START

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ENGINEERING CHANGE NOTICE

1. ECN 169787

Proj. ECN

2. ECN Category (mark one)	Supplemental	[]	Change ECN	[]	Supersedure	[]
Cancel/Void []	Direct Revision	[X]	Temporary	[]	Discovery	[]

3. Originator's Name, Organization, MSIN, and Telephone No. M. T. Stankovich, W81221/PH1AA, H4-55, 6-2493		4. Date July 31, 1992
5. Project Title/No./Work Order No. 100-DR-1 Operable Unit	6. Bldg./Sys./Fac. No. 1607-D4, 103-D, 126-D-1, Salt Dissolving Pit	7. Impact Level 3 Q
8. Document Number Affected (include rev. and sheet no.) WHC-SD-EN-AP-067, Rev 2	9. Related ECN No(s). NA	10. Related PO No. NA

11a. Modification Work	11b. Work Package Doc. No.	11c. Complete Installation Work	11d. Complete Restoration (Temp. ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	NA	NA Cog. Engineer Signature & Date	NA Cog. Engineer Signature & Date

12. Description of Change

Addition of three new sample sites; the Salt Dissolving Pit, 126-D-1 (Ash Disposal Basin), and 103-D Green Metal storage; and a revision of the 1607-D4 sampling methods.

AUG 1992 RECEIVED EDMC

13a. Justification (mark one)	Criteria Change	[X]	Environmental	[]	Facilitate Const.	[]
Design Error/Omission []	Design Improvement	[]	As-Found	[]	Const. Error/Omission	[]

13b. Justification Details

Sampling activities required by TPA milestone 30-03.

14. Distribution (include name, MSIN, and no. of copies)

See attached distribution list.

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ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 169787

15. Design Verification Required	16. Cost Impact						17. Schedule Impact (days)	
	ENGINEERING			CONSTRUCTION				
[] Yes	Additional	[]	$	Additional	[]	$	Improvement	[]
[X] No	Savings	[]	$ NA	Savings	[]	$ NA	Delay	[] NA

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]		[]
Environmental Report	[]	Inspection Plan	[]	NA	[X]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision
NA		

Seen HLA

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog./Project Engineer M. T. Stankovich	7/31/92	PE	
Cog./Project Engr. Mgr. R. P. Henckel for RPH	7/31/92	QA	
QA G. S. Corrigan	8-10-92	Safety	
Safety		Design	
Security		Other N. M. Naiknimbalkar	8/5/92
Proj. Prog./Dept. Mgr.			
Def. React. Div.			
Chem. Proc. Div.			
Def. Wst. Mgmt. Div.		DEPARTMENT OF ENERGY	
Adv. React. Dev. Div.			
Proj. Dept.			
Environ. Div.		ADDITIONAL	
IRM Dept.			
Facility Rep. (Ops.)			
Other			

9 2 1 2 6 5 8 1 5 4 7

SUPPORTING DOCUMENT

1. Total Pages 42

2. Title	3. Number	4. Rev No.
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5. Key Words

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8/14/92 10 Sales

6. Author

Name: M. T. Stankovich

7/31/92
Signature

Organization/Charge Code 81221/PH1AA

7. Abstract

This activity plan details the field activities associated with the nonintrusive source sampling in the 100-DR-1 operable unit of the Hanford Site and will serve as a field guide for those performing the work.

Stankovich, M. T., 1992, *100-DR-1 Area Nonintrusive Source Investigation Activities*, WHC-SD-EN-AP-067, Rev. 3, Westinghouse Hanford Company, Richland, Washington.

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9. Impact Level 3Q

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A-6400-073 (11/91) (EF) WEF124

RECORD OF REVISION	(1) Document Number WHC-SD-EN-AP-067	Page 1

(2) Title
100 Area Nonintrusive Source Sampling Description

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release (5) Cog. Engr.	(6) Cog. Mgr. Date
0	(7) EDT 133021		
1	ECN 164712, added three new sampling activities		
2	ECN 168778, incorporated regulators comments to Revision 1.		
3 RS	ECN 169787, added three new sampling activities; 126-D-1 (Ash Disposal Basin), Salt Dissolving Pit, and 103-D Green Metal Storage; and modified the sampling methods for 1607-D4.	7/31/92	for RP Aerobel 7/31/92

9 2 1 2 6 5 8 1 5 4 9

A-7320-005 (08/91) (EF) WEF168

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1.0 SCOPE OF WORK

This document details the field activities associated with nonintrusive source sampling in 100-DR-1 Operable Unit of the Hanford Site and will serve as a field guide for those performing the work. It should be used in conjunction with *RCRA Facility Investigation/Corrective Measure Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1991) for general investigation strategy and with *Environmental Investigations and Site Characterization Manual* (WHC 1988a) for specific procedures. This description of work describes specific limited field investigation (LFI) activities and sampling locations in accordance with discussions at the June 27, 1991, 100 Area work plan rescoping meeting.

Revision 0 of this description of work addressed sampling of the sodium dichromate tank location. Revision 1 adds the 108-D Office Building and Equipment Decontamination Station and the 100-DR-1 Septic Tank/Tile Fields. Revision 2 incorporates regulators comments to Revision 1. This revision (3) adds the 126-D-1 Ash Disposal Basin, the 100-D Salt Dissolving Pit, the 103-D Green Metal Storage Facility, and the 1607-D4 Test Pit.

2.0 GENERAL REQUIREMENTS

2.1 HEALTH AND SAFETY

All personnel working to this description will perform all work in accordance with the following:

- WHC-EP-0383, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan* (WHC 1990)
- WHC-CM-4-10, *Radiation Protection* (WHC 1988b)
- WHC-CM-4-11, *ALARA Program Manual* (WHC 1988c)
- WHC-CM-4-3, *Industrial Safety Manual*, Vol. 1 through 3, (WHC 1987)
- WHC-CM-7-5, *Environmental Compliance Manual* (WHC 1988d)
- WHC-SD-EN-SAD-002, *100 Area Low Hazard Characterization Activities Safety Assessment*, Rev. 0 (Taylor 1991)
- Site-specific job safety analysis.

2.2 PREREQUISITES

A readiness review will be completed by the cognizant engineer before each sampling task is initiated. The readiness review will be completed per Environmental Investigations Instruction (EII) 1.13, Environmental Engineering and Geotechnology Readiness Review, (WHC 1988a). The Source Sampling Status Checklist (Attachment 1) will be initialed by the cognizant engineer or field team leader (FTL) and dated as each step of the task is completed.

3.0 SAMPLING AND FIELD ACTIVITIES

3.1 SODIUM DICHROMATE TANKS

3.1.1 Location

This description of work addresses the sampling of the original sodium dichromate tank location described in the 100-DR-1 Operable Unit work plan (DOE-RL 1991, Section 2.1.4.9.5).

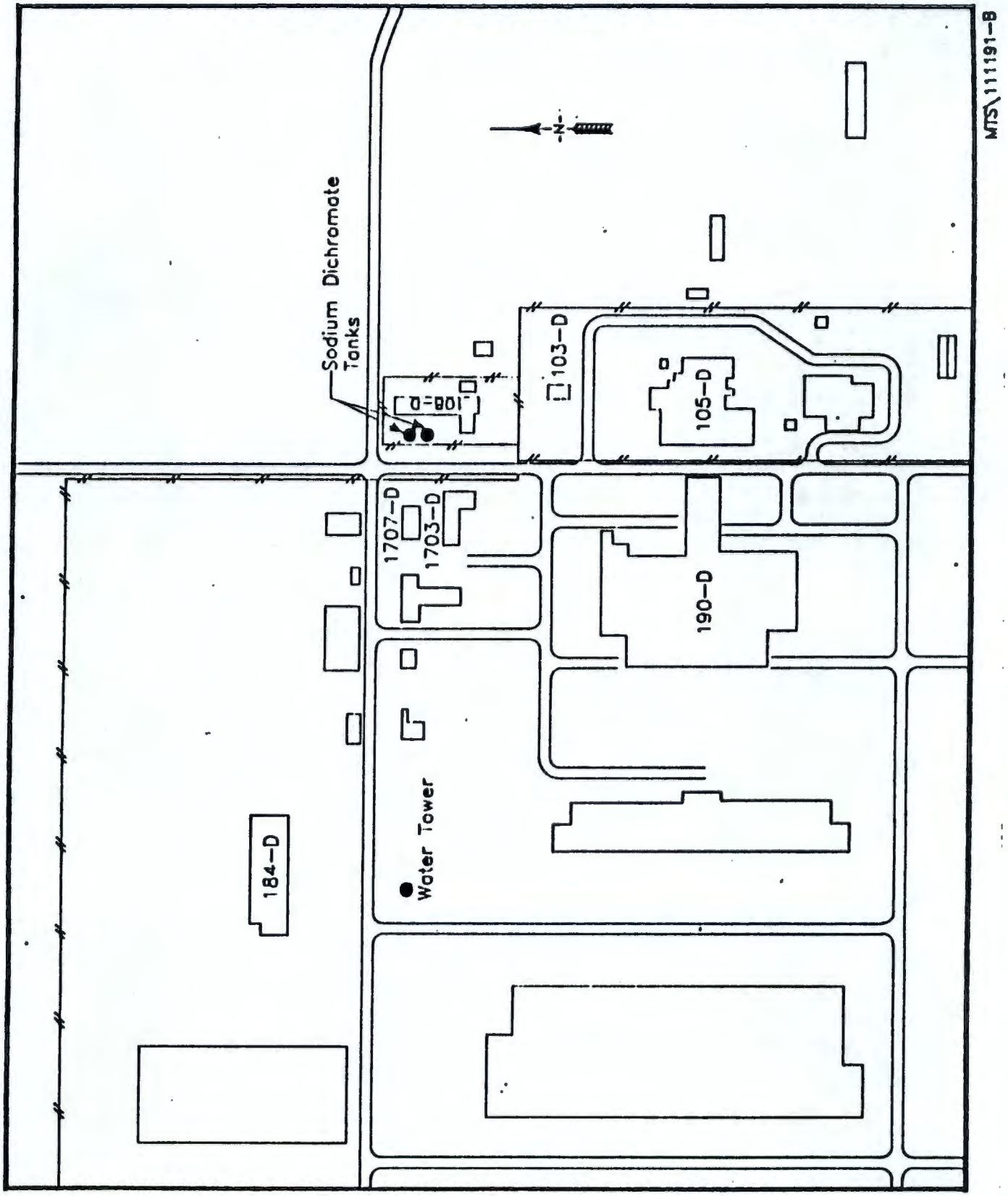
Two tanks were original installed aboveground west of 108-D Office Building and Equipment Decontamination Station as shown in Figure 1. Photographs show the tanks inside the exclusion fence that surrounds the 108-D building. The foundation of the tanks are believed to be under the fill material that was placed on the site after the 108-D building demolition.

3.1.2 Sample (Chemical)

The sample will be analyzed for:

Analyte	Method
Volatile	8240
Semivolatile	8270
PCB/Pesticides	8080
Phosphorus Pesticides	8140
Target Analyte List (TAL)	6010
Mercury	7470
Anions	300.0
Cyanide	9010
Radioisotopes:	Performed under laboratory standard procedure
^{14}C	
^{90}Sr	
Gross Alpha	
Gross Beta	
Alpha Spec: to include $^{235/238}U$, $^{239/240}Pu$, and ^{241}Am	
Gamma Spec: report all identifiable and quantifiable isotopes	
Total Activity.	

