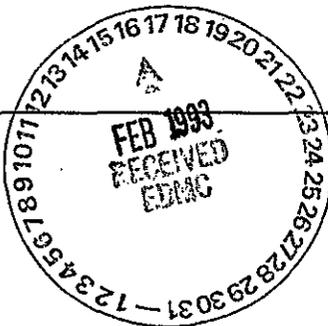


# START

Sta. 21:20  
**FEB 04 1993** ENGINEERING DATA TRANSMITTAL

Page 1 of 1  
 1. EDT 140902

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Environmental Engineering Support, 81340	4. Related EDT No.: NA
5. Proj./Prog./Dept./Div.: 100 Area Treatability Tests	6. Cog. Engr.: J. G. Field	7. Purchase Order No.: NA
8. Originator Remarks: For Approval		9. Equip./Component No.: NA
11. Receiver Remarks:		10. System/Bldg./Facility: NA
		12. Major Assm. Dwg. No.: NA
		13. Permit/Permit Application No.: NA
		14. Required Response Date: 1/14/93



15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-EN-AP-118		0	100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work	3Q	1		

16. KEY		
Impact Level (F)	Reason for Transmittal (G)	Disposition (H) & (I)
1, 2, 3, or 4 (see MRP 5.43)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

(G)		(H)	17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)						(G)	(H)	
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
1	1	Cog. Eng. J. G. Field	<i>J. G. Field</i>	1/13/93	H6-05	EDMC (2)			H6-08		
1	1	Cog. Mgr. J. G. Woolard	<i>J. G. Woolard</i>	1/13/93	H6-05	CENTRAL FILES (2)			18-04		
1	1	QA T. L. Bennington	<i>T. L. Bennington</i>	1/13/93	H4-16						
		Safety									
		Env.									
1	1	S. J. Guzek	<i>S. J. Guzek</i>	1/15/93	H6-04						
1		R. P. Henckel	<i>R. P. Henckel</i>	1-18-93	H6-02						

18. J. G. Field Signature of EDT Originator Date: 1/13/93	19. <i>J. G. Woolard</i> Authorized Representative for Receiving Organization Date: 1/13/93	20. <i>J. G. Woolard</i> Cognizant/Project Engineer's Manager Date: 1/28/93	21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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SUPPORTING DOCUMENT

1. Total Pages 11

2. Title

100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work

3. Number

WHC-SD-EN-AP-118

4. Rev No.

0

5. Key Words

Treatability Test  
CERCLA

6. Author

Name: J. G. Field

*J. G. Field* 1/13/93  
Signature

**APPROVED FOR  
PUBLIC RELEASE**  
1-15-93 *N. Soler*

Organization/Charge Code 81340/P71AA

7. Abstract

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DATE FEB 04 1993  
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9. Impact Level 3Q

4800-6603-116

Control Number <p style="text-align: center;">42</p>	100 NPL Agreement/Change Control Form ___ Change <input checked="" type="checkbox"/> Agreement    ___ Information Operable Unit: <u>Treatability</u> 100-BC-1, 100-DR-1	Date Submitted: 1/15/93 Date Approved:								
Document Number and Title: 100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work, WHC-SD-EN-AP-118, Rev. 0		Date Document Last Issued: To be issued								
Originator: J. G. Field		Phone: 6-3753								
Summary Description:  Signatures are for concurrence with the Description of Work (WHC-SD-EN-AP-118). Concurrence with the description of work constitutes approval to proceed with field sampling as stated in the Description of work, including: excavating a test pit up to 30 ft below grade and backfilling using only soil removed from the pit.										
Justification and Impact of Change:										
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">                     R. E. Day <u>RE Day</u>                      WHC Operable Unit Coordinator                 </td> <td style="width: 50%; border-bottom: 1px solid black;"> <u>1/13/93</u>                      Date                 </td> </tr> <tr> <td style="border-bottom: 1px solid black;">                     E. D. Goller <u>ED Goller</u>                      DOE Unit Manager                 </td> <td style="border-bottom: 1px solid black;"> <u>1/14/93</u>                      Date                 </td> </tr> <tr> <td style="border-bottom: 1px solid black;">                     R. B. Hibbard <u>Jeff Phillips FOR.</u>                      Ecology Unit Manager                 </td> <td style="border-bottom: 1px solid black;"> <u>1/26/93</u>                      Date                 </td> </tr> <tr> <td style="border-bottom: 1px solid black;">                     D. A. Faulk <u>[Signature]</u>                      Env. Protection Agency Unit Manager                 </td> <td style="border-bottom: 1px solid black;"> <u>1-19-93</u>                      Date                 </td> </tr> </table> <p>Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3</p>			R. E. Day <u>RE Day</u> WHC Operable Unit Coordinator	<u>1/13/93</u> Date	E. D. Goller <u>ED Goller</u> DOE Unit Manager	<u>1/14/93</u> Date	R. B. Hibbard <u>Jeff Phillips FOR.</u> Ecology Unit Manager	<u>1/26/93</u> Date	D. A. Faulk <u>[Signature]</u> Env. Protection Agency Unit Manager	<u>1-19-93</u> Date
R. E. Day <u>RE Day</u> WHC Operable Unit Coordinator	<u>1/13/93</u> Date									
E. D. Goller <u>ED Goller</u> DOE Unit Manager	<u>1/14/93</u> Date									
R. B. Hibbard <u>Jeff Phillips FOR.</u> Ecology Unit Manager	<u>1/26/93</u> Date									
D. A. Faulk <u>[Signature]</u> Env. Protection Agency Unit Manager	<u>1-19-93</u> Date									

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## 1.0 SCOPE OF WORK

This description of work details the field activities associated with backhoe excavation and sampling of two test pits: one at the inlet end of the 116-C-1 trench located in the 100-BC-1 Operable Unit; and the other at the inlet end of the 116-D-1B trench in the 100-DR-1 Operable Unit. Work will be performed to obtain soil samples for 100 Area Bench-Scale Treatability Tests, as specified in the *100 Area Soil Washing Treatability Test Plan* (DOE-RL 1992). The description of work will serve as a field guide for those performing the work. It should be used in conjunction with the *Environmental Investigations and Site Characterization Manual* (WHC 1988a) for specific procedures. Test pit locations are shown on Figures 1 and 2.

Neither test pit 116-C-1 nor 116-D-1B are located inside of a surface radiation zone. However, the sites are currently surrounded by permanent concrete monuments and underground contamination warning signs. Low level radioactivity is expected to be encountered at depths of 15 to 30 ft. The maximum depth of test pits will be 30 ft.

As strict compliance with the requirements of Washington Administrative Code (WAC) 173-160, *Dangerous Waste Regulations*, is impractical; therefore, this description of work constitutes a request for variance thereunder. Approval of this description of work, by the Washington Department of Ecology, constitutes approval of the variance. The 5-day notification given to regulatory agencies at Hanford will satisfy the notification requirement of WAC 173-160-(055). No precedent is established by agreeing to include the above references to WAC 173-160.

