Routine Environmental Monitoring Schedule, Calendar Year 1998

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ROUTINE ENVIRONMENTAL MONITORING SCHEDULE,
CALENDAR YEAR 1998

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CONTENTS

PURPOSE	1
ENVIRONMENTAL RESTORATION CONTRACTOR	
ANNUAL SCHEDULE	3
JANUARY/FEBRUARY/MARCH	5
APRIL/MAY/JUNE	6
JULY/AUGUST/SEPTEMBER	7
OCTOBER/NOVEMBER/DECEMBER	8
PROJECT HANFORD MANAGEMENT CONTRACTOR	
ANNUAL SCHEDULE	11
JANUARY	13
FEBRUARY	14
MARCH	15
APRIL	16
MAY	17
JUNE	18
JULY	19
AUGUST	20
SEPTEMBER	21
OCTOBER	22
NOVEMBER	23
DECEMBER	24
APPENDIX A SURVEY SITES AND SAMPLE LOCATIONS	
APPENDIX B DESCRIPTIONS OF 200 AREA UNPLANNED RELEASE SITES	

TERMS

BHI	Bechtel Hanford, Inc.
CA	Contamination Area
cpm	Counts Per Minute
dpm	Disintegrations Per Minute
DSI	Don't Say It - Write It (an informal internal memorandum)
ERDF	Environmental Restoration Disposal Facility
HSRCM	Hanford Site Radiological Control Manual
LERF	Liquid Effluent Retention Facility
mrad/hr	Millirad per hour
NFM	Near-Facility Monitoring
PHMC	Project Hanford Management Contract
PUREX	Plutonium-Uranium Extraction (Plant)
RC	Radiological Control
REDOX	Reduction-Oxidation (S Plant)
TLD	Thermoluminescent dosimeter
UNH	Uranyl Nitrate Hexahydrate
URM	underground radiation material

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PURPOSE

This document provides the Environmental Restorations Contractor (ERC) and the Project Hanford Management Contractor (PHMC) a schedule in accordance with the HNF-PRO-454, *Inactive Waste Sites*¹, HNF-PRO-455, *Solid Waste Management*² and BHI-EE-02, *Environmental Requirements*³, of monitoring and sampling routines for the near-facility environmental monitoring program during calendar year (CY) 1998. Every attempt will be made to consistently follow this schedule; any deviation from this schedule will be documented by an internal memorandum (DSI) explaining the reason for the deviation. The DSI will be issued by the scheduled performing organization and directed to Environmental Monitoring and Investigations.

The survey frequencies for particular sites are determined by the technical judgment of Environmental Monitoring and Investigations and may depend on the site history, radiological status, use, and general conditions. Additional surveys may be requested at irregular frequencies if conditions warrant. All radioactive wastes sites are scheduled to be surveyed at least annually. Any newly discovered wastes sites not documented by this schedule will be included in the revised schedule for CY 1999.

The outside perimeter road surveys of 200 East and West Area and the rail survey from the 300 Area to Columbia Center will be performed in the year 2000 per agreement with Department of Energy, Richland Field Office.

This schedule does not discuss staffing needs, nor does it list the monitoring equipment to be used in completing specific routines. Personnel performing routines to meet this schedule shall communicate any need for assistance in completing these routines to Radiological Control management and Environmental Monitoring and Investigations.

After each routine survey is completed, a copy of the survey record, maps, and data sheets will be forwarded to Environmental Monitoring and Investigations. These routine surveys will not be considered complete until this documentation is received. At the end of each month, the ERC and PHMC radiological control organizations shall forward a copy of the Routine Sign-off Sheet and a DSI validating the completion of the scheduled routine surveys for that month.

In this schedule the contaminated areas on the maps are classified as "Contamination Areas" (CA) and "Underground Radioactive Materials Areas" (URM). These areas correspond to the contamination areas in the Hanford Site Radiological Control Manual (HSRCM) as follows:

¹ HNF-PRO-454, *Inactive Waste Sites*, Project Hanford Management Contract, Richland, Washington.

² HNF-PRO-455, *Solid Waste Management*, Project Hanford Management Contract, Richland, Washington.

³ BHI-EE-02, *Environmental Requirements*, Bechtel Hanford, Inc., Richland, Washington.

The "Contamination Areas" include Contamination, High Contamination (activity $>100,000$ dpm/100 cm² β/γ and/or $>10,000$ dpm/100 cm² α), Soil Contamination, and Radiation/High Radiation Areas. The "Underground Radioactive Materials Areas" remain the same.

ENVIRONMENTAL RESTORATION CONTRACTOR

ANNUAL SCHEDULE

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JANUARY/FEBRUARY/MARCH

QUARTERLY/TRI-ANNUALLY/SEMI-ANNUALLY

1. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

Note: 200/300/600 Area waste sites are inspected tri-annually, those sites listed as TSD sites are inspected quarterly. 100 Area waste sites are inspected semi-annually. See BHI-OP-0084, Rev. 0, Surveillance of 100/200/600 Area Inactive Waste Sites.

ANNUALLY

1. 316-1, 316-2, 316-4, and 316-5.
2. 618-1, 618-2, 618-3, 618-4, 618-5, 618-7, 618-8, 618-10, 618-11.
3. 216-N-1 through 216-N-7.
4. 216-A-25 covered pond and extension.
5. 216-B-3-1, 216-B-3-2, and 216-B-3-3 covered ditches (includes UN-216-E-40).
6. 216-B-3 stabilized pond.
7. 216-A-29 ditch.
8. 216-A-24.
9. UN-216-E-33 (UPR-200-E-56).
10. 216-A-18.
11. 216-A-19 and 216-A-20.
12. 216-A-37-1.
13. 216-A-6.
14. 216-B-57 Perimeter and top surface area.
15. 200 East B cribs and trenches, drains, and reverse wells (216-B-5, 216-B-6, 216-B-7A, 216-B-7B, 216-B-8, 216-B-9, 241-B-361 tank, 216-B-11A, 216-B-11B, 216-B-12, 216-B-51, and 216-B-43 through 216-B-50).
16. 216-B-10A and 216-B-10B.
17. 200-E "C" cribs and trenches (216-C-1, 216-C-2, 216-C-3, 216-C-4, 216-C-5, 216-C-6, and 216-C-10).
18. 218-C-9 (216-C-9).
19. Unplanned release site surveys 200-E: UN-216-E-16 (UPR-200-E-88), UN-216-E-22 (UPR-200-E-94), and UN-216-E-26 (UPR-200-E-98).
20. 216-B-2-1, 216-B-2-2, and 216-B-2-3 covered ditches.
21. 216-B-35 through 216-B-42 trenches.
22. 218-E-1.
23. 218-E-2A.
24. 218-E-4.
25. 218-E-12A.
26. 218-E-8.
27. 216-A-10 crib.
28. Cribs and trenches, drains, and reverse wells, 216-A-1, 216-A-3, 216-A-7, 216-A-9, 216-A-27, and 216-A-36B.
29. UN-216-E-16 (UPR-200-E-88) TC-4 railroad spur perimeter.

