 2.4 SURVEY METHODS AND PROCEDURES

Surveys documented by this report include road/railroad surfaces, 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 WMNW-CM-004, *Environmental Monitoring*; HSRCM-1, *Hanford Site Radiological Control Manual*; HNF-PRO-677, *Release Surveys*; HNF-PRO-678, *Survey Method for Reposting Outdoor Contamination Areas*; HNF-PRO-679, *Radiological Survey Report*; and HNF-PRO-683, *Scheduled Radiation Survey Report*.

### 2.4.1 ROAD/RAILROAD SURVEYS

Road and Railroad Surveys are conducted with a vehicle equipped with "high railers", which allows the vehicle to travel both on the roads or railroads, and sodium iodide detectors. The detector height is adjustable and the average survey height is six inches.

The vehicle is driven at less than five miles per hour. If activity above background is detected, the vehicle is stopped and a thorough survey is made with a portable count rate meter equipped with a pancake type probe to identify the extent of the contamination. Appropriate management is notified if road/railroad contamination is identified and corrective actions are initiated.

### 2.4.2 WASTE SITES AND OTHER RADIOLOGICAL AREA SURVEYS

Surveys at waste sites and other radiological areas may be conducted with vehicles equipped with radiation detection instruments or with portable field instruments. Field instrument survey results are reported in disintegrations per minute (using a correction factor of 10 dpm/cpm) as detected by using a Geiger-Mueller detector for beta/gamma radiation equipped with a pancake type probe. Alpha survey results are reported in disintegrations per minute (using a correction factor of 7 dpm/cpm) 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. Detailed survey practices and procedures are described in WMNW-CM-004, *Environmental Monitoring*; HSRCM-1, *Hanford Site Radiological Control Manual*; HNF-PRO-677, *Release Surveys*; HNF-PRO-678, *Survey Method for Reposting Outdoor Contamination Areas*; HNF-PRO-679, *Radiological Survey Report*; and HNF-PRO-683, *Scheduled Radiation Survey Report*.

### 3.0 RADIOLOGICAL SURVEY RESULTS

All the routine environmental radiological surveys scheduled during the first quarter 1998 were completed as planned.

Surveys of active and inactive waste disposal sites included cribs, trenches, burial grounds, covered ponds and covered ditches. The survey schedule for environmental sites is outlined in WMNW-CM-004, Section 12, and in HNF-SP-0098-9, Rev. 0.

One hundred fifteen environmental radiological surveys were performed during the first quarter of 1998. Contamination above background levels was found at eight of the surveyed PHMC waste site areas and six of the ERC waste site areas. Contamination levels ranging from a low of 4,200 dpm to a high of >1,000,000 dpm were reported. Of the contamination found, eleven sites were located in URM areas and three sites were located in CA/SC areas.

The contamination found in six of the URM areas was immediately cleaned up and no further action was required. The contamination found in the remaining five URM and three CA/SC areas were posted and will require decontamination. Radiological Problem Reports were issued and the remaining sites were turned over to the landlord for further action.

The radiologically contaminated areas have been reposted to meet the new requirements as outlined in the *Hanford Site Radiological Control Manual*, HSRCM-1. The posting includes Contamination, High Contamination (activity >100,000 dpm/100 cm<sup>2</sup> β/γ and/or >10,000 dpm/100 cm<sup>2</sup> α), Soil Contamination, Underground Radioactive Material, Radiological Buffer, and Radiation/High Radiation Areas. For continuity between quarterly reports, the use of Surface Contamination (SC) areas in this report includes Contamination, High Contamination, and Soil Contamination areas.

### 3.1 RADIOLOGICAL SURVEY SUMMARY

This report provides a summary of the radiological survey results conducted during the first quarter 1998. The stabilization efforts and release survey for one waste site resulted in the down posting from CA/SC to released from radiological posting of 0.23 hectares (0.57 acres).

During the first quarter, stabilization efforts and release survey for the 120-F-1 Glass Dump was completed and the site was radiologically released from posting.

While conducting radiological surveys, contaminated media was encountered and collected for analysis and/or disposal. Media found above actions levels defined in HSRCM-1, *Hanford Site Radiological Control Manual*; HNF-PRO-677, *Release Surveys*; HNF-PRO-678, *Survey Method for Reposting Outdoor Contamination Areas*; HNF-PRO-679, *Radiological Survey Report*; and HNF-PRO-683, *Scheduled Radiation Survey Report* are documented with a Radiological Problem Report and/or an Occurrence Report. The samples that are deemed appropriate are sent in for analysis (Table 2). The results of these analysis can be found in the *Hanford Site Near-Facility Environmental Monitoring Annual Report* which is published in August of each year.

Abbreviations used in Table 2 are as follows:

- NS - Not submitted for analysis.
- NR - No activity recorded in the field.
- <D - Less than detectable with field instruments.



Table 2. 1998 Contaminated Samples

SAMPLE NUMBER	DATE	DESCRIPTION	LOCATION	DOCUMENT	ACTIVITY (dpm) B/G
N/A	01/05/98	Tumbleweeds	Inside 200-E perimeter fence @ 8th & Canton Ave.	PHMC-FSS-98-0001	1,500,000
N/A	01/07/98	Gravel and Asphalt	Outside roll-up doors at 105-N Building	BHL-NREACTOR-98-001	30,000
N/A	01/07/98	Soil (Coyote Urine)	2904-S-160 Diversion Box	RSR-TS-98-0004	10,200
N/A	01/08/98	Tumbleweed	216-U-11 Stabilized Trench	RSR-TS-98-0005	4,200
N/A	01/21/98	Speck	216-U-10 Pond	BHL-GENAREAS-98-001	72,000
N/A	01/23/98	Soil Speck	Just south of the 3734 concrete slab, 300 Area	PHMC-FSS-98-002	15,000
N/A	01/27/98	Speck	216-U-5	RSR-TS-98-0042	> 1,000,000
N/A	02/02/98	Soil	216-T-21 through 24	RSR-TS-98-0055	20,000
N/A	02/03/98	Speck	216-T-5	RSR-TS-98-0060	120,000
N/A	02/03/98	3-Mice	2025-E Building	SS 246737	5,500
N/A	02/06/98	15 Tumbleweeds	Cross Site Transfer Line East of Fuel Station	SS 246748/TNKFARM-98-0014	180,000
N/A	02/09/98	Tumbleweed	Cross Site Transfer Line East of Fuel Station	SS 246752	30,000
N/A	02/17/98	Tumbleweed	218-E-12B	2/23/97 Morning Report	400,000
N/A	02/18/98	Soil Specks	241-ER-151	SS 246776	26,000
N/A	02/24/98	Specks	241-TX-155 Diversion Box	SS 246795	60,000
N/A	02/27/98	Two Specks	Adjacent to BX-302-C Underground Storage Tank	TANKFARM-98-0018	30,000
N/A	03/16/98	Sample Valve #59A-204	291 Load in Station @the 200 LWPF	200LWPF-98-0003	15,000
N/A	03/17/98	Soil Specks and Debris	UPR-200-E-95 (UN-216-E-23)	SS 247054	> 1,000,000
N/A	03/18/98	Fork Lift Radiator	2711-E Garage	SOLIDWASTE-98-0002	60,000
N/A	03/18/98	Soil Speck	241-TX-152 Diversion Box	TANKFARM-98-0025	350,000
N/A	03/24/98	Portable Diesel fuel Tank	1163 Excess Yard	TANKFARM-98-0030	35,000
N/A	03/24/98	Soil & Tumbleweeds	200-E Portion of Cross Site Transfer Line	SS 247080	30,000
N/A	03/25/98	Brick	UPR-200-E-98 (UN-216-E-26)	SS-247085	230,000

**3.2 SURVEILLANCE AND COMPLIANCE INSPECTION REPORTS CLOSED**

No SCIR's were closed during the first quarter 1998.

**3.3 STATUS OF OPEN SURVEILLANCE AND COMPLIANCE INSPECTION REPORTS**

Four SCIRs, from past activities, remained open at the end of the first quarter of 1998. These reports are summarized on Table 1 to include the referenced site number, priority ranking points (maximum of 15 points based on contamination levels, location and mobility), responsible custodian, SCIR report number, and estimated completion date.

Abbreviations used on Table 1 include:

SCIR - Surveillance/Compliance Inspection Report  
ECD - Estimated Completion Date  
ERC - Environmental Restoration Contractor  
TFO - Tank Farm Operations  
PTS - Points  
TBD - To Be Determined

#### 4.0 DEEP ROOTED VEGETATION ON RADIOLOGICALLY CONTROLLED SITES

Waste management, environmental protection, safety and 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. Many waste sites at Hanford have been surface stabilized, but contain radiological contaminants within a few feet of the ground surface.