## 2.0 GENERAL REQUIREMENTS

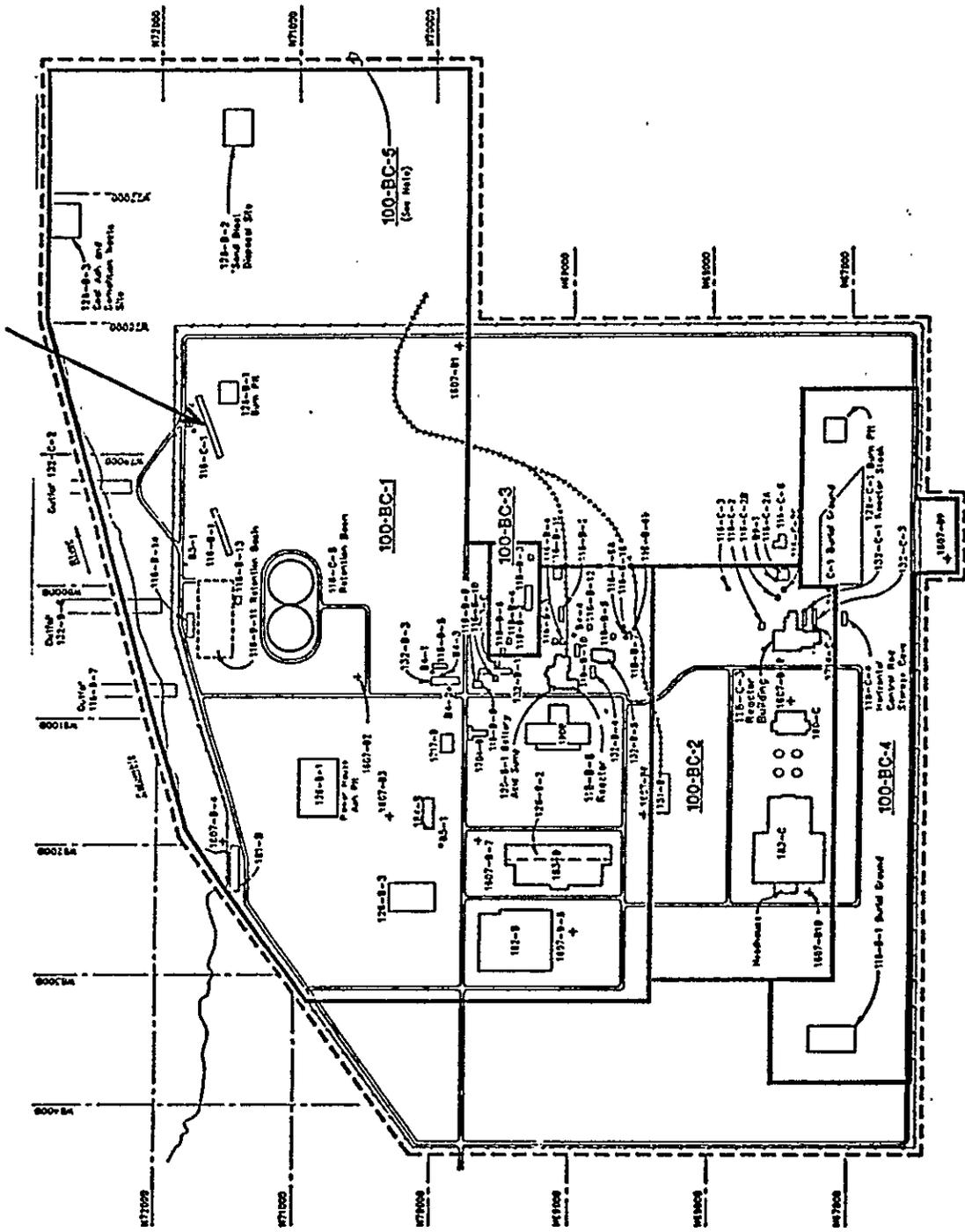
### 2.1 HEALTH AND SAFETY

All personnel working to this description of work will have completed the 40-Hour Hazardous Waste Site Worker Training Program and 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* (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, Rev 0, *100 Area Low Hazard Characterization Activities Safety Assessment* (Taylor 1991)
- Site-specific Hazardous Waste Operations Plan and Radiation Work Permit.



Figure 2. Location of the 116-D-1B Test Pit.



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## 2.2 PREREQUISITES

A Hazardous Waste Operations Plan and Radiation Work Permit are required, and a checklist for tasks requiring no readiness review per Environmental Investigation Instruction (EII) 1.13, Environmental Engineering and Geotechnology Readiness Review (WHC 1988a) will be signed and dated by the cognizant engineer or field team leader (FTL) prior to the start of work.

## 3.0 SAMPLING AND FIELD ACTIVITIES

### 3.1 TEST PIT SOIL SCREENING

Excavated material removed from the test pit will be field screened by the FTL, or designee, for evidence of volatile organics and radionuclides.

Volatile organics are not expected, but will be screened for health and safety reasons. An organic vapor monitor (OVM) will be used, maintained, and calibrated consistent with EII 3.2, Health and Safety Monitoring Instruments, and EII 3.4, Field Screening (WHC 1988a). The action level for the OVM is any reading above background for 1 minute in the breathing zone. If this is encountered personnel will stop work and move upwind of the soils. The Site Safety Officer will attempt to identify compounds and determine what upgrades in personal protective equipment (PPE) are necessary, if any.

Radionuclides will be screened per EII 3.4, Field Screening (WHC 1988a) to determine the highest level of radioactivity for sampling. Field screening results will be recorded in the field logbook per EII 1.5, Field Logbook (WHC 1988a). Radionuclides will be monitored at 5 ft intervals to 15 ft and thereafter about one-half bucket of soil will be removed at a time. Each one-half bucket will be screened for radioactivity levels. The safety level for radionuclides will be as specified in the radiation work permit (RWP) and as determined by the health physics technician (HPT) responsible.

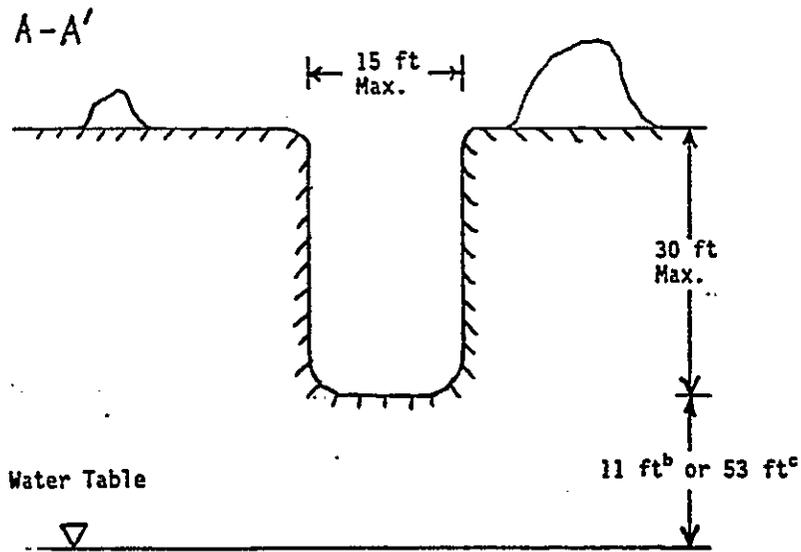
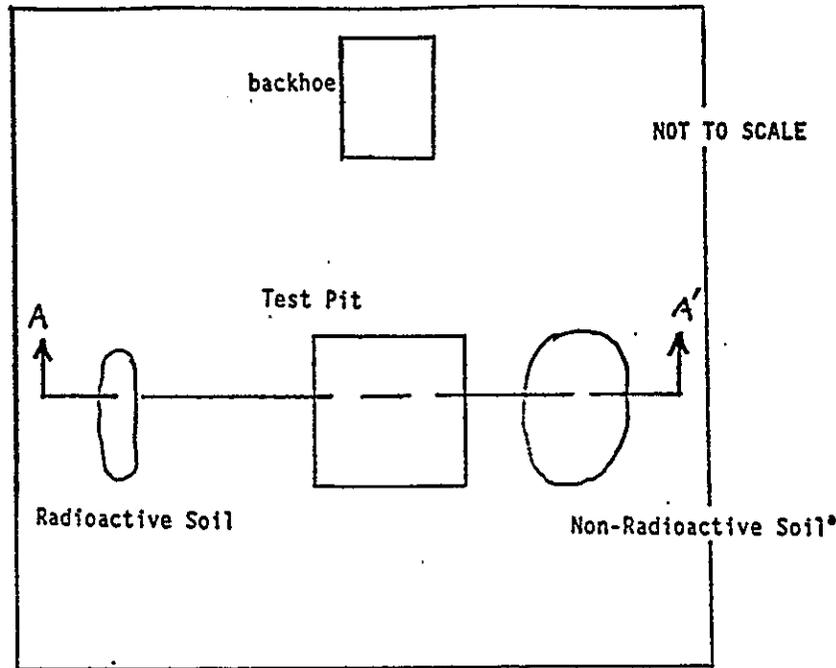
### 3.2 TEST PIT EXCAVATION

Test pit soils will be sandy gravel with cobble material. Test pit dimensions will be about 15 by 15 ft and no deeper than 30 ft below grade. A schematic of a test pit is shown in Figure 3.

The highest levels of radioactivity are expected to be encountered between 15 and 20 ft. The static groundwater levels for the 116-C-1 trench and 116-D-1B trench are reported at 41 and 83 ft, respectively ((WIDS 1991).

Safety personnel have determined that no engineering design is required for this trench on the basis that no personnel will enter the test pit at any time, and that the backhoe and personnel within the zone will maintain a safe distance away from the test pit as specified in the Hazardous Waste Operation Permit.

Figure 3. Schematic Drawing of the Proposed Excavation.



<sup>a</sup>Radioactivity <100 counts per minute above background.

<sup>b</sup>Depth to water table for 116-C-1 Trench.

<sup>c</sup>Depth to water table for 116-D-1B Trench.

Between depths of 15 to 30 ft, if soil radioactivity exceeds 100 counts per minute above average background levels, the soils will be acceptable for sampling. These soils will be distributed on plastic located at a safe distance from the test pit (as specified in the Hazardous Waste Operations Plan).