APRIL/MAY/JUNE

QUARTERLY/TRI-ANNUALLY/SEMI-ANNUALLY

1. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

Note: 200/300/600 Area waste sites are inspected tri-annually, those sites listed as TSD sites are inspected quarterly. 100 Area waste sites are inspected semi-annually. See BHI-OP-0084, Rev. 0, Surveillance of 100/200/600 Area Inactive Waste Sites.

SEMI-ANNUALLY

1. BC cribs, controlled area roads, and firebreaks [UN-216-E-11 (UPR-200-E-83)].

ANNUALLY

1. 100-N Area micro-R survey 116-N-1 (1301-N), 116-N-3 (1325-N), N Springs (to be completed in October).
2. 116-N-3 (1325-N) fence line.
3. 116-N-1 (1301-N) fence line.
4. 116-N-4 (emergency dump basin [liquid effluent retention facility (LERF)]) fence line.
5. 118-N-1 burial ground [118-N (100-N Area silos)].
6. N Springs roads and boundary.
7. 100-N parking lot.
8. 100-N paved areas inside exclusion area.
9. 100-K URM area (includes: 116-KW-4, 116-KE-5, 116-KE-3).
10. 105-K exclusion area (includes: 116-KW-1, 116-KW-2, 116-KE-1, 116-KE-2, 118-KW-2, 118-KE-2).
11. 100-K flood plain contamination area.
12. 118-K-1 burial ground.
13. 116-K-1 crib.
14. 116-K-2 (mile-long trench).
15. 116-KE-4 (107-KE).
16. 116-KW-3 (107-KW).
17. 100-B/C URM area (includes 116-B-1, 116-B-2, 116-B-5, 116-B-7, 132-B-6 (116-B-8), 116-B-13, 116-B-14, 116-C-1, 116-C-2A, 132-C-2 (116-C-4), 118-B-2, 118-B-3, 118-B-4, 118-B-5, 118-B-6, 118-B-7, 116-C-5, 116-B-11).
18. 105-B/C exclusion area (includes 116-B-3, 116-B-4, 116-B-6A, 116-B-6B, 116-B-9, 116-B-10, 118-C-2, 118-C-4, 116-C-2B, 116-C-2C).
19. 100-B/C surface contamination area (includes 116-C-5, 116-B-11, 116-B-13).
20. 118-C-1 burial ground.
21. 118-B-1 burial ground.

JULY/AUGUST/SEPTEMBER

QUARTERLY/TRI-ANNUALLY/SEMI-ANNUALLY

1. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

Note: 200/300/600 Area waste sites are inspected tri-annually, those sites listed as TSD sites are inspected quarterly. 100 Area waste sites are inspected semi-annually. See BHI-OP-0084, Rev. 0, Surveillance of 100/200/600 Area Inactive Waste Sites.

ANNUALLY

1. 100-F underground radiation material (URM) area (includes: 116-F-2, 116-F-5, 116-F-6, 116-F-8, 116-F-9, 116-F-10, 116-F-12, 116-F-13, 118-F-3).
2. 105-F exclusion area (includes: 116-F-3, 116-F-4, 116-F-11, 118-F-4).
3. 107-F retention basin (116-F-4).
4. 100-F ash pit.
5. 116-F-1 Lewis canal.
6. 118-F-1 burial ground.
7. 118-F-2 burial ground.
8. 118-F-5 burial ground.
9. 118-F-6 burial ground.
10. 116-F-7 crib (117-F crib) 68 meters due south of exclusion fence.
11. 100-F-2 Strontium Garden Perimeters at 100-F Area.
12. 100-H URM area [includes: 116-H-1, 116-H-2, 116-H-5, 116-H-4 (105-H Pluto Crib)].
13. 105-H exclusion area (includes: 116-H-3, 118-H-4, 118-H-5).
14. 116-H-6 solar basin (183-H).
15. 116-H-7 retention basin.
16. 118-H-1 burial ground.
17. 118-H-2 burial ground.
18. 118-H-3 burial ground.
19. 116-H-9 (117-H crib) 28 meters west and 27 meters north of the southwest corner of 105-H exclusion fence.
20. 100-D/DR URM area [includes: 116-DR-1 and 116-DR-2 (107 trenches), 116-DR-5, 116-DR-6, 118-D-3, 118-D-4, 116-D-5].
21. 105-D/DR exclusion area (includes: 116-D-1A, 116-D-1B, 116-D-2, 116-D-3, 116-D-4, 116-D-6, 116-DR-7, 116-DR-3, 116-DR-4).
22. 118-D-1 burial ground.
23. 118-D-2 burial ground.
24. 116-D-9 (117-D crib).
25. 118-D-5 burial ground.
26. 118-DR-1 burial ground.
27. 116-DR-8.
28. 100-D/DR contamination area (includes 116-D-7, 116-DR-9, and pipeline).
29. D island vent risers and surrounding area.

OCTOBER/NOVEMBER/DECEMBER

QUARTERLY/TRI-ANNUALLY/SEMI-ANNUALLY

1. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

Note: 200/300/600 Area waste sites are inspected tri-annually, those sites listed as TSD sites are inspected quarterly. 100 Area waste sites are inspected semi-annually. See BHI-OP-0084, Rev. 0, Surveillance of 100/200/600 Area Inactive Waste Sites.

SEMI-ANNUALLY

1. BC cribs, controlled area roads, and firebreaks [UN-216-E-11 (UPR-200-E-83)].

ANNUALLY

1. UN-216-E-17 (UPR-200-E-89).
2. 216-A-34.
3. 218-E-2, 218-E-5A, 218-E-5B, and 218-E-9 burial grounds.
4. BC cribs, 216-B-14 through 216-B-19.
5. BC trenches, 216-B-20 through 216-B-34, 216-B-52, 216-B-53A and 216-B-53B, 216-B-54, 216-B-58.
6. 218-E-7 burial vault.
7. 216-S-11 and 216-S-17.
8. 216-S-5 and 216-S-6.
9. 2904-S-171, 216-S-172.
10. 216-U-11.
11. 216-S-3 and 216-S-15.
12. 216-S-16 ditch and pond.
13. 216-S-10 ditch and Pond.
14. 216-S-19.
15. 216-S cribs and trenches (216-S-1, 216-S-2, 216-S-4, 216-S-5, 2904-S-170, and 2904-S-160 weirs, 216-S-7, 216-S-8, 216-S-9, 216-S-12, 216-S-13, 216-S-20, 216-S-21, 216-S-22, 216-S-23).
16. 216-U cribs and trenches (216-U-1, 216-U-2, 216-U-3, 216-U-5, 216-U-6, 216-U-8) and 241-U-361 tank.
17. 218-W-1, 218-W-2, 218-W-4A, and 218-W-11.
18. 216-Z-1, 216-Z-2, and 216-Z-3 cribs.
19. 216-Z-4, 216-Z-5, 216-Z-6, 216-Z-7, 216-Z-10, and 216-Z-17 stabilized areas.
20. 216-U-14 ditch (inactive section from 19th Street to 207-U Basin).
21. 216-T cribs, trenches, and reverse wells 216-T-2, 216-T-3, and 241-T-361 catch tank, 216-T-5 tile field (to include 216-T-7), 216-T-6, 216-T-8, 216-T-18, 216-T-19, 216-T-20, 216-T-26 through 216-T-28, 216-T-33, 216-T-34, 216-T-35, and 216-T-36.
22. 204-S stabilized area.
23. 216-T-14 through 216-T-17.