Figure 1. 100-D Area Sodium Dichromate Tank Location.



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3.1.3 Test Pit Construction

The test pit will be constructed at the dichromate tanks site within an area whose perimeter is approximately 5 ft greater than that of the tank's foundation pads (Figure 2). The perimeter will be staked out with the north boundary of the pit aligned with the north edge of building 1707-D foundation. The west boundary will be parallel to and 2 ft east of the exclusion area fence. The south boundary will be 40 ft from the north boundary. The east boundary will be 25 ft from the west boundary.

3.1.4 Sample Collection

As the test pit is excavated, one sample at each tank site will be field screened using a soil test kit for chromium (hexavalent). If the field screening detects chromium, a sample will be collected for offsite analysis. A minimum of two samples will be collected. In the event field screening reveals that no chromium is present, samples will be collected from below and to the side of each tank site.

Field screening will be performed in accordance with the manufacturer's recommendations. Samples will be collected in accordance with EII 5.2, Soil and Sediment Sampling (WHC 1988a). A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The logbook will be used and maintained in accordance with EII 1.5, Field Logbooks (WHC 1988a).

3.2 108-D OFFICE BUILDING AND EQUIPMENT DECONTAMINATION STATION

The 108-D building was located just north of the 103-D Fuel-Element Storage Building and has been demolished. The building was a large structure with three floors and a basement, approximately 132 ft long, 32 ft wide, and 41 ft high. The 108-D building was built for the purpose of adding chemicals to the process water before it entered the reactor. The original purpose for this building, however, was abandoned and it was used as an office complex and a decontamination and repair shop for contaminated reactor process tube replacement equipment.

3.2.1 Location

This section addresses the sampling of the soil at the north end of the 108-D building site and adjacent to the sanitary sewer pipeline described in the 100-DR-1 Operable Unit work plan (DOE-RL 1991, Section 2.1.4.4.1). This site is being sampled because of the possibility that the integrity of the sewer pipeline was compromised by acidic decontamination fluids. The work plan (DOE-RL 1991, Figure 2-2) shows the location of the 108-D building in relation to other landmarks in the 100-DR-1 Operable Unit. The building is no longer present. Records showed that Decommissioning and Decontamination (D&D) demolished the 108-D building in 1978, and that the rubble was taken to the 184-D Coal Pit. A test pit, approximately 32 by 3 ft will be dug approximately 5 ft north of the 108-D building site. The sanitary sewer pipeline location is shown in Figure 3.

Figure 2. Sodium Dichromate Test Pit.

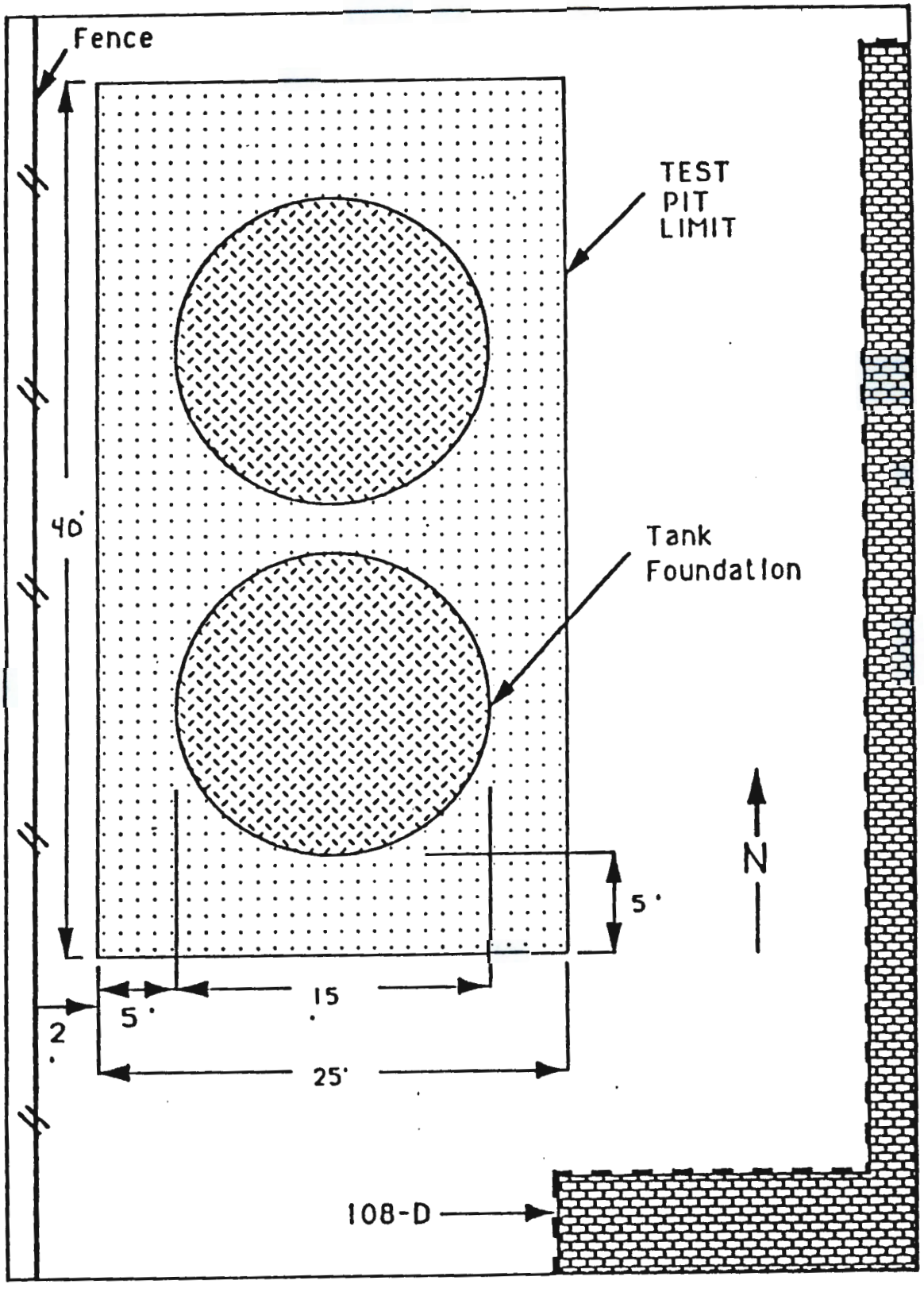
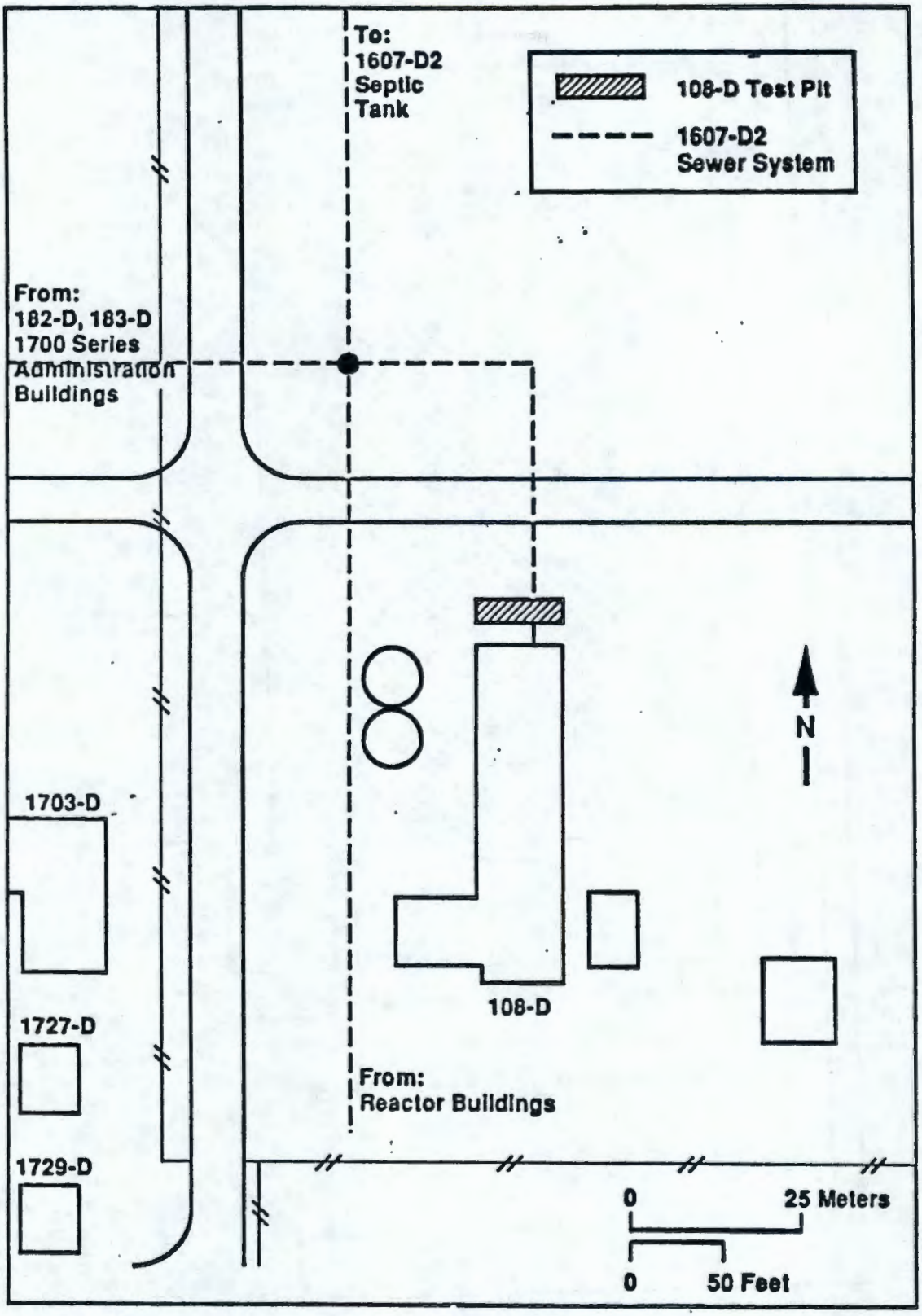


Figure 3. 100-D Area 108-D Building, Associated Structures and Test Pit.



A plot map of the 100-D Area sewer system shows where the sanitary drain line leaves the north side of the 108-D building. The sewer line goes north and crosses underneath the 100-D Area entrance road. After crossing the road, the sanitary line heads west until it ties into the main sanitary pipeline for the 1607-D2 sewer system. A ground-probing radar (GPR) survey of the area was conducted for the vadose zone drilling of D-116-3 (December 1991). The survey showed the ground as being very disturbed and did not show the sanitary pipeline or the foundation of the 108-D building. Since there are no visible signs of the 108-D building, the location of the building will be identified and staked using aerial photos. The exact location of the sanitary pipeline egress from 108-D building is unknown, but is expected to be approximately 10 ft from the northeast corner of the building and is 15.5 ft deep. The sampling protocol for the pipeline site is delineated in Section 3.2.4.

3.2.2 Sample Analysis

3.2.2.1 Contaminants of Concern. The contaminants of concern for the 108-D sanitary sewer pipeline are suspected to be: (1) low level fission products from the maintenance shops and cask decontamination pad (DOE-RL 1991) and (2) decontamination solution. Because of the uncertainty of the sewer pipeline contaminants, the soil samples will be analyzed for the full range of radioisotopes and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) target analyte list (TAL) and target compound list (TCL) constituents (DOE-RL 1992, Table QAPjP-1).

