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18. J.G. Lucas <i>J.G. Lucas</i> Signature of EDT Originator	19. _____ Authorized Representative for Receiving Organization	20. R.C. Roos <i>R.C. Roos</i> Cognizant/Project Engineer's Manager	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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Date Received: 4/28/94

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Reference: WHC-CM-3-4

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List attachments.				
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Title: Sampling and Analysis Plan for RCRA Closure Activities at 218-E-8 Borrow Pit Demolition Site	Unclassified Category UC-	Impact Level ES0
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Author/Requestor (Printed/Signature) J. G. Lucas <i>J.G. Lucas</i>	Date 4-26-94

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SUPPORTING DOCUMENT

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7. Abstract

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9413296-0180

1.0 PURPOSE

This document provides guidance for sampling and analysis activities associated with the proposed *Resource Conservation and Recovery Act of 1976* (RCRA) clean closure of the 218-E-8 Borrow Pit Demolition Site (Figure 1). This document is a supplement to *218-E-8 Borrow Pit Demolition Site Closure Plan* (DOE-RL 1992), and should be used in conjunction with the *Environmental Investigations and Site Characterization Manual* (WHC 1988) for specific procedures.

A metric conversion chart (Attachment 1) is provided to the reader as a tool to aid in conversion.

2.0 OBJECTIVE

Eight soil samples will be taken from specific locations (Figure 2) within a 5.5-ft-radius centered around the blasting pit. The objective of the work is to facilitate a RCRA clean closure of the site by verifying that the concentrations of all detonation activity contaminants are below action levels. Action levels are defined as levels above the Hanford Site soil background levels identified in *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes* (DOE-RL 1993) and Model Toxic Control Act (MTCA) (WAC 173-340) residential levels. If analysis determines that levels are above both these guidelines, a phase two investigation will be developed. This is not anticipated because of the nature of detonation efficiency and weathering action.

3.0 SITE DESCRIPTION/BACKGROUND

The 218-E-8 Demolition Site is located in the northeast corner of the 200 East Area, with approximate dimensions of 600 ft x 900 ft. The borrow pit was used for demolition activities, asbestos disposal, tumbleweed incineration, and storage of hazardous waste. The demolition site was located apart from these other activities within the borrow pit. None of these other activities are believed to have contaminated the demolition site.

In November 1984, a single demolition occurred at the 218-E-8 Demolition Site. Discarded explosive chemicals were placed in a 6- to 12-in. depression dug expressly for demolition purposes. The depression no longer exists, but a 20 ft x 20 ft surface area over the depression location is roped off and marked as a dangerous waste site. The site also is marked by surveyed monuments.