Deep-rooted vegetation (e.g., tumbleweeds) growing over underground sources of radionuclides can draw contaminants into their roots. When nuclides are transported from roots to aerial portions of the plant, surface contamination is created. This surface contamination poses a risk of environmental transport or human contact and can be very costly.

The PHMC procedure, HNF-PRO-454, *Inactive Waste Sites*, requires that the facility managers and landlords keep all waste sites free of tumbleweeds.

A review of radiological reports (Radiological Problem Reports, Occurrence Reports, and Radiological Survey Records) indicates that during the first quarter of 1998, there were six incidents of contaminated tumbleweeds. Table 3 shows the incidents of contaminated tumbleweeds found and the range of activity encountered between 1994 and the first quarter of 1998.

Table 3. Contaminated Tumbleweed Incidents (1994 through March 1998)

Year	Number of Incidents	Max. Activity (dpm)B/G	Min. Activity (dpm)B/G
1998	6	1,500,000	30,000
1997	39	>1,000,000	2,500
1996	19	800,000	6,000
1995	11	250,000	2,000
1994	19	600,000	2,000

## 5.0 SUMMARY

All the routine outdoor radiological surveys were completed during the first quarter of 1998 in the 100, 200-East/West, 300 and 600 areas with no exceptions.

No SCIR's were closed (Section 3.3)

Four SCIRs remain open. Open reports have been addressed and clean-up plans with completion dates have been developed or are to be provided to Environmental Monitoring and Investigations.

### RADIOLOGICAL POSTING CHANGES

An on going 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 Environmental Restoration Contractor and by the facility managers. During the first quarter of 1998, 0.23 hectares (0.57 acres) were stabilized and released from radiological posting. From the beginning of 1991 through the end of the first quarter of 1998, 565 hectares (1,385 acres) have been stabilized and down posted to URM with 3,990 hectares (9,859 acres) remaining to be stabilized and down posted or cleaned up and released. Table 4 shows the downward trend of the contamination status during this time period.

Radiological posting changes, by waste site, noted during the first quarter of 1998, are as follows:

The 120-F-1 Glass Dump waste pit was covered with thirty sheets of plywood to provide a demarcation layer to aid in future remediation. Soil from the original excavation was placed over the plywood ranging in depth from 6 inches to two feet. The site was released from radiological posting 0.23 hectares (0.57 acres).

The Environmental Restoration Disposal Facility (ERDF) started receiving waste in July 1996. Currently the ERDF consists of two cells, measuring 230 m (750 ft.) wide by 305 m (100 ft.) long and 24 m (80 ft.) deep, capable of holding 1.4 million tons of waste material. The waste comes from remediation activities in the 100B/C, 100D, and 300 Areas. Mapping the changes in contamination and underground radiation areas in the ERDF will be conducted semiannually. Currently there are 13.9 hectares (34.4 acres) available for waste disposal, with the URM area being reported as 1.9 hectares (4.8 acres) and the contamination area being reported as 1.1 hectares (2.7 acres).

**Table 4. Outdoor Contamination Status (CA/SC Areas) 1991 through March 1998**  
 [approximate surface area in hectares (acres)]

Hanford Site Area	1991	1992	1993	1994	1995	1996 <sup>a</sup>	1997	1998
100 Areas	65(160)	65(160)	65(160)	63(155)	52(129)	47(116)	47(116)	47(116)
200 Areas	157(389)	133(329)	129(318)	105(261)	92(228)	99(245)	91(225)	91(225)
300 Areas	18(45)	18(45)	18(45)	21(52)	21(52)	20(49)	20(49)	20(49)
600 & BC Control Areas	1,465(3,620)	1,060(2,620)	1,063(2,627)	1,063(2,627)	1,063(2,627)	3,850(9,513) <sup>b</sup>	3,832(9,469) <sup>c</sup>	3,832(9,469) <sup>c</sup>
Totals	1,705(4,214)	1,276(3,154)	1,275(3,150)	1,320(3,261)	1,275(3,150)	4,016(9,923)	3,990(9,859)	3,990(9,859)

Note: <sup>a</sup> There are some discrepancies as to the total acreage reported and areas remediated. This is due to the gained accuracy in measurement from the exclusive use of GPS equipment for the measurement of the contaminated surface areas.

<sup>b</sup> The large increase in 600 & BC Control Areas is due to increased acreage posted around the BC Cribs Control Area.

<sup>c</sup> The ERDF was added during the 3<sup>rd</sup> quarter of 1997, 1.9 ha (4.8 acres).

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