3.2.2.2 Field Screening. The field screening discussed in this section is not for health and safety determination. Health and safety issues are covered in the Radiation Work Permit (RWP) or the Job Safety Analysis (JSA). Field screening covered in this section is for the purpose of selecting samples for laboratory analysis. Samples will be field screened for volatiles and radioactivity. If the FTL finds radioactive contamination two times background or volatiles contamination five times background, a sample will be taken per Section 3.2.4.

Background will be determined before excavation is started. The FTL will determine the ambient radiation and volatiles background 3 ft over the sampling site. The background will be determined per EII 3.4, Field Screening, Appendixes A and B (WHC 1988a). The radiation and volatiles backgrounds will be recorded in the field logbook.

Radiation field screening will be performed using a Geiger-Mueller (GM) instrument with a P-11 probe. Volatiles will be screened using an organic vapor monitor (OVM). The OVM will be calibrated and maintained per EII 3.4, Field Screening, (WHC 1988a).

3.2.2.3 Laboratory Analysis. The samples will be analyzed for:

Analyte	Method
Volatiles	Target Compound List (TCL)-Contract Laboratory Procedure) (CLP)
Semivolatiles	TCL-CLP
PCB/Pesticides	TCL-CLP
TAL	TAL-CLP
Mercury	TAL-CLP
Toxic Characteristic Leach Procedure (TCLP)[a]	1311
Cyanide	TAL-CLP
Anions	EPA 300 and 353.2
Radioisotopes:	Performed under laboratory standard procedure
^{14}C	
^{90}Sr	
Gross Alpha	
Gross Beta	
Alpha Spec: to include $^{235/238}U$, $^{239/240}Pu$, and ^{241}Am	
Gamma Spec: report all identifiable and quantifiable isotopes	
Total Activity	

[a]Sample is being analyzed for another WHC group information and is not a requirement of the work plan.

3.2.3 Test Pit Construction

The test pit will be constructed parallel to and no closer than 5 ft to the north side of the 108-D building. It will be approximately 32 ft long by 3 ft wide and 16 ft deep. It will be constructed per the JSA. Excavated material will be surveyed by the Health Physics Technicians per the RWP. If found to be in excess of the guidelines, material will be treated as contaminated. The RWP sets the maximum limits for the task at 1.0 mrem of whole body exposure and/or 10,000 dpm alpha or beta/gamma. If the contamination exceeds this limit, the sampling activities will be terminated and the task will be reassessed. The excavated material will be replaced in the test pit in approximately the reverse order, so that the first bucketful excavated is the last bucketful backfilled and as instructed by EII 5.2, Soil and Sediment Sampling, Appendix F (WHC 1988a), when the sampling is completed. All waste will be handled per EII 4.2, Interim Control of Unknown, Suspected Hazardous and Mixed Waste, WHC 1988a).

3.2.4 Sample Collection

The bucket of the backhoe will be decontaminated before commencing sampling activities. Samples shall be taken from the center of the bucket before the excavated material is placed on the ground. All sample material will be collected in the order shown in Section 3.2.2.3. A minimum of one

sample or a maximum of two samples will be collected per the following guidance. Criteria for sample selection are as follows:

- Collect one sample the first time the material does not pass the radiation or organic screening criteria.
- If the sanitary sewer pipeline is located, collect one sample adjacent to and immediately below the pipeline elevation.
- If the sanitary sewer pipeline is not located, collect one sample at the bottom of the pit at the expected location of the pipeline.

All test pit material will be field screened for volatiles and radioisotopes per Section 3.2.2.2. Sample material will be collected per EII 5.2, Soil and Sediment Sampling, Appendix F (WHC 1988a). A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The logbook will be used and maintained per EII 1.5 Field Logbooks (WHC 1988a).

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody is initiated and maintained after the sample is collected per EII 5.1 Chain of Custody (WHC 1988a).

Any excavated soil will be replaced in the test pit site after sampling is completed in approximately the reverse order, so that the first bucketful excavated is the last bucketful backfilled. This will be conducted per EII 5.2, Soil and Sediment Sampling, Appendix F (WHC 1988a).

3.3 100-DR SEPTIC TANKS/TILE FIELDS

Sanitary sewage generated at the 100-D/DR Area was treated in underground septic tanks and subsequently discharged to associated tile fields. There is no documentation of hazardous wastes being disposed of in these facilities. Because of the diversity of the support functions carried out in the 100-D/DR Area (e.g., the laboratory and the maintenance shops, which included a paint shop and an automotive repair shop), it is conceivable that some chemical or radiological wastes could have been disposed of in these facilities.

3.3.1 Location

This section addresses the sampling of the three septic tanks and tile fields as described in the 100-DR-1 Operable Unit work plan (DOE-RL 1991, Section 2.1.4.6). The location of sanitary septic systems in relation with other landmarks in the 100-DR-1 Operable Unit is provided by DOE (DOE-RL 1991, Figure 2-2). The sanitary sewer transfer, treatment, and disposal facilities to be sampled are the 1607-D2 (124-D-2), the 1607-D4 (124-D-4), and the 1607-D5 (124-D-5) sanitary septic systems. Figure 4 shows the locations of these facilities.

Brief descriptions of the three facilities are as follows:

- 1607-D2 (124-D-2) sanitary septic system: The system, constructed in 1950, is active. It's location is clearly documented in drawings, aerial photographs, and by field features. This tank served the 182-D, 183-D, 190-D, and several 1700-D office and maintenance service buildings. It also served the 118-D-6 reactor building. The septic tank is located in the area of the 116-D-7 and 116-DR-9 retention basins, in the northeast corner of the 100-DR-1 Operable Unit. This tile field replaced the tile field constructed in the present location of 116-DR-9.

- 1607-D4 (124-D-4) sanitary septic system: The site appears to have been decommissioned, but no documentation was found to confirm this. This septic tank and tile field received sanitary sewage from the 115-D gas recirculation building. It is located in the southeast corner of 100-DR-1 near the 118-D-6 reactor building and related facilities. Although there are some conflicting descriptions as to the tank's location, it is believed to be approximately 100 ft east of the south end of the 115-D building.

- 1607-D5 (124-D-5) sanitary septic system. This system is active. It's location is clearly documented in drawings, aerial photographs, and by field features. This tank and tile field received sanitary sewage from the 181-D River Pumphouse. It is located in the southwest corner of the 100-DR-1 Operable Unit near the banks of the Columbia River adjacent to the river pumphouse.

3.3.2 Sample Analysis

3.3.2.1 Contaminants of Concern. The contaminants of concern for the sanitary septic systems are: (1) solvent products from the maintenance shops and (2) possible low level radioactive contaminants from the reactor buildings. Because of the uncertainty of the sewer pipeline contaminants, the soil samples will be analyzed for the full range of radioisotopes and CERCLA TAL and TCL constituents (DOE-RL 1992, Table QAPjP-1).

3.3.2.2 Field Screening. The field screening discussed in this section is not for health and safety determination. Health and safety issues are covered in the RWP or the JSA. Field screening covered in this section is for the purpose of selecting samples for laboratory analysis. Samples will be field screened for volatiles and radioactivity. If the FTL finds radioactive contamination two times background or volatiles contamination five times background, a sample will be taken per Section 3.3.4.

Background will be determined before excavation is started. The FTL will determine the ambient radiation and volatiles background 3 ft over the sampling site. The background will be determined per EII 3.4, Field Screening, Appendixes A and B (WHC 1988a). The radiation and volatiles backgrounds will be recorded in the field logbook.

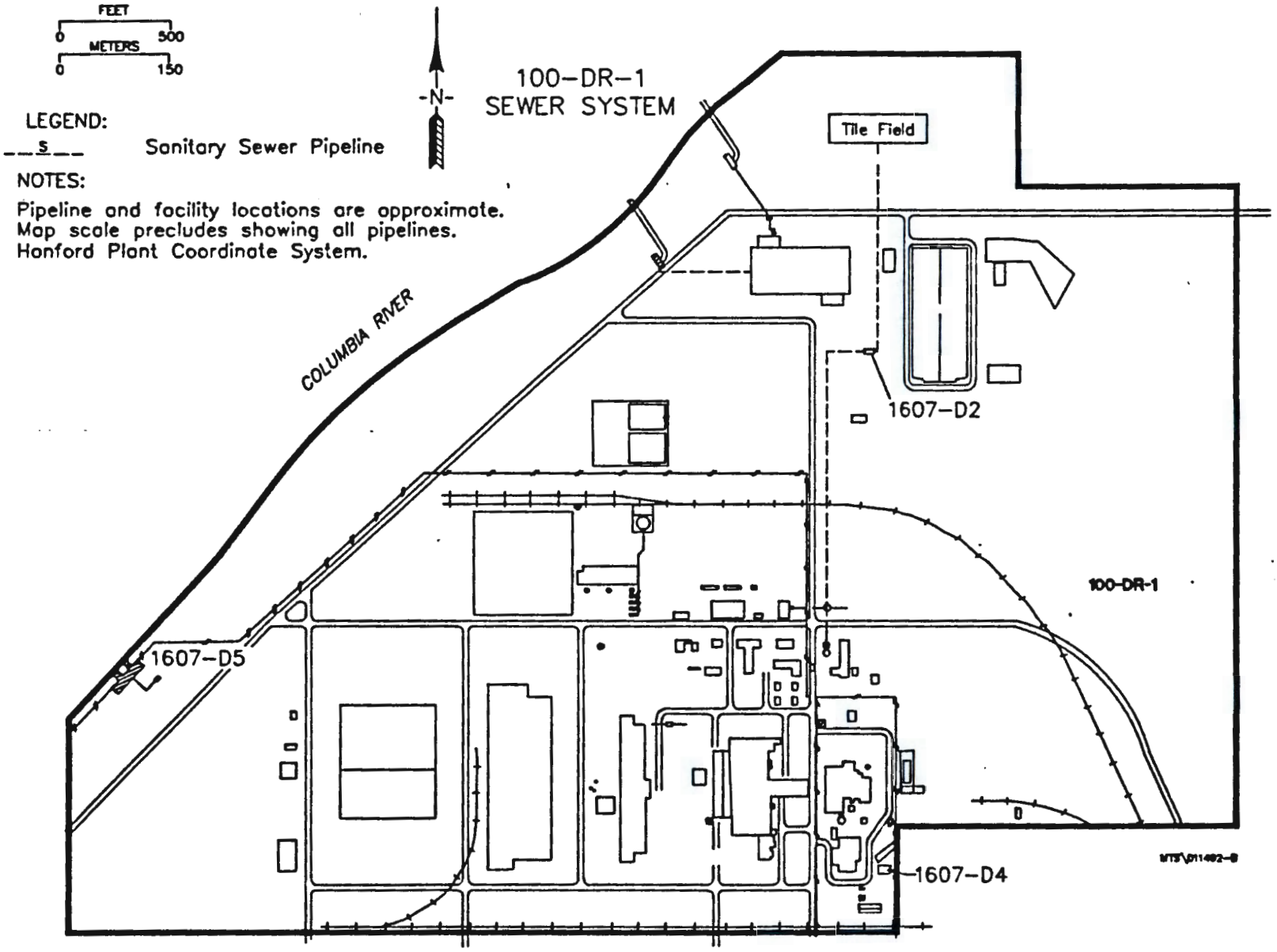


Figure 4. 1607-D2, 1607-D4, and 1607-D5 Sanitary Sewer System.

The samples will be field screened for volatiles and radioactivity. Radiation field screening will be performed using a GM instrument with a P-11 probe. The volatiles will be screened using an OVM. The OVM will be calibrated and maintained per EII 3.4, Field Screening (WHC 1988a).

3.3.2.3 Laboratory Analysis. The soil samples will be analyzed for:

Analyte		Method
Volatile		TCL-CLP
Semivolatile		TCL-CLP
PCB/Pesticides		TCL-CLP
TAL		TAL-CLP
Mercury		TAL-CLP
TCLP[a]		1311
Cyanide		TAL-CLP
Anions		EPA 300 and 353.2
Radioisotopes		Performed under laboratory standard procedure
^{14}C		
^{90}Sr		
Gross Alpha		
Gross Beta		
Alpha Spec:	to include $^{235,238}U$, $^{239/240}Pu$, and ^{241}Am	
Gamma Spec:	report all identifiable and quantifiable isotopes	
Total Activity		

[a]Sample is being analyzed for another WHC group information and is not a requirement of the work plan.

The liquid samples will be analyzed for:

Analyte	Method
Volatile	TCL-CLP
Semivolatile	TCL-CLP
PCB/Pesticides	TCL-CLP
TAL	TAL-CLP
Mercury	TAL-CLP
Cyanide	TAL-CLP
Anions	EPA 300, 350.3, and 353.2
Sulfide	9030
Total Dissolved Solids	160.1
Akalinity	310.1
Turbidity	180.1
pH	9040
Chemical Oxygen Demand	410.1
Specific Conductance	120.1
Total Organic Halogens (TOX) and Total Organic Carbons (TOC)	9020/9060
TCLP	1311
Temperature	Field metered
Dissolved Oxygen Probe	Field metered
Radioisotopes	Performed under laboratory standard procedure
^{14}C	
^{90}Sr	
^{99}Tc	
Gross Alpha	
Gross Beta	
Alpha Spec: to include $^{235,238}U$, $^{239/240}Pu$, and ^{241}Am	
Gamma Spec: report all identifiable and quantifiable isotopes	
Tritium	EPA 906
Total Activity	

3.3.3 Inactive Septic Tank Sampling Collection

3.3.3.1 Tank Sampling. The sampling activity of the 1607-D4 (124-D-4) sanitary septic system is divided into three parts: achieving access to the tank, sampling the contents of the tank, and returning the site to it's preexisting condition. This section only covers the source sampling of the tank. If the tank is not present or if it has been backfilled and access is not possible with hand-held equipment, sampling will be postponed and addressed at a later date.

Geophysics techniques EII 11.2, Geophysical Survey Work (WHC 1988a) will be used to locate and stake out the septic tank location. The cover material will be removed from the top of the septic tank to gain access to the cleanout ports. As the cleanout port covers are removed, the Site Safety Officer (SSO) and HPT will monitor as specified by the JSA and RWP.

After access to the tank is achieved, the field team leader will determine the sample(s) according to the following guidelines:

Situation	Criteria
Empty tank (no liquid, sludge, or fill material)	No sample will be taken. Document sampling attempt in field logbook and close tank.
Liquid	Take a sample of liquid from each compartment in tank. After liquid is sampled, probe liquid to verify presence of sludge below liquid. If sludge present, take sample. If no sludge is present, document sampling attempt in field logbook and close tank after sampling completed.
Sludge	Take sample of sludge from each compartment in tank. Document sampling in field logbook and close tank after sampling completed.
Fill material	If tank contains fill material, attempt to auger to bottom to determine if sludge is present. If sludge is present, take sample. Document sampling in field logbook. If auger attempt is unsuccessful, document in field logbook and close tank.

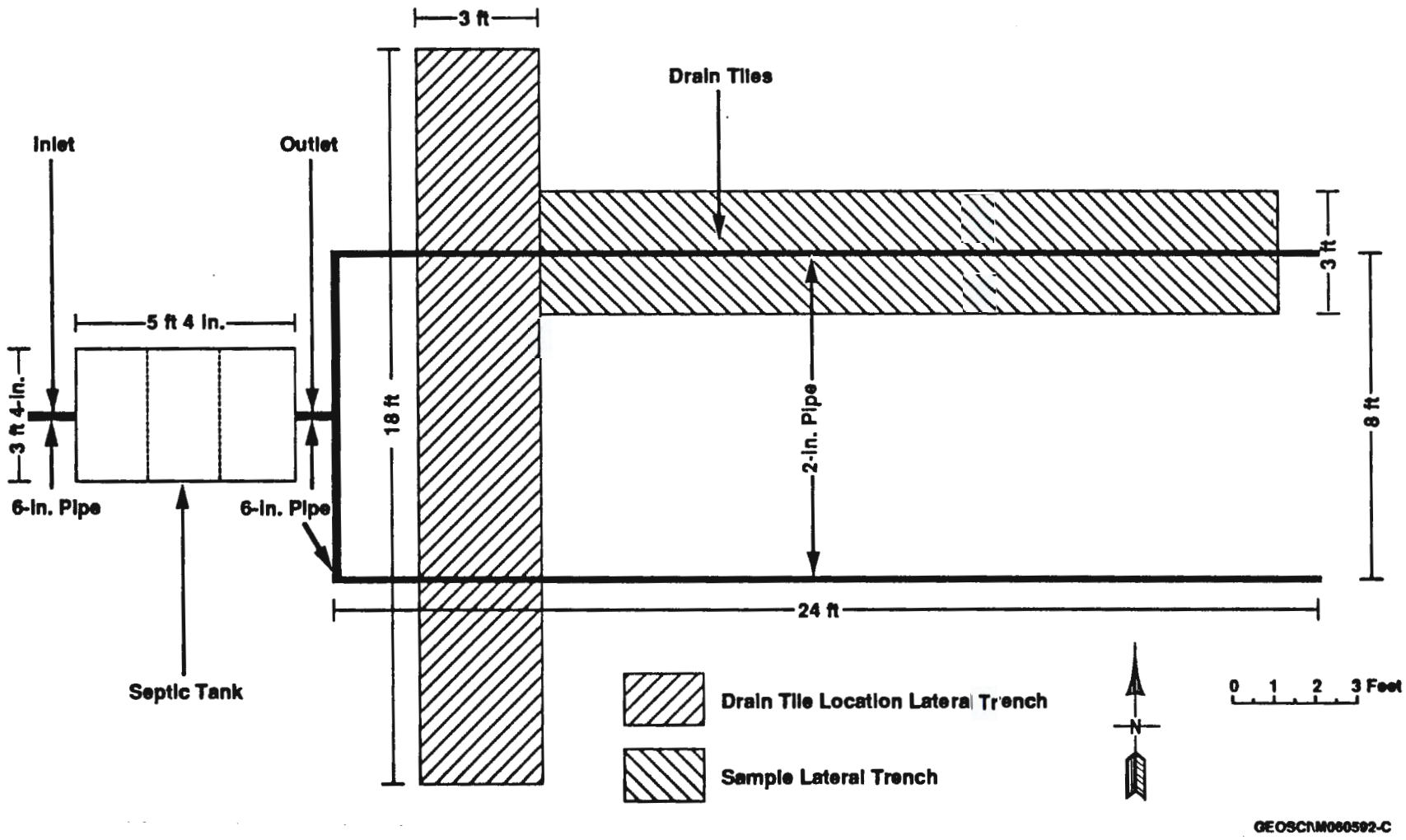
All material removed from inside of the septic tank will be field screened for volatiles and radioactivity per Section 3.3.2.2. All samples will be collected in the order shown in Section 3.3.2.3. Sludge samples will be collected per EII 5.2, Soil and Sediment Sampling, Appendix G (WHC 1988a). Liquid samples will be collected as recommended by the EPA (EPA 1986, Section 9.2.2.4). A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The log-book will be used and maintained per EII 1.5, Field Logbook (WHC 1988a).

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody is initiated and maintained after the sample is collected. The chain of custody is done per EII 5.1, Chain of Custody (WHC 1988a).

The excavated dirt will be replaced over the septic tank site after sampling is completed and the cleanout port cover has been secured. The excavation and return of the site to normal will be covered by EII 5.2, Soil and Sediment Sampling, Appendix F (WHC 1988a).

3.3.3.2 Test Pit Sampling. The test pit will be constructed in an area staked as shown in Figure 5. The test pit will form an "L" over the site. The exploratory trench will be excavated first with the purpose of locating the tile field. The exploratory trench will start approximately 5 ft beyond the estimated location of the tile field pipeline. This trench will be excavated until one of the two tile field pipelines is uncovered.

Figure 5. 1607-D4 Test Pit.



After the tile field pipe is located, the trench will follow the tile field pipe, excavating sufficent quantity of soil to complete the sampling activity. The tile field is expected to be found within 4 ft of the surface. If the tile field is not located, the excavation will be deepened to a maximum of 10 ft.

The test pit will be constructed per the safety constraints required in the JSA. At the direction of the FTL, plastic or other covering may be placed on the ground adjacent to the excavation for temporary stockpiling of the excavated material. Excavated material will be continously screened per the criteria stated in Section 3.3.2.2

Analytical samples will be collected directly from the backhoe bucket using hand tools and standard sampling techniques per EII 5.2, Soil and Sediment Sampling, Appendix A and I (WHC 1988a). The bucket of the backhoe will be decontaminated or cleaned of visible dirt before sampling and between sampling locations. A bucket of soil will be removed from the desired sampling location and brought to the side of the test pit for sampling. Samples shall be collected from soil in the middle of the bucket, away form the sides. All sample material will be collected in the order shown in Section 3.4.3.3. Four samples will be collected:

- field sample
- duplicate
- split
- equipment blank.

After the samples have been collected from the pit, the pit will be backfilled in approximately the reverse order, so that the first bucketful excavated is the last bucketful backfilled. Should any waste be generated, it will be handled per EII 4.3, Control of CERCLA and Other Past-Practice Investigation Derived Waste (WHC 1988a).

3.4 126-D-1 ASH DISPOSAL BASIN

3.4.1 Facility Background

The 126-D-1 Ash Disposal Basin was used from 1944 to 1967. The basin received ash from the 184-D Powerhouse. The ash was sluiced to the site using a water solution. The eastern half of the basin was excavated in 1977 for the 120-D-1 Ponds. Piles of ash approximately 20 to 30 ft high currently remain on the site (DOE-RL 1992, Section 2.1.4.10.2).

3.4.2 Location

The 126-D-1 Ash Disposal Basin is located in the north central area of the 100-DR-1 Operable Unit. It is approximately 625 ft southeast of the Columbia River. The coal pits originally occupied an area of approximately 90,000 ft^2 (AEC-RL 1954). When the 120-D-1 Ponds where excavated, part of the ash was moved to the north and east of it's original position. The ash disposal basin now occupies an area of approximately 580,000 ft^2 (DOE-RL 1991). The current NAD-83 coordinates are approximately N152,000 - 152,200 and E573,360 - 573,610 (DOE-RL 1991). The current surface grade is from 467

to 487 ft above sea level. Figure 6 shows the location of the facility in relation to other buildings in the 100-DR-1 Operable Unit.

The sample will be located in an undisturbed area west of the 120-D-1 Ponds. The sample location will be marked and recorded in the field logbook by the FTL.

3.4.3 Sample Analysis

3.4.3.1 Contaminants of Concern. The contaminants of concern for the 126-D-1 Ash Disposal Basin are concentrations of heavy metals and naturally occurring radioactive material from the burned coal. Because of the uncertainty of contaminants, ash samples will be analyzed for the full range of radioisotopes, anions, and CERCLA TAL and TCL constituents (DOE-RL 1992, Table QAPjP-1).

3.4.3.2 Field Screening. There is no field screening being performed with this sampling task.

3.4.3.3 Laboratory Analysis. All samples will be analyzed per Section 5.0. The list of analyses is consistent with the work plan (DOE-RL 1992). If full sample volume requirements cannot be met, the field sampler will record the volume obtained in the sampling logbook per EII 1.5, Field Logbooks (WHC 1988a) and the analysis will occur in the following order:

1. TCL Volatiles
2. TCL Semivolatiles/PCB/Pesticides/Anions
3. TAL metals
4. Radioisotopes
5. Total Activity.

3.4.4 Sample Collection

Sampling will be done by using a hand auger/scope. The auger/scope will be used per EII 5.2. Soil and Sediment Samples, Appendix A (WHC 1988a). Two samples will be taken at one site, west of 120-D-1 Ponds. The sample site will be about in the middle of it's respective mound in an undisturbed area. One sample will be taken within 1 ft of the surface and another at 3 ft. The sample will be bias to begin below any vegetation cover over the ash.

The test pit will be constructed per the safety constraints required in the JSA. At the direction of the FTL, plastic or other covering may be placed on the ground adjacent to the excavation for the temporary stockpiling of excavated material. A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The field logbook will be used and maintained per EII 1.5, Field Logbook, (WHC 1988a).

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody is initiated and maintained after sample is collected per EII 5.1, Chain of Custody (WHC 1988a).

The excavated dirt will be replaced in the sample site after sampling is completed. The excavation and return of the site to normal will be covered by EII 5.2, Soil and Sediment Sampling, Appendix A (WHC 1988a).

Five samples will be collected including quality assurance/quality control (QA/QC). The trip blank and field blank have been deleted per EPA/540/G-87/004 Appendix C, Section C.6 (p. 13). The equipment blank media shall be silica sand. The following is a summary of the samples to be collected:

- near-surface sample (within 1 ft of the surface)
- 3 ft sample
- duplicate
- split
- equipment blank.

3.5 100-D SALT DISSOLVING PIT

3.5.1 Facility Background

Little is known about the site, but oral accounts suggest the 100-D Salt Dissolving Pit contained salt that was used as a water softener for 184-D Powerhouse feedwater. The pit is believed to have been used from 1944 to 1967, the same timeframe as 184-D Powerhouse. The test pit has been remediated. During the remediation, the excess salt was removed and sold as excess. The interior was then cleaned and backfilled with soil. Field investigation revealed reduced vegetation that corresponds with the location of the pit on site drawings (DOE-RL 1992, Section 2.1.4.10.4).

3.5.2 Location

The 100-D Salt Dissolving Pit is located in the north central area of the 100-DR-1 Operable Unit. It was north of 184-D Powerhouse and south of the 126-D-1 Ash Disposal Basin. The pit is located approximately 980 ft southeast of the Columbia River. The current NAD-83 coordinates are approximately N151,960 and E573,380 (DOE-RL 1991). The current surface grade is 469 ft above sea level. Figure 7 shows the location of the facility in relation to other buildings in the 100-DR-1 Operable Unit. The sample site will be determined and staked out using information from GPR and locations of reduced vegetation. The sample location will be marked and recorded in the field logbook by the FTL.

3.5.3 Sample Analysis

3.5.3.1 Contaminates of Concern. The contaminates of concern for the 100-D Salt Dissolving Pit are concentrations of heavy metals. Because of the uncertainty of the contaminates, the salt dissolving pit samples will be analyzed for the full range of radionuclides, selective anions, and CERCLA TAL and TCL constituents (DOE-RL 1992, Table QAPjP-1).

3.5.3.2 Field Screening. The field screening discussed in this section is not for health and safety determination. Health and safety issues are covered in the RWP or the JSA. Field screening described in this section is for the purpose of selecting samples for laboratory analysis. Samples will be field screened using X-ray fluorescence. If the FTL finds contamination two times background, a sample will be taken per Section 3.5.4.

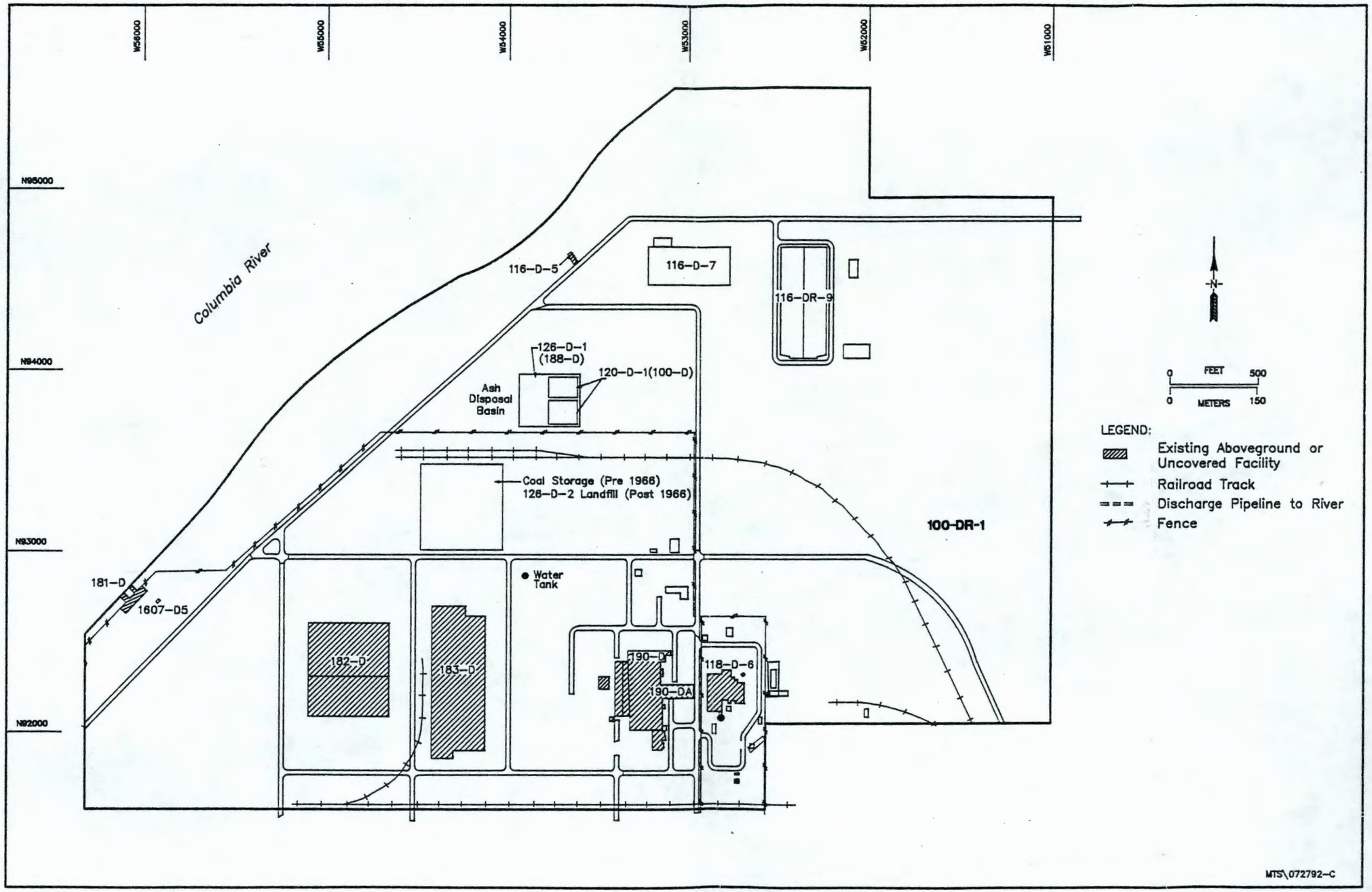


Figure 6. 126-D-1 Ash Disposal Basin Location.

9 2 1 2 6 5 8 1 5 7 0

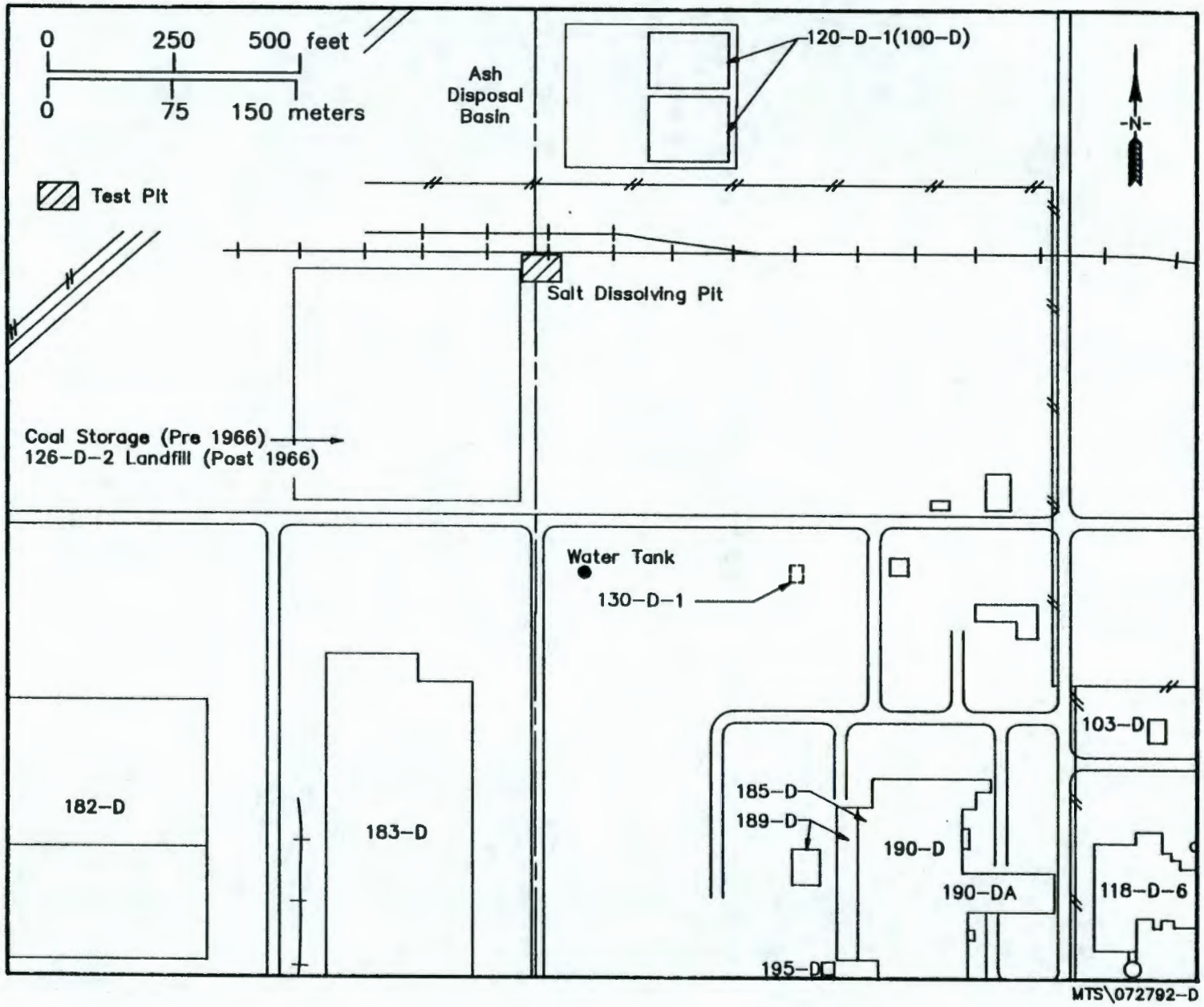


Figure 7. 100-DR-1 Salt Dissolving Pit Location.

Background will be determined before excavation is started. The FTL will determine the background per WHC field screening plan (Guzek 1992). The background will be recorded in the field logbook.

3.5.3.3 Laboratory Analysis. All samples will be analyzed per Section 5.0. The list of analyses is consistent with the work plan (DOE-RL 1992). If full sample volume requirements cannot be met, the field sampler will record the volume obtained in the sampling logbook per EII 1.5, Field Logbooks (WHC 1988a) and the sample collection will occur in the following order:

1. TCL Volatiles
2. TCL Semivolatiles/PCB/Pesticides/Anions
3. TAL metals
4. Radioisotopes
5. Total Activity.

3.5.4 Test Pit Construction

The test pit will be constructed in an area staked out as part of Section 3.5.2. Figure 8 shows the site location and the projected test pit perimeter. The pit area will be approximately 20 by 20 ft. The estimated depth of the pit is 15 ft. The pit will be excavated using a backhoe. The backhole will be used per EII 5.2, Soil and Sediment Samples, Appendix I (WHC 1988a).

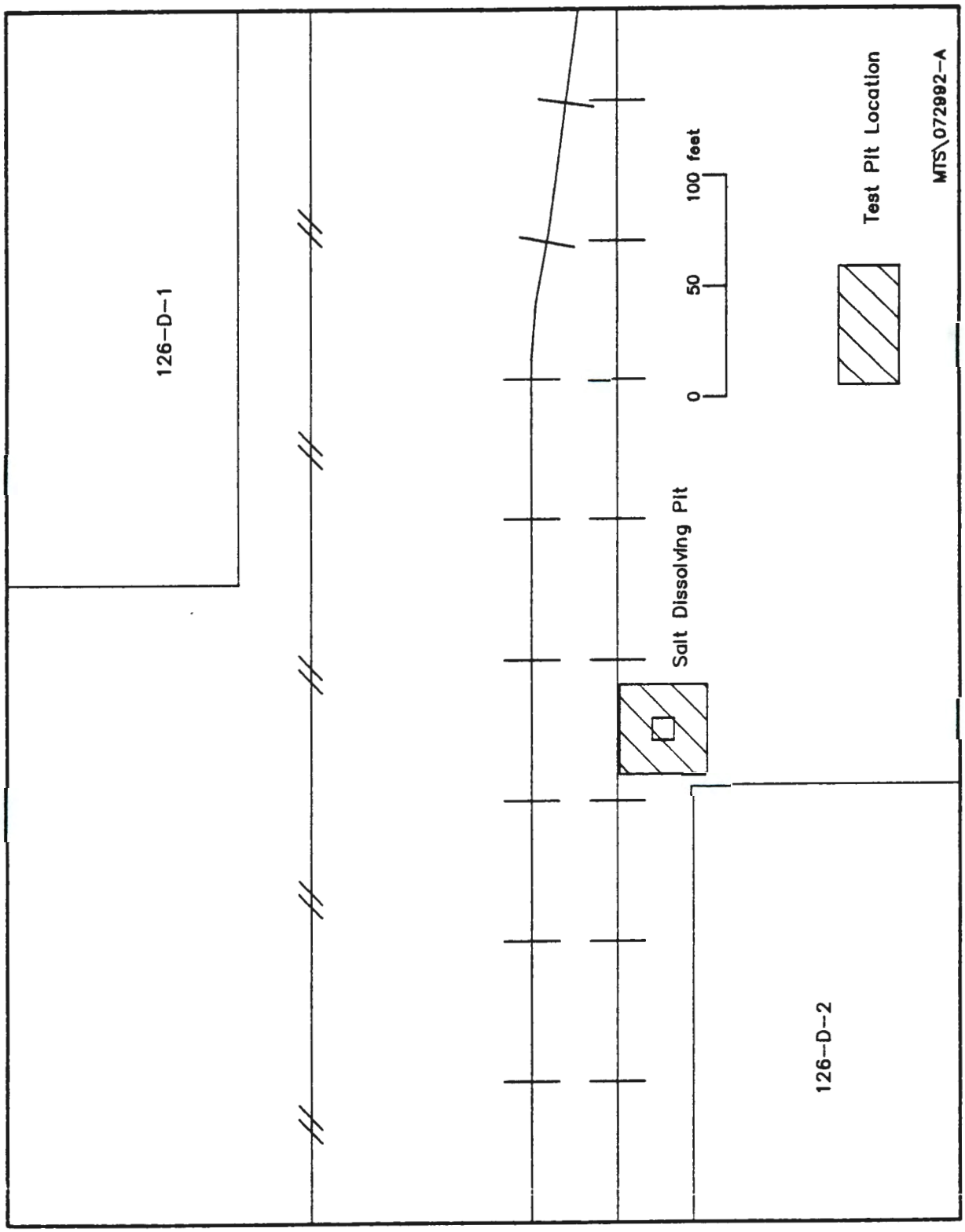
The test pit will be constructed per the safety constraints required in the JSA. At the direction of the FTL, plastic or other covering may be placed on the ground adjacent to the excavation for the temporary stockpiling of excavated material. Excavated material will be continuously screened be the criteria stated in Section 3.5.3.2 from the surface to the final depth. A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The field logbook will be used and maintained per EII 1.5, Field Logbook, (WHC 1988a).

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody will be initiated and maintained after the sample is collected per EII 5.1, Chain of Custody (WHC 1988a).

After all samples have been collected at the pit site, the excavation will be backfilled in approximately the reverse order, so that the first bucketful excavated is the last bucketful backfilled. The site will be returned to it's original condition. Should any waste be generated, it will be handled per EII 4.3, Control of CERCLA and Other Past-Practice Investigation Derived Wasted (WHC 1988a).

9 2 1 2 6 5 8 1 5 7 2

Figure 8. 100-DR-1 Salt Dissolving Pit Test Pit Area.



3.5.5 Sample Collection

Analytical samples will be collected directly from the backhoe bucket using hand tools and standard soil sampling techniques per EII 5.2, Soil and Sediment Sampling, Appendix A (WHC 1988a). The bucket of the backhoe will be decontaminated or cleaned of visible dirt before sampling and between sample locations. The bucket of soil will be removed from the desired sampling intervals and brought to the side of the test pit for sampling. Sample shall be collected from soil in the middle of the bucket, away from the bucket sides. All samples will be collected in the order shown in Section 3.5.3.3. Two samples will be collected at the site. The following criteria will be used as a guideline in determining the samples:

- The first sample will taken at the first indication of contamination using X-ray fluorescence.
- A second sample will be taken when X-ray fluorescence shows the excavation has passed through the contamination and is now in clean soil.
- If no contamination is detected, the first sample will be taken next to the bottom of the concrete salt pit on the left side of the tank and a second sample will be taken on the right side at approximately the same depth.

Five samples will be collected including QA/QC. The trip blank and field blank have been deleted per EPA/540/G-87/004 Appendix C, Section C.6 (p. 13). The equipment blank media shall be silica sand. The following is a summary of the samples to be collected:

- two field samples
- duplicate
- split
- equipment blank.

3.6 103-D GREEN METAL STORAGE FACILITY

3.6.1 Facility Background

The 103-D Green Metal Storage Facility was used originally for storing unirradiated fuel from 1944 to 1967. Verbal communications indicated that the facility was not contaminated during its original use but may have become contaminated when it was used to store packaged radioactive samples. During a 1989 field visit, the facilty was posted with herbicide and solvent warning signs. Recent oral accounts indicate that the building has since been cleaned and no longer contains samples, solvents, or herbicides.

Information on where the herbicide and radioactive samples were stored is sketchy. From oral accounts, the herbicides were stored in a caged area in the northeast portion of the building. The location of the radioactive samples storage is reported to be in the center of the building.

The objective of this sampling is to screen the inside of the building to determine if futher sampling is warranted outside of the building.

3.6.2 Location

The 103-D Green Metal Storage Facility is located just north of the 118-D-6 (105-D reactor building) and is contained in the 105-D exclusion fence. The present NAD-83 coordinates are N151685 and E573775. Figure 9 shows the location of the facility in relation to other buildings in the 100-DR-1 Operable Unit.

3.6.3 Sample Analysis

3.6.3.1 Contaminants of Concern. The contaminants of concern for the 103-D Green Metal Storage Facility are concentrations of radioisotopes (types and amounts unknown), solvents (type unknown), and herbicides (types unknown). Because of the uncertainty of the contaminants and amounts, the samples will be analyzed for radioisotopes, CERCLA TCL semivolatiles, pesticides, PCBs (DOE-RL 1992, Table QAPjP-1), and herbicides.

3.6.3.2 Field Screening. A GM instrument with a P-11 probe will be used under the direction of the FTL to determine optional sample locations. The instrument will be checked each day to ensure that it is working per EII 3.2 Health and Safety Monitoring Instruments (WHC 1988a). The instrument will be checked against a check source. Results will be recorded in the field logbook.

A check of the the background level at the site will be conducted at the beginning of each day by holding the instrument in ambient air for 15 seconds. Results will be recorded in the field logbook.

Walls and floor will be screened by holding the GM within 1/2 in. of the surface for 15 seconds. When screening levels are two times the background level, a sample may taken per Section 3.6.5. All results will be recorded in the field logbook.

3.6.3.3 Laboratory Analysis. All samples will be analyzed per Section 5.0. The list of analyses is consistent with the work plan (DOE-RL 1992). If full sample volume requirements cannot be met, the field sampler will record the volume obtained in the sampling logbook per EII 1.5, Field Logbooks (WHC 1988c) and the analysis will occur in the following order:

1. Herbicides
2. Radioisotopes
3. TCL Semivolatiles/PCB/Pesticides
4. Total Activity.

3.6.4 Wipe Sampling

Wipe sampling consists of rubbing a moistened filter paper over a measured area of 1 m^2. The paper is then sent to the laboratory for analysis. The results are related back to the known area of the sample. The steps to this procedure are essential to ensure a representative, uncontaminated sample (EPA 1987).

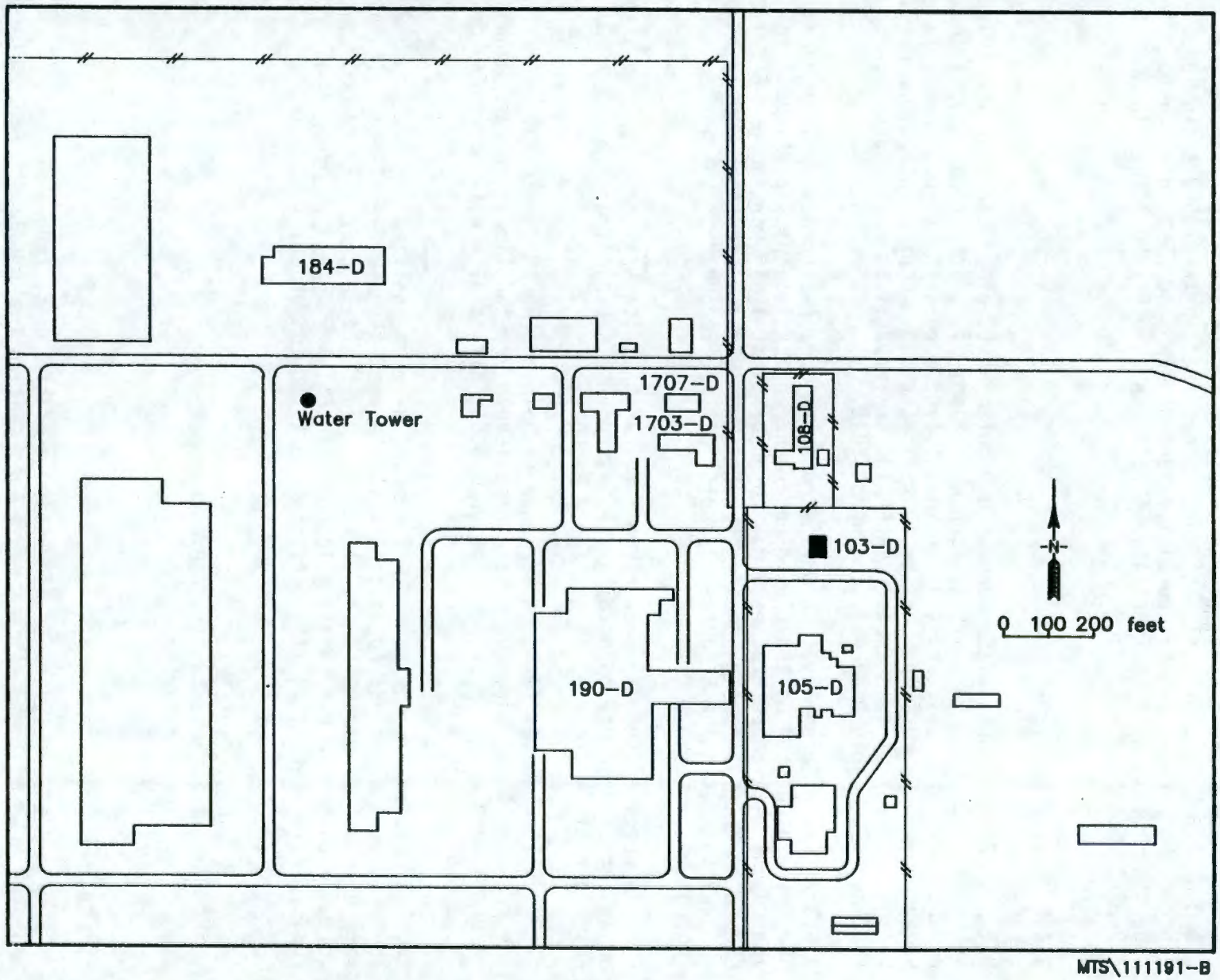


Figure 9. 103-D Green Metal Storage Facility Location.

Equipment required for this sampling are:

- filter paper (15 cm)
- disposable chemical-protective gloves
- collection media (organic-free water) to wet filter paper
- sample collection jars.

The steps involved in obtaining a wipe sample are:

- Use a 1-m^2 stencil to mark the sample area.

- Use a clean impervious glove, such as a surgeon's glove, to remove a filter paper from the container. A new glove will be used on each new sample.

- Moisten the sample with the collection medium to dissolve the contaminants of concern. Filter should be wet but not dripping.

- Thoroughly wipe the sample area. If a different size area is wiped, record the change in the field logbook. If the surface is not flat, wipe any crevices or depressions.

- Without allowing the filter paper to contact any other surfaces, fold it with the exposed side in, then fold it over to form a 90-degree angle in the center of the filter.

- Place the filter (angle first) into a clean glass jar, replace the top, seal the jar according to laboratory and shipping requirements, and send the sample to the appropriate laboratory.

- Prepare a blank by moistening a filter with the collection medium. Place the blank in a separate jar, and submit it with the other samples.

- Document the sample collection in the field logbook.

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody will be initiated and maintained after the sample is collected per EII 5.1, Chain of Custody (WHC 1988a). Should any waste be generated it will be handled per EII 4.3, Control of CERCLA and Other Past-Practice Investigation Derived Wasted (WHC 1988a).

3.6.5 Sample Locations and Collection

All sample collection will be under the direction of the FTL. Before sample collection, the FTL will ensure that the inside of 103-D faciltiy has been field screened per Section 3.6.3.2. All areas exceeding the screening criteria will be marked as potential sampling locations.

Three general sample areas have been selected as locations of possible contamination. Figure 10 shows the general sample locations. The FTL will select a sample site in each of the sampling areas. The sample sites are:

1. Sample No. 1 will be in the storage cage area. The purpose of this sample location is to check for herbicides.

2. Sample No. 2 will be at the southeast door. The purpose of this sample location is to check for herbicides and radionuclides.

3. Sample No. 3 will be at the southwest door. The purpose of this sample location is to check for herbicides and radionuclides.

4. This is an optional sample. This sample can be taken at the FTL discretion. The purpose of this sample is to check for radionuclides.

5. Same as item No. 4 above.

4.0 SAMPLE LABELING

The Hanford Environmental Information System (HEIS) is used to track the sample and laboratory data obtained during environmental investigations conducted under this description of work. Each sample will be identified and labeled with a unique HEIS sample number. HEIS numbers will be assigned in per HEIS operation procedures. Field sampling data will be collected and recorded in the field logbook (WHC-N-429-1).

5.0 ANALYSES

Samples collected for chemical analysis will be analyzed for the full suite of CERCLA CLP TCL and TAL constituents, specific anions, radionuclides, and TCLP (108-D Office Building and 100-DR-1 Septic Tanks/Tile Fields). TCLP shall be analyzed for information purposes only and is not a requirement of the work plan (DOE-RL 1992). Estimated quantity of material needed for analyses are shown in Tables 1, 2, 3, and 4. The laboratory will use existing Level III and Level IV methods for CLP TCL and TAL constituents, Level V for radionuclides, and Level III methods for TCLP. The specific anions will be analyzed using EPA methods (EPA 1986). Sample custody will follow the procedures as specified in the 100-DR-1 Operable Unit work plan (DOE-RL 1992, Appendix A, Section 5.1) and EII 5.1 Chain of Custody (WHC 1988a).

Figure 10. 103-D Green Metal Storage Facility Sample Locations.

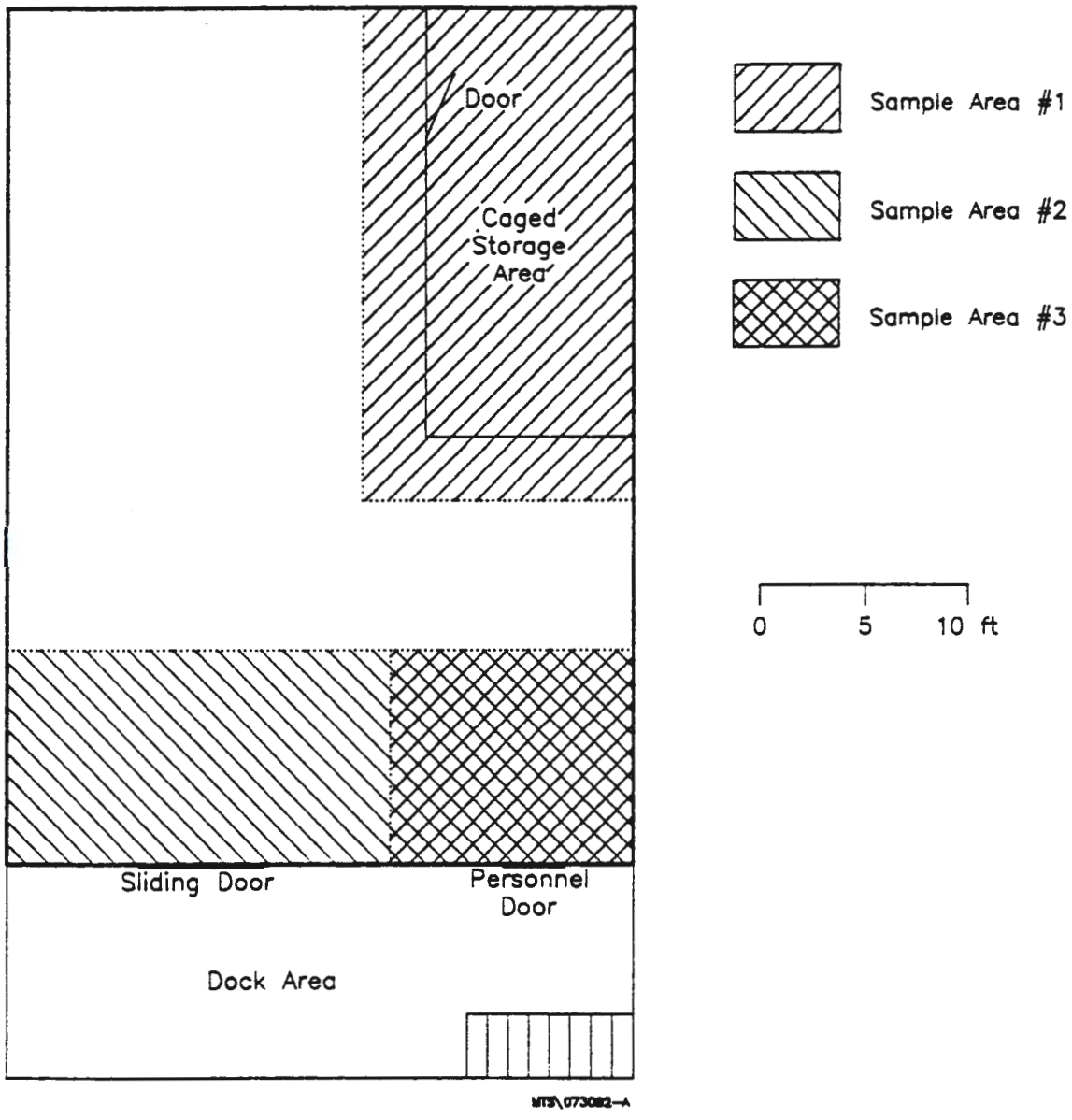


Table 1. Sodium Dichromate Tanks Soil Analyte List.

Analyte	Method	Holding Time	Container/Volume
AA metals/mercury/ cyanide	CLP	6 mo/28 d/14 d	Glass/500 mL
Volatile organic	CLP	14 d	Glass (septum)/125 mL
Semivolatile organic PCB/pesticides	CLP CLP	7 d[a]	Amber glass/1,000 mL
Anions	EPA 300	28 d & 48 h	Amber glass/250 mL
Carbon-14 Strontium-90 Gross alpha Gross beta Gamma spec	Lab SOP	6 mo	Glass/1,000 mL
Alpha spec	Lab SOP		
Total Activity (222-S Lab)		6 mo	Plastic or glass vial (at least 1 g)

[a]7 d for extraction, 40 d after extraction for analysis.

Table 2. 108-D Office Building and 100-DR-1 Septic Tank/Tile Field Soil Analyte List.