All other soils will be placed in a temporary stockpile near the pit. Excavation will be discontinued when the radioactivity level of soils decreases for several bucketloads or at a maximum depth of 30 ft below grade. Radioactive soils (>100 counts per minute above established background levels) will be distributed on plastic and further screened as needed to obtain representative samples for soil washing tests. The pile or piles with the highest level of radioactivity will be collected. Between test pit locations, the excavator bucket will be cleaned of visible dirt.

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.

If soil radioactivity levels >100 counts per minute above background are not found in the test pit, a second test pit will be excavated within the designated waste site at a location to be determined by the project engineer and FTL. If acceptable radioactivity levels are not identified in the second test pit; work at that site will be discontinued, and WHC, DOE, and regulatory agencies will discuss alternate locations for obtaining samples.

### 3.3 TEST PIT GEOLOGIC SAMPLING

No geologic sampling will occur at the test pit.

### 3.4 TEST PIT SOIL SAMPLING

About 55 gal of soil from each test pit will be placed in 5-gal containers. These samples will be collected using hand tools and standard soil sampling techniques per EII 5.2, Soil and Sediment Sampling (WHC 1988a). Soil containers will be transported to PNL for testing and analyses in accordance with the *100 Area Treatability Soil Washing Test Plan* (DOE-RL 1992) and the *100 Area Soil Washing Bench-Scale Test Procedures* (WHC 1992).

Sample depths will be estimated using measured dimensions of the backhoe bucket and arm. Measurements may be marked on the bucket using soapstone or other noncontaminating marker. If a more precise method of measuring sample depths is used, it will be identified in the field logbook.

### 3.5 ABANDONING THE TEST PIT

After all samples have been collected at a particular location or if acceptable radioactive soils are not identified within a depth of 30 ft, the excavated pit will be backfilled in approximately the reverse order, so that the first bucketful excavated is the last bucketful backfilled. Care will be taken to protect groundwater by backfilling the test pit the same day it is excavated, and by compacting backfill soil using the backhoe bucket.

Sample custody will follow the procedures as specified in EII 5.1, Chain of Custody (WHC 1988a).

All waste generated as a result of test pit investigation activities and all soil sampled and tested in the laboratory will be handled as stated in EII 4.3, Control of CERCLA and other Past-Practice Investigation Derived Waste (WHC 1988a).

#### 4.0 SCHEDULE

Excavation in the 100-BC-1 Operable unit is scheduled to begin on January 19, 1993. This is expected to be completed within 1 day. Excavation in 100-DR-1 will then take place on January 29, 1993.

This schedule is subject to change and the DOE-RL Operable Unit Manager will be contacted for current status. An Agreement Activity Notification form will be issued at least 5 days prior to the start of field work.

#### 5.0 CHANGES TO DESCRIPTION OF WORK

Changes to this description of work will be submitted on an Engineering Change Notice. Copies will be submitted to the lead regulatory agency and appropriate field personnel. Any significant changes to this description of work will require approval from regulatory agencies.

#### 6.0 REFERENCES

- DOE-RL, 1992, *100 Area Soil Washing Treatability Test Plan*, DOE/RL-92-51, Draft A, U. S. Department of Energy, Richland Field Office, Richland, Washington.
- Taylor, 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, 3 Vols., 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*, WHC-CM-4-11, Westinghouse Hanford Company, Richland, Washington.

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

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

WHC, 1992, *100 Area Soil Washing Bench-Scale Test Procedures*, WHC-SD-EN-TI-087, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

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# INFORMATION RELEASE REQUEST

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WHC-CM-3-4

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Title <b>100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work.</b>	Unclassified Category <b>UC-</b>	Impact Level <b>30</b>
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New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input type="checkbox"/> No <input type="checkbox"/> Yes (Disclose No(s)).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
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Will material be handed out?	<input type="checkbox"/> Yes <input type="checkbox"/> No

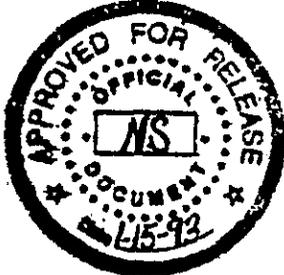
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			Name (printed) Signature Date
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<b>J. G. Woolard</b> <i>J. G. Woolard</i>	<b>1/13/93</b>

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