24. 216-U-10 covered pond [includes UN-216-W-14 (UPR-200-W-104), UN-216-W-15 (UPR-200-W-105), UN-216-W-16 (UPR-200-W-106), and UN-216-W-17 (UPR-200-W-107)].
25. UN-216-W-23 (UPR-200-W-113).
26. 218-W-1A burial ground.
27. 218-W-2A burial ground.
28. 218-W-3 burial ground.
29. 216-T-21 through 216-T-25 trenches.
30. UN-216-W-7 (UPR-200-W-99).
31. UN 216-W-5 (UPR-200-W-97).
32. 218-W-7 burial vault, 218-W-8 burial vault.
33. 218-W-9 burial vault [includes UN-216-W-19 (UPR-200-W-109)].
34. 216-Z cribs and trenches (216-Z-8, 216-Z-11, 216-Z-12, 216-Z-16, 216-Z-18, 216-Z-19).
35. 216-Z-20 [includes UN-216-W-20 (UPR-200-W-110)].
36. 207-S retention basin [includes UN-216-W-2 (UPR-200-W-95)].
37. 216-U-7 French Drain including UN-216-W-37 (UPR-200-W-162).
38. Reduction-Oxidation (S Plant/REDOX) railroad spur.
39. 216-U-12.
40. 216-T-4-1 Ditch and 216-T-4-1 (216-T-4A) pond.
41. 204-T Waste unloading station 200-W-21 (alpha contamination).
42. Unplanned release site surveys 200-W: UN-216-W-9 (UPR-200-W-101), UN-216-W-11 (UPR-200-W-138), UN-216-W-12 (UPR-200-W-102), UN-216-W-18 (UPR-200-W-108), UN-216-W-24 (UPR-200-W-14), UN-216-W-25 (UPR-200-W-115), UN-216-W-26 (UPR-200-W-116), UN-216-W-29 (UPR-200-W-164), UN-216-W-30 (UPR-200-W-165), UN-216-W-31 (UPR-200-W-166) and UN-216-W-37 (UPR-200-W-162).
43. 216-U-4 reverse well.
44. 216-U-4A French drain.
45. 216-U-4B reverse well.
46. 216-U-15 trench.
47. UN-216-W-4 (UPR-200-W-96).
48. UN-200-W-8 (UPR-200-W-8).
49. 207-U retention basin perimeter [includes UN-216-W-21 (UPR-200-W-111) and UN-216-W-22 (UPR-200-W-112)].
50. 241-WR Vault.

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PROJECT HANFORD MANAGEMENT CONTRACTOR

ANNUAL SCHEDULE

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JANUARY

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. Tritium and nitrate water samples.
2. 100 Areas to ERDF Remedial Activities Haul Route Intersections.
3. Survey of roads inside 200 East Area.
4. Survey of roads inside 200 West Area.

SEMI-ANNUALLY

1. 241-EW-151 Vent station perimeter and contamination area (cross site transfer line).

ANNUALLY

1. Highway survey (Route 4 South) 1100 Area to Wye Barricade, to include 300 and 400 Area access roads and parking lots.
2. Posted URM pipelines in 200 East Area (excluding cross site transfer line).

FEBRUARY

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. 244-A lift station perimeter.

ANNUALLY

1. 307 retention basin perimeter south of 340 building, 300 Area.
2. 316-3.
3. 216-C-7.
4. 241-TX-155 diversion box.
5. 241-ER-151 diversion box perimeter.
6. 241-ER-152 diversion box and surrounding CA/URM area.
7. Original Central Landfill [Located 2.4 km (1.5 mi) southeast of Army Loop Road, 30.5 m (100 ft) north of Highway 4 south].
8. Cross site transfer line (200-E Area section) UN-216-E-41 (UPR-600-20).
9. Route 4 south, 200 East Area hill to Wye Barricade.

MARCH

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. Thermoluminescent dosimeter (TLD) exchange 100 Area.
2. TLD exchange 200/600 Areas.
3. TLD exchange 300/400 Areas.
4. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

ANNUALLY

1. Cross-site transfer line from 200 East fence to access road near vent station UN-216-E-41 (UPR-600-20).
2. Unplanned release sites in 200 East Area: UN-216-E-7 (UPR-200-E-79), UN-216-E-8 (UPR-200-E-80), UN-216-E-10 (UPR-200-E-82), UN-216-E-13 (UPR-200-E-85), UN-216-E-15 (UPR-200-E-87), UN-216-E-18 (UPR-200-E-87), UN-216-E-26 (UPR-200-E-98).
3. Highway survey, from entrance to 200 West Area to Route 11A, Route 11A to Route 2 south to Highway 240 via Route 10.

APRIL

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. Tritium and nitrate water samples.
2. Survey of roads inside 200 East Area.
3. Survey of roads inside 200 West Area.
4. 100 Areas to ERDF Remedial Activities Haul Route Intersections.

ANNUALLY

1. UN-300-17 (UPR-300-17) (333 bldg).
2. UN-300-XX (333 bldg).
3. 618-1.
4. 216-A-40.
5. 216-A-8.
6. 216-B-4 reverse well.
7. 216-B-13.
8. 216-B-64.
9. 216-T-1 trench.
10. 216-T-4-2 ditch.
11. 216-T-4-2 pond (216-T-4B)
12. 300/400 Area soil and vegetation sampling.
13. Cross site transfer line from access road near vent station to 200 West Area fence [UN-216-E-41 (UPR-600-20)].
14. Highway survey, Yakima Barricade (Route 11A) to Route 4 South.
15. 216-U-14 (from 207-U to 216-U-10 pond).
16. 216-W-LWC Laundry Crib

MAY

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. 244-A lift station perimeter.

SEMI-ANNUALLY

1. 200 West Area tank farm perimeters:
 - A. 241-T.
 - B. 241-TX and 241-TY.
 - C. 241-S, 241-SX, and 241-SY (including 200-W-54).
 - D. 241-U.
2. 200 East Area Tank Farm Perimeters:
 - A. 241-A, 241-AN, 241-AP, 241-AW, 241-AX, 241-AY, and 241-AZ.
 - B. 241-B, 241-BX, and 241-BY.
 - C. 241-C.
3. Tumbleweed Surveys at North East corners of 200-E and 200-W Perimeter Fences.

ANNUALLY

1. 200/600 Areas soil and vegetation sampling (even numbered sites on even years and odd numbered sites on odd years).
2. 200/600 Area pond and ditch aquatic vegetation sampling.
3. 200/600 Area pond and ditch sediment sampling.
4. Highway survey, 100-N Area to intersection of Route 11A (Route 2N) to include all parking areas, paved access roads to 100 Areas, and Route 1 from Hanford townsite to 100-B Area.
5. Rail survey 200 West perimeter fence to 100-K and 100-N, including the lower route to May Junction and all sidings and spurs.
6. UN-216-E-9 (UPR-200-E-81).

JUNE

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. TLD exchange 100 Area.
2. TLD exchange 200/600 Areas.
3. TLD exchange 300/400 Areas.
4. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

ANNUALLY

1. Highway survey, West Lake to Route 6 (100-B cut-off), Route 6 to Route 11 A, Route 11 A to Intersection of Route 3.
2. Rail survey, 200 West Area railways, spurs, and sidings.
3. 216-U-16 crib.
4. 216-S-26 crib.
5. 216-U-17 crib.
6. 400 Area process pond perimeters.
7. 116-K-3 Outfall perimeter.
8. 1706 KE Facility perimeter.
9. 218-E-14 and 218-E-15 PUREX Tunnel perimeters.
10. Revisit old contamination areas that have been cleaned up and released. [UN-216-E-20/21 (UPR-200-E-92/93), UN-216-E-30 (UPR-200-E-101), UN-216-E-37, and UN-216-W-33 (UPR-200-W-163)].
11. 216-Z-20 (216-Z-19 ditch) replacement tile field.
12. 216-Z-1 ditch including UN-216-W-20 (UPR-200-W-110).
13. Posted URM pipelines in 200 East Area North of 7th Street (excluding cross site transfer line).

JULY

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. Tritium and nitrate water samples.
2. Survey of roads inside 200 East Area.
3. Survey of roads inside 200 West Area.
4. 100 Areas to ERDF Remedial Activities Haul Route Intersections.

SEMI-ANNUALLY

1. 241-EW-151 Vent station perimeter and contamination area (cross site transfer line).

ANNUALLY

1. 216-Z-9.
2. 207-A retention basin perimeter.
3. 207-B retention basin perimeter.
4. 207-SL retention basin perimeter.
5. 207-T retention basin perimeter (includes 216-T-12 sludge pit).
6. 216-B-59 retention basin perimeter.
7. 216-A-42 retention basin perimeter (207-AA).
8. 100 Area soil and vegetation sampling.
9. Highway survey, from intersection of Route 3 and Route 4 north to 100-N.
10. Rail survey, 200 East Area railways, spurs, and sidings.
11. Manhole covers along supply and discharge lines to the 300 Area Treated Effluent Disposal Facility.
12. UN-216-E-22 (UPR-200-E-94).

AUGUST

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. 244-A lift station perimeter.

ANNUALLY

1. UN-300-5 (UPR-300-5) (309 tank farms).
2. UN-200-W-8 (UPR-200-W-8) (old burial ground east of U Plant).
3. 216-A-37-2
4. 216-B-63 ditch survey.
5. Unplanned release site surveys 200 West Area: UN-216-W-6 (UPR-200-W-98), UN-216-W-12 (UPR-200-W-102), and UN-216-W-28 (UPR-200-W-118).
6. 216-B-3C pond perimeter (active).
7. 216-B-3A and 216-B-3B (inactive).
8. Road survey of route 3 from 200 West Area main gate, to route 4 south, to the 200 East Area hill.

SEPTEMBER

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. TLD exchange - 100 Area.
2. TLD exchange - 200/600 Areas.
3. TLD exchange - 300/400 Areas
4. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

ANNUALLY

1. N Springs water sampling.
2. Unplanned release site survey 200 East Area: UN-216-E-5 (UPR-200-E-77), UN-216-E-6 (UPR-200-E-78), UN-216-E-12 (UPR-200-E-84) perimeter, UN-216-E-14 (UPR-200-E-86), UN-216-E-23 (UPR-200-E-95), UN-216-E-36 (UPR-200-E-64), UN-216-E-43 (UPR-200-E-143), and UN-216-E-44 (UPR-200-E-144).
3. 200-E-43 (PUREX RR tank car storage perimeter).
4. 216-A-36A crib.
5. 216-A-45 crib.
6. 216-A-30 crib.
7. 216-B-55 crib.
8. 216-B-62 crib.

OCTOBER

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. Tritium and nitrate water samples.
2. Survey of roads inside 200 East Area.
3. Survey of roads inside 200 West Area.
4. 100 Areas to ERDF Remedial Activities Haul Route Intersections.

SEMI-ANNUALLY

1. Tumbleweed Surveys at North East corners of 200-E and 200-W Perimeter Fences.

ANNUALLY

1. UN-300-11 (UPR-300-11)(east of 340 building), UN-216-W-18 (UPR-200-W-108), UN-216-W-35 (UPR-200-W-161), UN-216-W-36 (UPR-200-W-160), UN-216-W-37 (UPR-200-W-162) and 241-WR vault [includes UN-216-W-9 (UPR-200-W-101)] and UN-216-W-11 (UPR-200-W-138).
2. Cross site transfer line (200-W Area section) UN-216-E-41 (UPR-600-20).
3. Posted URM pipelines in 200 West Area (excluding east/west transfer line).
4. Railroad survey, 300 Area to 400 and 200 West Areas, to include all sidings and spurs external of fence boundaries of areas.

NOVEMBER

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. 244-A lift station perimeter.

SEMI-ANNUALLY

1. 200 West Area tank farm perimeters:
 - A. 241-T.
 - B. 241-TX and 241-TY.
 - C. 241-S, 241-SX, and 241-SY (including 200-W-54).
 - D. 241-U.
2. 200 East Area tank farm perimeters:
 - A. 241-A, 241-AN, 241-AX, 241-AY, and 241-AZ.
 - B. 241-AP.
 - C. 241-AW.
 - D. 241-B.
 - E. 241-BX and 241-BY.
 - F. 241-C.

ANNUALLY

1. Outside perimeters of all active West Area burial grounds (218-W-3A, 218-W-3AE, 218-W-4B, 218-W-4C, 218-W-5).
2. Surface of the stabilized portion of 218-W-4B.
3. Outside perimeters of all active East Area burial grounds (218-E-10, 218-E-12B).
4. Surface of the stabilized portion of 218-E-12B (includes UN-216-E-32) and 218-E-10.

DECEMBER

WEEKLY

1. Routine water samples.

BIWEEKLY

1. Routine air samples.

QUARTERLY

1. TLD exchange - 100 Area.
2. TLD exchange - 200/600 Areas.
3. TLD exchange - 300/400 Areas.
4. Waste site visual survey (posting, housekeeping, vegetation control, animal activity, unusual conditions, etc.).

ANNUALLY

1. UN-300-4 (UPR-300-4)(321 bldg).
2. UN-300-40 (UPR-300-40)(303-F pipe trench).
3. 200/600 Areas emergency plot surveys.
4. Special surveys (e.g., fresh animal feces, pipelines, etc.), contact Environmental Monitoring and Investigations.

APPENDIX A

SURVEY SITES AND SAMPLE LOCATIONS

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HNF-SP-0098-9
Figure A-1. Hanford Site.

HNF-SP-0098-9
100-B and 100-C Waste Sites.
Figure A-2.

Contamination Area
Underground Radioactive Material

Columbia River

N-Springs
 100-N Area Silos
 1300-N Emergency Dump Basin
 181-N
 163-N
 Mixed and Hazardous Waste
 Storage Pad

1301-N
 1310-N
 1325-N

105-N

200 0 200 400 Meters

WMNWEMIN11-97EMPNRAD

HNF-SP-0098-9
 Figure A-4. 100-N Waste Sites.