Analyte	Method	Holding Time	Container/Volume
AA metals/mercury/ cyanide	CLP	6 mo/28 d/14 d	Glass/500 mL
Volatile organic	CLP	10 d	Glass (septum)/125 mL
Semivolatile organic PCB/pesticides	CLP CLP	10 d[a]	Amber glass/250 mL
Anions	EPA 300, 353.2	28 d	Amber glass/125 mL
TCLP[b]	1311	6 mo	Glass/125 mL
Carbon-14 Strontium-90 Gross alpha Gross beta Gamma spec	Lab SOP	6 mo	Glass/1,000 Ml
Alpha spec	Lab SOP		
Total Activity (222-S Lab)		6 mo	Plastic or glass vial (at least 1 g)

[a]10 d for extraction, 40 d after extraction for analysis.
[b]for 108-D and septic tanks/tile field only.

Table 3. 1607-D4 Liquid Analyte List.

Analyte	Method	Preservation	Holding Time	Container/Volume
AA metals Mercury	CLP	HNO_3	6 mo 28 d	Plastic/1,000 mL
Cyanide	CLP	NaOH	14 d	Glass/1,000 mL
Volatile organic	CLP	None	14 d	Glass (septum) 3 con, 40 mL each
Semivolatile organic PCB/pesticides	CLP	None	5 d[a]	Amber glass 2,000 mL
Anions	EPA 300, & 353.2	None	28 d	Plastic/500 mL
Sulfide	9030	ZnAc & NaOH	7 d	Glass/100 mL
TCLP metals	1311	None	6 mo	Plastic/150 mL
TDS Turbidity pH	160.1 180.1 9040	None	7 d 14 d ASAP	Plastic/1,000 mL
Chemical oxygen demand Ammonia (as nitrogen)	410.1 350.2	H_2SO_4	28 d	Plastic/500 mL
Specific conductance	120.1	None	28 d	Glass/500 mL
TOX	9020	H_2SO_4	28 d	Glass (septum) 250 mL
TOC	9060	H_2SO_4	28 d	Amber glass/125 mL
Temperature Dissolved oxygen probe Turbidity	Field Metered	None	ASAP	As required
Strontium-90 Gross alpha Gross beta Gamma spec Alpha spec	Lab SOP	HNO_3	6 mo	Plastic/6,000 mL
Tritium	Lab SOP	None	6 mo	Plastic/1,000 mL
Carbon-14	Lab SOP	None	6 mo	Plastic/500 mL
Technetium-99	Lab SOP	None	6 mo	Plastic/1,000 mL
Total Activity (222-S Lab)			6 mo	Plastic/glass vial (at least 1 g)

[a]5 d for extraction, 40 d after extraction for analysis.

9 2 1 2 6 5 8 1 5 8 2

Table 4. Ash Disposal Basin, Salt Dissolving Pit, and 1607-D4 Test Pit Analyte List.

Analyte	Method	Holding Time	Container/Volume
AA metals/mercury/ cyanide	CLP	6 mo/28 d/14 d	Glass/500 mL
Volatile organic	CLP	10 d	Glass (septum)/125 mL
Semivolatile organic PCB/pesticides	CLP CLP	10 d[a]	Amber glass/250 mL
Anions	EPA 300, 353.2	28 d	
Carbon-14 Strontium-90 Gross alpha Gross beta Gamma spec	Lab SOP	6 mo	Glass/1,000 mL
Alpha spec	Lab SOP		
Total Activity (222-S Lab)		6 mo	Plastic or glass vial (at least 1 g)

[a]10 d for extraction, 40 d after extraction for analysis.

6.0 QA/QC REQUIREMENTS

Internal QC samples shall be collected as specified in the 100-DR-1 Operable Unit work plan (DOE-RL 1992, Table QAPjP-1).

The following QA sample will be collected for the 108-D Office Building and Equipment Decontamination Station, the 126-D-1 Ash Disposal Basin, the 100-D Salt Dissolving Pit, and the 1607-D4 Test Pit.

QA Sample	QC	Medium
Equipment blank (one per trip container)	A pedigree of matrix will be included in project file.	Silica sand
Field duplicate (one sample)		First soil sample taken
Split (one sample)		First soil sample taken

The following QA sample will be collected for the 100-DR Septic Tank/Tile Fields.

QA Sample	QC	Medium
Trip blank (one per trip container)	A pedigree of matrix will be included in project file.	Deionized distilled water
Field duplicate (one sample of each matrix)		From chamber closest to inlet to tank water, sludge
Split (one sample of each matrix)		From chamber closest to inlet to tank
Equipment blank (one sample of liquid matrix)		Deionized distilled water
Field blank (one sample of liquid matrix)		Deionized distilled water

The FTL will document in the field logbook the QA sample's HEIS number, sample location, sample medium, and any relationship to other samples.

9 2 1 2 6 5 8 1 5 8 4

7.0 SCHEDULE

The following schedule is for nonintrusive source sampling in the 100-DR-1 Operable Unit. This schedule is subject to change and the operable unit coordinator should be contacted for current status. An agreement activity notification form will be issued at least 5 d before start of field work.

Sample task	Sampling date
108-D Office Building and Equipment Decontamination Station	Middle 2 wk of May
100-DR Septic Tanks	Middle 2 wk of May
1607-D2, D4, and D5 Septic Systems	Middle of September
126-D-1 Ash Disposal Basin	" "
100-D Salt Dissolving Pit	" "
103-D Green Metal Storage Facility	" "

8.0 CHANGES TO DESCRIPTION OF WORK

Major changes to this description of work, such as analyzing different parameters or using different analytical methods, will be submitted on the Source Sampling Project Change Form (Attachment 2). The change will require, at least, the verbal approval of FTL and operable unit coordinator. The change will be filed as an Engineering Change Notice (ECN) and a copy will be inserted into the 100-H and 100-B areas' project file. Copies will be submitted to the appropriate field personnel.

9.0 REFERENCES

DOE-RL, 1991, *RCRA Facility Investigation/Corrective Measure Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington*, DOE/RL-89-09, Draft C, U.S. Department of Energy, Richland Field Office, Richland, Washington.

DOE-RL, 1992, *RCRA Facility Investigation/Corrective Measure Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington*, DOE/RL-89-09, Draft D, U.S. Department of Energy, Richland Field Office, Richland, Washington.

EPA, 1986, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*, SW-846, U.S. Environmental Protection Agency, Washington, D.C.

Guzek, S. J., 1992, *XRF Field Screening Sampling Test Plan for 100-D Salt Dissolving Pit*, WHC-SD-EN-AP-101, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

Taylor, W. E., 1991, *100 Area Low Hazard Characterization Activities Safety Assessment*, WHC-SD-EN-SAD-002, Rev 0, Westinghouse Hanford Company, Richland, Washington.

WHC, 1987, *Industrial Safety Manual*, WHC-CM-4-3, Vol. 1 through 3, Westinghouse Hanford Company, Richland, Washington.

WHC, 1988a, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington,

WHC, 1988b, *Radiation Protection*, WHC-CM-4-10, Westinghouse Hanford Company, Richland, Washington.

WHC, 1988c, *ALARA Program Manual*, WHC-CM-4-11, Westinghouse Hanford Company, Richland, Washington.

WHC, 1988d, *Environmental Compliance Manual*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.

WHC, 1990a, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan*, WHC-EP-0383, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

100-DR-1 NONINTRUSIVE SOURCE SAMPLING STATUS CHECKLIST	
	Signature/Date
LANDLORD CONTACTED FOR ENTRANCE	_____
100 AREA ENVIRONMENTAL PROTECTION NOTIFIED	_____
PREJOB SAFETY MEETING COMPLETED	_____
SAMPLES COLLECTED AND LABELED	_____
SAMPLES SURVEYED BY HPT	_____
SAMPLE PACKAGED IN SHIPPING CONTAINER	_____
TOTAL ACTIVITY SCAN OF SAMPLES COMPLETED	_____
CHAIN OF CUSTODY FORM COMPLETED	_____
SAMPLES SHIPPED TO LABORATORY	_____

9 2 1 2 6 5 8 1 5 3 7

ATTACHMENT 2
100-DR-1 NONINTRUSIVE SOURCE SAMPLING PROJECT CHANGE FORM

Date: _____

Person Initiating Change: _____

Change: _____

_____

_____

_____

_____

_____

_____

Reason for Change: _____

_____

_____

_____

_____

_____

_____

APPROVAL:

Field Team Leader: _____

Operable Unit Coordinator: _____

Environmental QA Representative: _____

Date Received: 8/7/92 DS

INFORMATION RELEASE REQUEST

Reference: WHC-CM-3-4

Complete for all Types of Release

Purpose

[] Speech or Presentation
- [] Full Paper
- [] Summary
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[X] Technical Report
[] Thesis or Dissertation
[] Manual
[] Brochure/Flier
[] Software/Database
[] Controlled Document
[] Other

ID Number (include revision, volume, etc.): WHC-SD-EN-AP-067, Rev. 3

List attachments.: ECN 169787

Date Release Required: August 7, 1992

Title: 100 Area Nonintrusive Source ~~Sampling Description~~ Investigation Activities

Unclassified Category: UC-NA

Impact Level: 3Q

New or novel (patentable) subject matter? [X] No [] Yes
If "Yes", has disclosure been submitted by WHC or other company?
[] No [] Yes Disclosure No(s).

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Group or Society Sponsoring: NA

Date(s) of Conference or Meeting: NA

City/State: NA

Will proceedings be published? [] Yes [] No
Will material be handed out? [] Yes [X] No

Title of Journal: NA

CHECKLIST FOR SIGNATORIES

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Classification/Unclassified Controlled Nuclear Information	[]	[X]			
Patent - General Counsel	[X]	[]	SW BERGLIN	SW Berglin	8/11/92
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Applied Technology/Export Controlled Information or International Program	[]	[X]			
WHC Program/Project	[]	[X]			
Communications	[]	[X]			
RL Program/Project	[]	[X]			
Publication Services	[X]	[]	Leslie Brown	Leslie Brown	8/14/92
Other Program/Project	[]	[X]			

Information conforms to all applicable requirements. The above information is certified to be correct.

	Yes	No
References Available to Intended Audience	[X]	[]
Transmit to DOE-HQ/Office of Scientific and Technical Information	[]	[X]

Author/Requestor (Printed/Signature): M. T. Stankovich — Date: July 30, 1992

Intended Audience: [] Internal [] Sponsor [X] External

Responsible Manager (Printed/Signature): R. P. Henckel — Date: 7/30/92

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP

Stamp is required before release. Release is contingent upon resolution of mandatory comments.

APPROVED FOR RELEASE — OFFICIAL DOCUMENT — DS — 8/14/92

Date Cancelled

Date Disapproved

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BD-7600-062 (08/91) WEF074

Part 1

DISTRIBUTION SHEET

To: R. P. Henckel

From: M. T. Stankovich

Date: July 31, 1992

Project Title/Work Order:

100 Area Nonintrusive Source Sampling Description

EDT No.:

ECN No.: 169787

Name	MSIN	With Attachment	EDT/ECN & Comment	EDT/ECN Only
D. R. Baker	X7-02	X		
G. S. Corrigan	H4-16	X		
K. A. Gano	X0-21	X		
E. D. Goller	A5-19	X		
J. D. Goodenough	A5-19	X		
C. E. Heiden	H4-55	X		
D. O. Hess	L6-57	X		
J. E. Hodgson	X7-02	X		
A. D. Krug	H4-55	X		
R. Mabry	X2-10	X		
N. M. Niaknimbalkar	H4-55	X		
J. F. Renken	X7-02	X		
M. T. Stankovich	H4-55	X		
J. Vaughn	N3-06	X		
EDMC (2)	H4-22	X		
Central Files	L8-04	X		
IRM Clearance	H4-17	X		