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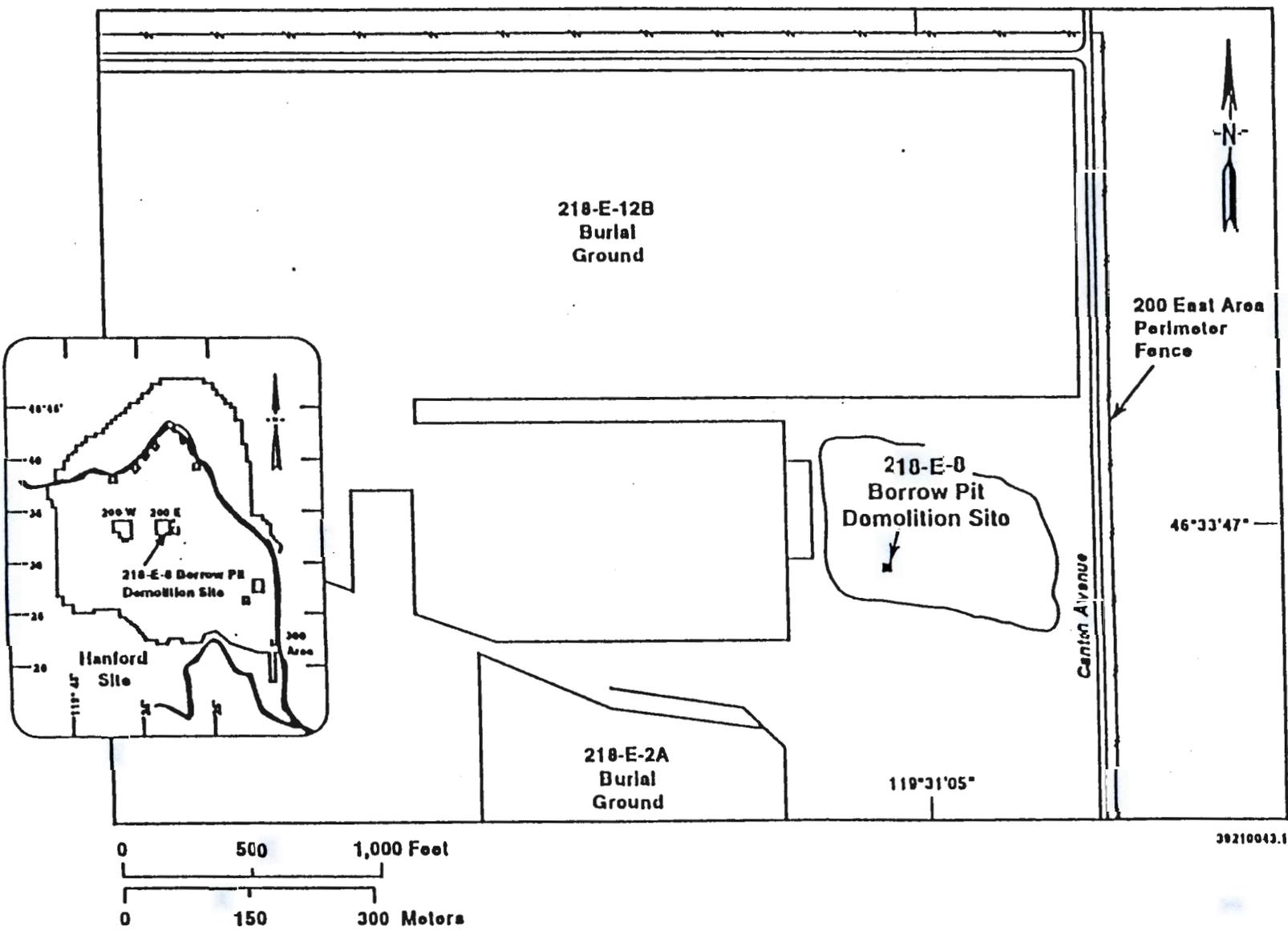
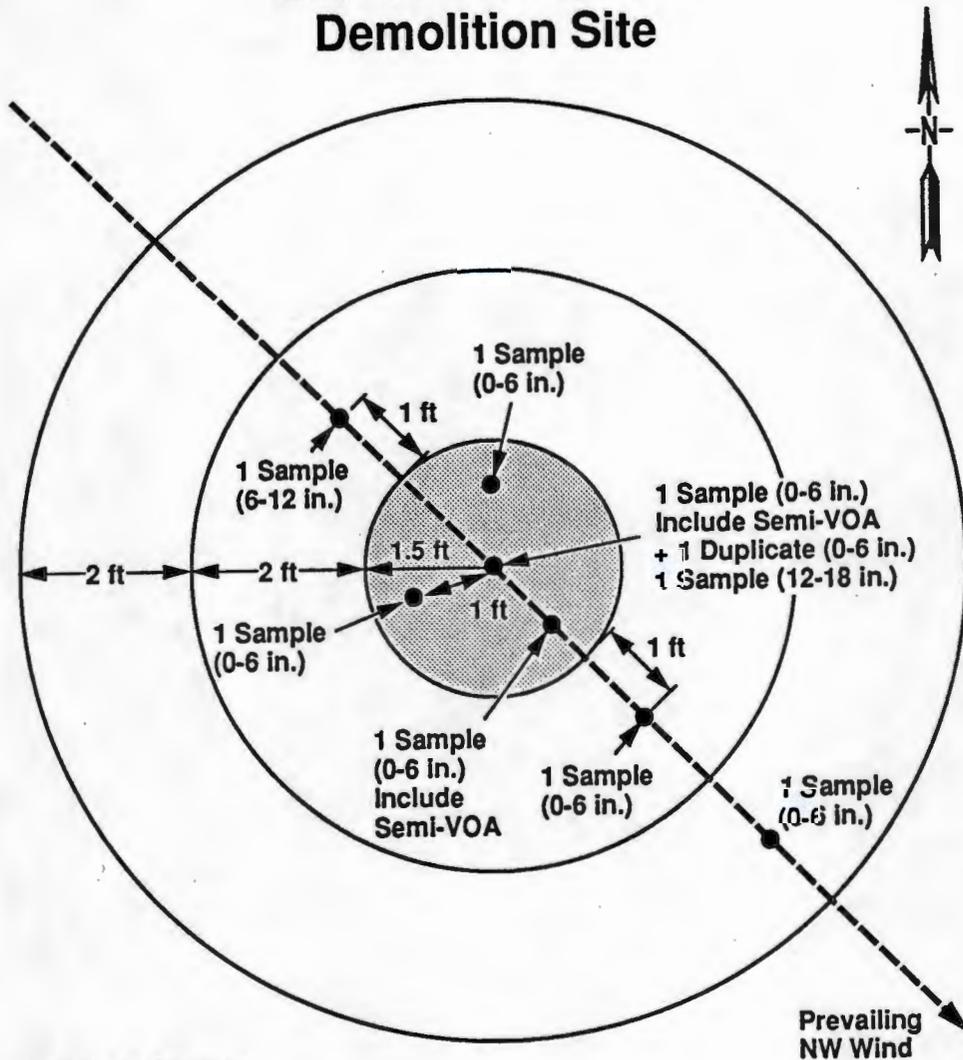


Figure 1. 218-E-8 Borrow Pit Demolition Site.