A-6

HNFSF-0098-9
Figure A-5. 100-D Waste Sites.

Figure A-6. 100-H Waste Sites.

WNNWEM11-37ENPHRAD

Figure A-7. 100-F Waste Sites.

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Figures A-8 through A-17 show 200 Areas waste sites.

Figure A-10. 200 East Waste Sites, NW Quadrant.

HNF-SP-0098-9
Figure A-11. 200 East Waste Sites, SE Quadrant.

Figure A-13. 200 West Waste Sites.

WMWWM111-97EMP2WRAD

Figure A-14. 200 West Waste Sites, NE Quadrant.

Figure A-15. 200 West Waste Sites, NW Quadrant.

Figure A-16. 200 West Waste Sites, SE Quadrant.

WNNWEM114-9702WNTSSB7

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HNF-SP-0098-9 Figure A-19. 200 West Area
Waste Management Facility Pipelines.

Waste Management Facilities 200 West

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Figure A-20. 300 Area Waste Sites.

Figure A-21. 400 Area Waste Sites.

HNF-SP-0098-9
Figure A-22. 600 Area Waste Sites.

Figure A-23. Site Roads and Railways.

Figure A-24. 200 East Area Roads and Railways.

Figure A-25. 200 West Area Roads and Railways.

Figures A-26 through A-31 show air sample locations.

Figure A-26. 100-N Ambient Air Sample Location.

Figure A-27. 100-K Ambient Air Sample Location.

Figure A-28. 200 East Air Sample Locations.

WNNWEM11-37EMP2EAR

HNF-SP-0098-9
Figure A-29. 200 West Air Sample Locations.

WMNW/EMI/11-97/EMP2WAIR

Figure A-30. 600 Area Air Sample Locations.

Figure A-31. 300 Area Ambient Air Sampler Locations.

HNF-SP-0098-9

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Figures A-32 through A-40 show TLD and dose rate locations.

Figure A-32. 100-N Area TLD Locations.

Figure A-33. N Springs Dose Rate Locations.

HNF-SP-0098-9
Figure A-34. 100-K Area TLD Locations.

Figure A-35. 100-B/C TLD Locations.

HNF-SP-0098-9
Figure A-36. 100-D TLD Locations.

WAW/EMI/1-37/EMPDTLD

Figure A-37. 200 East TLD Locations.

WVWVEMIT1-97EMP-2ETLD

Figure A-39. 300 Area TLD Locations.

HNF-SP-0098-9

Figure A-40. 400 Area TLD Locations.

Figures A-41 through A-52 show soil and vegetation sample locations.

Figure A-42. 100-N Soil Sample Locations.

Figure A-46. 200 West Soil Sample Locations.

WWW/EMI/H1-57/EMP2WSOL

Figure A-47. 600 Area Vegetation Sample Locations.

Figure A-49. 300 Area Vegetation Sample Locations.

WNNWEM11-37EMPOVEG

Figure A-50. 300 Area Soil Sample Locations.

HNF-SP-0098-9

Figure A-51. 400 Area Vegetation Sample Locations.

Figure A-52. 400 Area Soil Sample Locations.

HNF-SP-0098-9

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Figures A-53 and A-54 show water, sediment, and aquatic vegetation sample locations.

Figure A-53. 200 East Water, Sediment, and Aquatic Vegetation Sample Locations.

Figure A-54. N Springs Seepage Sample Locations.

Figure A-55. 100-N Well Sample Locations.

APPENDIX B

DESCRIPTIONS OF 200 AREA UNPLANNED RELEASE SITES

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SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-E-1	UPR-200-E-73	Area around the 241-B-151 diversion box within the 241-B tank farm, contaminated with approximately 10 Ci of mixed fission products in 1951 and 1952. These inactive units have been isolated and weather covered.
UN-216-E-2	UPR-200-E-74	50 ft ² of soil around the 241-B-152 diversion box, southwest corner of 241-B tank farm, contaminated with approximately 1 Ci of mixed fission products in 1954. These inactive units have been isolated and weather covered.
UN-216-E-3	UPR-200-E-75	50 x 100 ft area of soil around the 241-B-153 diversion box, southwest corner of 241-B tank farm, contaminated with approximately 1 Ci of mixed fission products in 1954 and 1955. These inactive units have been isolated and weather covered.
UN-216-E-4	UPR-200-E-76	Area from the 241-B-153 line break that connected the 9-2 Tank in the 221-B Plant to the 110-B Underground Storage Tank, contaminated with approximately 4,780 Ci ¹⁴⁴ Ce, 340 Ci ¹⁰⁶ Ru, and 850 Ci ⁹⁵ Zr/Nb in 1968. The contaminated soil was covered with clean gravel.
UN-216-E-5	UPR-200-E-77	Area around the 241-B-154 diversion box, corner of Baltimore and 7th Streets, contaminated with approximately 1 Ci of mixed fissile products in 1946. This inactive unit has been isolated and weather covered.
UN-216-E-6	UPR-200-E-78	200 ft ² of soil around the 241-B-155 diversion box, 900 ft south of 241-BX tank farm, contaminated with approximately 10 Ci of mixed fission products in 1955. This inactive unit has been isolated and weather covered.
UN-216-E-7	UPR-200-E-79	Area on the waste line that runs from 242-B facility to 207-B retention basin, contaminated with approximately 10 Ci of mixed fission products in 1953. Area was covered with approximately 2 in. of clean soil. No postings mark the area.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-E-8	UPR-200-E-80	100 x 500 ft area from 221-B R-3 line break, south of 221-B and north of 7th Street, contaminated with approximately 10 Ci of mixed fission products in 1946. The ground above the line break caved in, but was backfilled with several feet of clean gravel. The majority of the contaminated material was moved to the 200 East Dry Waste Burial Ground. Approximately 5 Ci of material remain.
UN-216-E-9	UPR-200-E-81	Area west of the 241-CR-151 diversion box, west of 241-C tank farm, contaminated from a line break between the 202-A facility and the 102-C waste tank, with approximately 360 Ci of ⁹⁰ Sr, 720 Ci of ¹³⁷ Cs, 360 Ci of ¹⁴⁴ Ce, 1,080 Ci of ⁹⁵ Zr/Nb, and 1,080 Ci of ¹⁰³ Ru in 1969 (36,000 gal.). The contamination was covered with earth backfill and clean gravel.
UN-216-E-10	UPR-200-E-82	5-ft ² area, northeast of the 241-C tank farm near the 241-C-152 diversion box, contaminated from a line leak between the 241-C-105 tank to the 221-B facility, with approximately 100 Ci of ¹³⁷ Cs, 11,300 Ci of ¹³⁷ Cs, 260 Ci of ¹⁴⁴ Ce, 260 Ci of ⁹⁵ Zr/Nb, and 130 Ci of ¹⁰⁶ Ru (2,600 gal.) in 1969. Area was cleaned during the decontamination outage of 241-C tank farm following the 241-C-151 release in 1985.
UN-216-E-11	UPR-200-E-83	4-mi ² area south of 200 East Area, encompassing BC cribs and trenches, contaminated by radioactive rabbit and coyote feces containing approximately 14 Ci of ¹³⁷ Cs and ⁹⁰ Sr. Routine surveillance indicates the contamination to be fixed beneath a good growth of vegetation. No significant evidence of resuspension. Area designated as "BC-Controlled Area."
UN-216-E-12	UPR-200-E-84	Area approximately 800 ft southwest of the 221-B facility near the 241-ER-151 diversion box had a release of approximately 1,700 gal from a leak in the catch tank in 1953. No contamination was detected.
UN-216-E-13	UPR-200-E-85	Area south of 221-B facility, northwest corner of the R-13 utility pit, contaminated with approximately 15 Ci of ¹³⁷ Cs, by a leak in the pipeline from Tank 18-1 to the 154-BX diversion box in 1972. Contamination levels were reduced to approximately 14 Ci by 1973.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-E-14	UPR-200-E-86	Area outside the southwest corner of the 241-C tank farm, contaminated from a leak in the vicinity of Line #812 (8 ft deep) used to transfer waste from AR vault to 241-C tank farm in 1971. The line contained 25,000 Ci of ¹³⁷ Cs.
UN-216-E-15	UPR-200-E-87	Area on the south side of the 224-B facility, contaminated with approximately 75 g of ²³⁹ Pu, assumed to have resulted from leaks in the underground pipe joints that entered the back of 224-B to feed its cells during processes performed between 1945 and 1953.
UN-216-E-16	UPR-200-E-88	Area about 900 ft northwest of the 202-A facility designated "TC-4 Railroad Spur," contaminated by leakage from railroad well/tank cars in 1980. No contamination levels recorded.
UN-216-E-17	UPR-200-E-89	Area bounding the north and northeast sides of 241-BY tank farm contaminated up to 2,000 cpm by airborne particulate matter, resuspended by wind from activities during the time of 241-BY operations (reported in 1978). Interim stabilization occurred in 1991.
UN-216-E-18	UPR-200-E-90	Area adjacent to the 291-B stack sand filter, about 300 ft south of the 221-B Facility. Contamination possibly spread from Unplanned Release Site UN-216-E-8 (UPR-200-E-80) in 1980. No contamination levels recorded.
UN-216-E-19	UPR-200-E-91	Area adjacent to the northeast corner of the 241-C tank farm, contaminate by downhill seepage of the decontamination station, vapor emissions, and windblown particulate matter from inside the tank farm in 1980. Contaminated soil was excavated and buried in the location now designated UN-216-E-33 adjacent to the north side of 216-A-24 crib.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-E-20	UPR-200-E-92	Area along the eastern outer perimeter of 200 East Area, contaminated by windblown Russian thistle from various waste sites in the area. The thistle decomposed on the fence line and infiltrated the soil in 1980. Contaminated soil was excavated and buried in the location now designated UN-216-E-33 adjacent to the north side of 216-A-24 crib. Area has been removed from posting.
UN-216-E-21	UPR-200-E-93	Area along the eastern inner perimeter of 200 East, contaminated by windblown Russian thistle from various waste sites in the area. The thistle decomposed on the fence line and infiltrated the soil in 1980. Contaminated soil was excavated and buried in the location now designated UN-216-E-33 adjacent to the north side of 216-A-24 crib. Area has been removed from posting.
UN-216-E-22	UPR-200-E-94	Gravel pit east of 200 East Area and north of 216-B-3-1 ditch diverter station, contaminated when decontamination efforts of earthmoving equipment (contaminated up to 8,000 cpm) left a 300 cpm residue at the bottom of the pit in 1979. Area has been removed from posting.
UN-216-E-23	UPR-200-E-95	Railroad spur north of 221-B facility and between 218-E-2A and 218-E-5 burial grounds, assumed contaminated in excess of 100,000 cpm by leaking railroad tank/well cars. Established as an Unplanned Release Site in 1980.
UN-216-E-24	UPR-200-E-96	Area southeast of the 202-A facility (PUREX) to the protected area southern fence line, contaminated from the residue produced by 291-A stack and diversion box work during the operational years of the facility (reported in 1980). No contamination levels reported.
UN-216-E-25	UPR-200-E-97	Area of unknown origin south of the 202-A facility near the railroad tunnel. The surface contamination was removed during the construction of the double-exclusion fence and posting was removed when area was established as an Unplanned Release Site in 1980. No contamination levels reported.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-E-26	UPR-200-E-98	Area east of the C facility (hot semiworks) near the base of the 291-C stack and around the 216-C-2 reverse well, contaminated from particulate matter spread from operation of the facility between 1955 and 1965. No contamination levels reported. The contamination has been removed and the site stabilized.
UN-216-E-27	UPR-200-E-99	Portion of the ground surface surrounding the 244-CR vault, in the south corner of 241-C tank farm, contaminated during numerous piping changes associated with the facility. No contamination levels reported. The site was decontaminated in 1981.
UN-216-E-28	N/A	This number not assigned.
UN-216-E-29	UPR-200-E-100	Area south and east of 241-C tank farm (corner of 7th Street and Buffalo), assumed contaminated by windblown particulates and biological transport from the tank farm. The area has merged with UN-216-E-43, which surrounds most of the 244-A lift station and 216-A-40 retention basin. Decontamination and decommissioning efforts were active as of 4/1/94.
UN-216-E-30	UPR-200-E-101	Area between 242-B evaporator and the 241-B tank farm fence, possibly contaminated by windblown particulates from the tank farm or spills out of the 242-B Evaporator. The contamination has been removed and the site stabilized.
UN-216-E-31	UPR-600-E-21	Area northeast of 200 East Area, size and boundaries not determined, contaminated in excess of 100,000 cpm with windblown Russian thistle and decomposed Russian thistle from various facilities within 200 East Area. The contamination was removed from the most concentrated areas in 1986, but the area is too large for unrestricted release.
UN-216-E-32	N/A	Area adjacent to and northeast of the 218-E-12B burial ground. This area has been incorporated into the expansion of the 218-E-12B burial ground. An accurate history of the area is unknown.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-E-33	UPR-200-E-56	Area adjacent and north of the 216-A-24 crib, contaminated by biological transport of contamination buried there during decontamination of other problem areas. The contamination was buried under approximately four feet of clean fill in 1988 and posted as URM.
UN-216-E-34	200-E-42	Area southeast of 202-A (PUREX) facility, outside the exclusion area, contamination possibly caused by 291-A stack emissions. No contamination levels reported.
UN-216-E-35	N/A	Area northwest of 216-B-3-1 and 216-B-3-2 back filled ditches.
UN-216-E-36	UPR-200-E-64	West side of the 216-B-64 basin.
UN-216-E-37	N/A	Area east of hot-semiworks. Area cleaned up and release from all posting in 1991.
UN-216-E-38	200-E-41	Area around hot-semiworks building.
UN-216-E-39	N/A	Area east of hot-semiworks, south of 7th Ave and north of the powerhouse ditch. Area was decontaminated and released from posting in 1989. Contamination was placed in 218-C-9 burial ground before it was stabilized.
UN-216-E-40	N/A	Area north of the 216-B-3-3 ditch east of 200 East Area.
UN-216-E-41	UPR-600-20	The cross site transfer line, including the 241-ER-151 vent station, contaminated by biological transport of radioactive materials that leaked into the pipeline encasement and windblown particulates from the vent station. No contamination levels reported.
UN-216-E-42	N/A	Number assigned then canceled. This site was the same as UN-216-E-36.
UN-216-E-43	UPR-200-E-143	Area 50 ft south of 244-A lift station and 100 ft east of 216-A-40 basin.
UN-216-E-44	UPR-200-E-144	Area north and east of 241-B tank farm. This area of migration covers about 12 acres. Area was interim stabilized and released from posting status in 1992.
N/A	200-E-43	PUREX RR tank car storage area north of the TC-4 Railroad Spur.
N/A	200-E-44	PUREX Railroad Cut.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-2	UPR-200-W-95	Area inside the 207-S retention basin, contaminated with approximately 10 Ci of mixed fission products in 1954 when coil leaks in the 202-S Facility contaminated cooling water. The basin was buried with clean soil in 1993.
UN-216-W-4	UPR-200-W-96	Area adjacent to and directly north of the 233-S filter house, contaminated with approximately 0.1 g of ²³⁹ Pu (>40,000 dpm) when contaminated water backed up in the filter house drain and overflowed into a low spot in the ground in 1969. The area was originally covered with 18 in. of washed gravel and was ultimately covered with an asphalt roadway.
UN-216-W-5	UPR-200-W-97	Area on the southeast corner of 23rd St and Camden Ave, contaminated with approximately 10 Ci of fission products in 1954 when an underground pipeline between 152-T and 153-TX broke and again when it was mistakenly reused in 1966. The area was excavated to 3 to 4 ft and covered with clean soil.
UN-216-W-6	UPR-200-W-98	Area at the southeast corner of the 221-T facility, near section R19, contaminated with mixed fission products, which surfaced from a broken process waste transfer line in 1945. Russian thistle contaminated with ⁹⁰ Sr and ¹³⁷ Cs was discovered growing on the spill site in 1968, but ensuing crops became less contaminated until no contamination was found in 1975. The area was originally covered with 4 ft of clean soil, and has since been covered by an asphalt roadway.
UN-216-W-7	UPR-200-W-99	Area 750 ft north and south along Camden Ave, extending 75 to 100 ft east of the roadway, contaminated with approximately 1 Ci of ⁹⁰ Sr (up to 700 mrad/hr) when two plumes of airborne particulates escaped from 153-TX diversion box in 1966. The area on the west side of Camden was covered with gravel, but was recontaminated by windblown particulates from 241-TX tank farm in 1993. The area on the east side of Camden was covered with approximately 4 ft of clean soil and revegetated in 1990.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-8	UPR-200-W-100	Area in 241-TX tank farm, on the process line between 241-TX-105 and 241-TX-118 tanks, contaminated with approximately 10 Ci of fission products with a maximum dose rate of 4.5 R/hr at 4 ft in 1954. The contaminated area was covered with 1 ft of clean soil.
UN-200-W-8	UPR-200-W-8	Area near the northeast corner of Beloit Ave and 15th St, designated "The Old Burning Ground," contaminated with approximately 1 Ci of fission products with a maximum dose rate of 45 R/hr at the surface, from an unknown source in 1950. The area has been covered with 10 ft of clean soil.
UN-216-W-9	UPR-200-W-101	Area on the southeast side of 221-U facility, between sections R1-R5, contaminated with reclaimed acid containing approximately 1 Ci of ⁹⁰ Sr that was spilled on the ground in 1957. Radiological surveys performed in 1976 revealed 300 cpm on the surface. The area was covered with 3 in. of sand and gravel.
UN-216-W-10	NA	Area approximately 500 ft west of 271-U facility and 550 ft north of 16th St. Cannot locate. No additional information.
UN-216-W-11	UPR-200-W-138	Area at the northwest corner of 221-U facility near section R3, contaminated when an estimated 300 lb of uranium (UNH solution) overflowed into the 221-U building vessel vent blower pit and then went to ground through the French drain in 1953. No record of decontamination efforts.
UN-216-W-12	UPR-200-W-102	50- X 12- X 12-ft area on the southeast side of the 224-T facility, contaminated with about 10 g of ²³⁹ Pu, when alpha-laden moisture seeped through the jointed tile piping from process tanks entering the rear of the building at ground level during the years of process operations (discovered in 1972). 139 drums of soil were excavated and removed for burial.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-13	UPR-200-W-103	Area about 6 ft south and 12 ft west of the 236-Z facility, contaminated with about 10 g of ^{239}Pu ($7.6 \text{ E}+07 \text{ dpm}/100 \text{ cm}^3$ of ground) when the 216-Z-18 crib line from 234-5Z facility broke in 1971. An area 25 ft long by 6 ft wide by 7 ft deep was excavated, producing approximately 100 55-gal drums of soil, which were buried in the 200 West area plutonium "storage for recovery" burial ground. Much contamination remains under 6 ft of clean soil.
UN-216-W-14	UPR-200-W-104	580-ft-long by 40-ft-wide by 10-ft-deep trench running northwest from the northeast corner of 216-U-10 pond, dug to give additional leaching surface for overflow water, contaminated to about 2,000 cpm in the bottom of the trench. Maximum soil sample analyses were $5.2 \text{ E}+00 \text{ pCi/g } ^{90}\text{Sr}$, $1.9 \text{ E}+03 \text{ pCi/g } ^{137}\text{Cs}$, $2.8 \text{ E}+04 \text{ pCi/g } ^{241}\text{Am}$ in 1978. Area was buried under about 4 ft of clean soil.**
UN-216-W-15	UPR-200-W-105	500-ft-long by 45-ft-wide by 15-ft-deep trench running east from the center of the east side of 216-U-10 pond, dug to give additional leaching surface for overflow water, contaminated to about 3,000 cpm in the bottom of the trench. Maximum soil sample analyses were $8.0 \text{ E}+01 \text{ pCi/g } ^{90}\text{Sr}$ and $2.0 \text{ E}+03 \text{ pCi/g } ^{137}\text{Cs}$ in 1978. Area was buried under about 4 ft of clean soil.**
UN-216-W-16	UPR-200-W-106	400-ft-long by 25-ft-wide by 8-ft-deep trench running east from the southeast side of 216-U-10 pond, dug to give additional leaching surface for overflow water, contaminated to about 2,000 cpm in the bottom of the trench. Maximum soil analyses were $5.9 \text{ E}+01 \text{ pCi/g } ^{90}\text{Sr}$ and $1.4 \text{ E}+03 \text{ pCi/g } ^{137}\text{Cs}$ in 1978. Area was buried under about 4 ft of clean soil.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-17	UPR-200-W-107	Area south of 216-U-10 pond, inundated by rising water from the pond, which received waste water from the 216-U-14 laundry ditch, the 216-Z-11 ditch, and cooling water from the 401-SX building condensers in the 241-SX tank farm. Contamination reached a maximum level of 8,000 cpm on the surface of the ground. Maximum soil analyses were 9.8 E+01 pCi/g ⁹⁰ Sr and 2.6 E+03 pCi/g ¹³⁷ Cs in 1978. Area was buried under about 4 ft of clean soil.
UN-216-W-18	UPR-200-W-108	Area at the south end of 216-S-9 crib, contaminated with an unknown amount of radioactive material (40 R/hr from the bottom of the waste line) when REDOX (202-S) process condensate from the D-2 receiver tank flowed from the 240-S Diversion Box to the "Y" in the line between the 216-S-9 crib and the 216-S-23 crib, which was found to be buckled in two places in 1969. The waste water was allowed to seep into the bottom of the 20-ft-deep hole, which was dug to maintain the line, and filled after the work was complete. Area is still a Surface Contamination Area within the 216-S-9 crib boundary.
UN-216-W-19	UPR-200-W-109	Area inside the east perimeter of 218-W-9 burial ground, contaminated with an unknown amount of radioactive material (40 R/hr from the bottom of the waste line) when REDOX (202-S) process condensate from the D-2 receiver tank flowed from the 240-S diversion box to the "Y" in the line between the 216-S-9 crib and the 216-S-23 crib, which was found to be buckled in two places in 1969. The waste water was allowed to seep into the bottom of the 20-ft-deep hole, which was dug to maintain the line, and filled after the work was complete. The area was covered with clean soil and revegetated along with 218-W-9.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-20	UPR-200-W-110	A covered area (216-Z-1 ditch), 425 ft long by 15 ft deep adjacent and parallel to the head-end (north) of the 216-Z-19 ditch, contaminated up to 100,000 dpm (alpha) by intrusion of process leaks into the 234-5Z Plant cooling water discharge system, which settled out or was absorbed by aquatic vegetation along the bottom and sides of 216-Z-1 ditch, mistakenly uncovered during the construction of the new 216-Z-19 ditch in 1971. The soil was assumed to have been returned to its original location when it was decided to construct the 216-Z-19 ditch 35 ft further west.
UN-216-W-21	UPR-200-W-111	40-ft-long by 8-10-ft-deep by 15-ft-wide area within 10 ft of the south wall of the 207-U retention basin, constructed to contain sludge from the bottom of the southern section of 207-U retention basin at an unknown time. The sludge was originally covered with 4 ft of clean soil, but has been recontaminated and is presently a Surface Contamination Area.
UN-216-W-22	UPR-200-W-112	40-ft-long by 8-10-ft-deep by 15-ft-wide area within 10 ft of the north wall of the 207-U retention basin, constructed to contain sludge from the bottom of the northern section of 207-U retention basin at an unknown time. The sludge was originally covered with 4 ft of clean soil, but has been recontaminated and is presently a Surface Contamination Area.
UN-216-W-23	UPR-200-W-113	Area near the 241-TX-155 diversion box, contaminated by rabbit feces in 1977. Surveys of the area to determine the contamination source revealed low-level beta/gamma contamination, below and to the west of the 241-TX-155 diversion box. Radiation levels increased during attempted excavation of the contamination causing assumptions that a nearby waste transfer line was the underground source of contamination. The area was covered with clean soil and revegetated in 1990.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-24	UPR-200-W-114	Radioactive particulate matter resulting from operations activities in the 241-SX tank farm, the 241-SX-151 diversion, and the 241-S-151 diversion box spread over the ground surface of the subject area during the many years of operations. A number of cleanup campaigns reduced the amount of contamination, but a residue of the original remains on the ground.
UN-216-W-25	UPR-200-W-115	This site consists of a surface contamination zone associated with clean-out boxes on the feed line. Area posted as Surface Contamination.
UN-216-W-26	UPR-200-W-116	This area became contaminated with particulate matter spread by wind from the 204-S waste storage tank exhaust and the related railroad tanker waste unloading station. The site is located ~300 feet north of the 202-S building, next to the REDOX railroad cut. Area was interim stabilized in 1993.
UN-216-W-27	UPR-200-W-117	This site results from contaminated liquid and particulate matter dropping from railroad cars servicing the 221-U facility during the Uranium Recovery and Equipment Decontamination Programs, and the various storage and unloading activities. These activities started in 1952 with the Uranium Recovery Program (1952-1987) and have continued intermittently to the present. The site was designated as a radiation zone, but has since been released as contamination has decayed to background levels.
UN-216-W-28	UPR-200-W-118	This site is the result of drippings and spills from the reclaimed nitric acid unloading stations in the 211-U chemical tank farm. Wind-borne particulate matter spread to the ground surface outside the concrete unloading station. This site was designated a radiation zone, but has since been released as contamination has decayed to background levels.
UN-216-W-29	UPR-200-W-164	The site consists of spotty surface contamination beneath the steam line from the 204-S storage tanks to the 224-U building. In 1986 the zone was reduced to a small area of spotty surface contamination beneath the steam line. Interim stabilized in 1993.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-30	UPR-200-W-165	The site consists of speck surface contamination measuring 200 cpm to 45mr/hr, and the sites location is northeast of 241-S/SX/SY tank farms.
UN-216-W-31	UPR-200-W-166	The site contains spotty contamination which is suspected to have originated from 241-T tank farm. In 1991, the interior fenced area of 241-T tank farm was decontaminated, and a layer of clean gravel was placed over the area. In 1991 and 1992 radiologically contaminated soil was scraped and consolidated along the hillside on the west side of 216-T-14 through 216-T-17 units. A layer of clean soil was placed over the consolidated contaminated soil area.
UN-216-W-32	UPR-200-W-167	Migration of contamination from TY tank farm over time. The site location is northeast of the 241-TY tank farm and adjacent to the tank farm fence and extending 200 feet east and 250 feet north from the fence line. The contaminated soils were scraped and disposed in the 200 West burial grounds. Clean gravel was placed over the excavated surface. The site was removed from the survey schedule in 1989.
UN-216-W-33	UPR-200-W-163	The site contains radiologically contaminated vegetation growing above the underground pipeline. The contamination came from an underground pipe line from 224-T (UO3) to the 216-U-8 crib. Area interim stabilized in 1994. Pipeline was reposted as URM rest of area was released from posting status.
UN-216-W-34	N/A	Waste water sump inside the 2724-W laundry facility.
UN-216-W-35	UPR-200-W-161	~50 ft east of the 241-U tank farm and 100 ft north of the 207-U retention basin.
UN-216-W-36	UPR-200-W-160, UPR-200-W-21	The ground around 241-TX-302 catch tank between the 221-T bldg. and the 222-T bldg., at section R-11 of 221-T and includes the area west of and in between the double fences of 224-T.

SITE	UPR NUMBER	SITE DESCRIPTION/LOCATION
UN-216-W-37	UPR-200-W-162	The area adjacent to and east of the 221-U building; (UN-216-W-9 and 216-W-11 are located within this larger unplanned release site). The site consists of surface speck contamination. This site also encompasses previous spill areas UPR-200-W-101 and UPR-200-W-138. Some contamination was removed using buckets and shovels by Tank Farm Operations in March and October 1991.
N/A	200-W-54	The contamination area east of and adjacent to the 241-SX Tank Farm.

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