218 E-8 Borrow Pit Demolition Site



Field QC Samples

- 1 Duplicate (Located at Center 0-6 in.)
- 1 Equipment Blank (Clean Silica Sand)
- 1 Trip Blank (Clean Silica Sand)



Environmental Characterization Samples → 8

H9405002.2

Figure 2. Soil Sampling Locations/Depth.

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4.0 SCOPE OF WORK

Eight soil characterization samples will be taken by hand from locations at the 218-E-8 Demolition Site (Figure 2).

All sampling activities will be conducted in accordance with the following environmental investigations instructions (EII) procedures (WHC 1988):

- EII 1.1, Hazardous Waste Site Entry Requirements
- EII 1.5, Field Logbooks
- EII 1.13, Environmental Readiness Review
- EII 5.1, Chain of Custody
- EII 5.2, Soil and Sediment Sampling
- EII 5.5, 1706 KE Laboratory Decontamination of RCRA/CERCLA Sampling Equipment
- EII 5.10, Obtaining Sample Identification Numbers and Accessing HEIS Data
- EII 5.11, Sample Packaging and Shipping
- EII 14.1, Analytical Laboratory Data Management.

5.0 SAMPLING AND FIELD ACTIVITIES

This section discusses Task 1, Sampling of the 218-E-8 Demolition Site.

5.1 SUBTASK 1A - SAMPLE LOCATION DETERMINATIONS

The blasting pit will be reconstructed by removing wind-blown sand to create a 6-in-deep, 3-ft diameter hole (original diameter 1.5 ft). The pit will be located at the center of the posted dangerous waste site. The eight sampling locations will be appropriately marked (Figure 2) and if necessary, the pit diameter will be enlarged to facilitate sampling. Sample depths within reconstructed crater (Figure 2, shielded area) are based upon reconstructed crater.

5.2 SUBTASK 1B - SAMPLING

Engineering support personnel will use hand tools to obtain soil samples in accordance with information provided in Figure 2. All samples will be packaged, handled, and shipped in accordance with WHC (1988).

6.0 LABORATORY ANALYSIS

Samples collected for chemical analysis will be analyzed utilizing SW-846 methods (EPA 1986) and approved EPA 300 series methods (EPA 1983). The contaminants of concern and the methods used for testing are:

- Volatile organic analysis, method 8240
- Semivolatile organic analysis, method 8270
- Detonation residue, method 8330
- Anions, EPA 300.0
- Total nitrogen, EPA 353.1-2.

7.0 REGULATORY AND HANFORD SITE COMPLIANCE

Field quality control (QC) samples will be collected by the sampling scientist and documented in the sampling logbook in accordance with EII 1.5, "Field Logbooks" (WHC 1988). The following is a list of the field QC samples to be collected:

- One duplicate sample at center of pit (0 to 6 in. depth) for full analysis
- One equipment blank (clean silica sand) for full analysis
- One trip blank (clean silica sand) for VOA analysis only.

9.0 REFERENCES

- DOE-RL, 1992, *218-E-8 Borrow Pit Demolition Site Closure Plan*, DOE/RL-92-53, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 1993, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*, DOE/RL-92-24, Rev. 1, U. S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 1983, *Methods for Chemical Analysis of Water and Waste*, 600/4-79-020, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1986, as amended, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, SW-846, 3rd Edition, U.S. Environmental Protection Agency, Washington, D.C.
- WHC, 1988, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

METRIC CONVERSION CHART

The following conversion chart is provided to the reader as a tool to aid in conversion.

9413296-0186

Into Metric Units			Out of Metric Units		
<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>	<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>
<u>Length</u>			<u>Length</u>		
inches	25.4	millimeters	millimeters	0.039	inches
inches	2.54	centimeters	centimeters	0.394	inches
feet	0.305	meters	meters	3.281	feet
yards	0.914	meters	meters	1.094	yards
miles	1.609	kilometers	kilometers	0.621	miles
<u>Area</u>			<u>Area</u>		
sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles
acres	0.405	hectares	hectares	2.47	acres
<u>Mass (weight)</u>			<u>Mass (weight)</u>		
ounces	28.35	grams	grams	0.035	ounces
pounds	0.454	kilograms	kilograms	2.205	pounds
short ton	0.907	metric ton	metric ton	1.102	short ton
<u>Volume</u>			<u>Volume</u>		
teaspoons	5	milliliters	milliliters	0.033	fluid ounces
tablespoons	15	milliliters	liters	2.1	pints
fluid ounces	30	milliliters	liters	1.057	quarts
cups	0.24	liters	liters	0.264	gallons
pints	0.47	liters	cubic meters	35.315	cubic feet
quarts	0.95	liters	cubic meters	1.308	cubic yards
gallons	3.8	liters			
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
<u>Temperature</u>			<u>Temperature</u>		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit