

**ADDENDUM TO THE
CERTIFICATION DESIGN LETTER
FOR AREA 1, PHASE II,
CERTIFIED FOR REUSE AREAS,
TRAP RANGE, SECTOR 2C, AND SECTOR 3**

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



NOVEMBER 2004

**U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE**

**20710-RP-0014
REVISION 0
ADDENDUM 2**

REVISION SUMMARY

<u>Revision</u>	<u>Date</u>	<u>Description of Revision</u>
Revision 0	2/11/00	Initial controlled issuance.
PCN 1	4/7/00	Revised Figure 1-6 to remove shading within CU boundaries for S2-OS-01 and S2-LL-02.
PCN 2	6/2/00	Revised the Executive Summary, Sections 1, 3, 4, and 5 and added Figures 1-7 and 1-8 to include additional information regarding re-certification of portions of CUs A1P2-S1TR-01 and A1P2-S1TR-03 for lead and arsenic as a separate CU.
Addendum 1	12/14/01	Created to include coverage of the Equipment Wash Facility, associated drain lines, and the immediate surrounding area.
Addendum 2	11/8/04	Created to include coverage of the Debris Haul Road, which is the area located north of the Equipment Wash Facility.

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TABLE OF CONTENTS

Executive Summary ES-1

1.0 Introduction 1-1

 1.1 Objectives 1-1

 1.2 Scope and Area Description 1-1

2.0 Historical Data 2-1

 2.1 Historical Data 2-1

 2.2 Precertification Real-Time Scan Data 2-1

3.0 Area-Specific Constituents of Concern 3-1

4.0 Certification Approach 4-1

 4.1 Certification Design 4-1

 4.2 Sampling 4-1

 4.3 Analytical Methodology and Statistical Analysis 4-1

5.0 Schedule 5-1

References R-1

APPENDICES

Appendix A Precertification Real-Time Scan Maps and Data

LIST OF TABLES

Table 3-1 ASCOC List for the Debris Haul Road CU

LIST OF FIGURES

Figure 1-1 Former Debris Haul Road Location

Figure 4-1 A1PII-DHR CU Boundary and Certification Sample Locations

LIST OF ACRONYMS AND ABBREVIATIONS

A1PII	Area 1, Phase II
ASCOC	area-specific constituent of concern
ASL	analytical support level
CDL	Certification Design Letter
COC	constituent of concern
CU	certification unit
DOE	U.S. Department of Energy
EWf	Equipment Wash Facility
FCP	Fernald Closure Project
FRL	final remediation level
mg/kg	milligram per kilogram
OSDF	On-Site Disposal Facility
pCi/g	picoCuries per gram
PSP	Project Specific Plan
SED	Sitewide Environmental Database
SEP	Sitewide Excavation Plan
V/FCN	Variance/Field Change Notice
WAC	waste acceptance criteria

EXECUTIVE SUMMARY

This addendum to the Certification Design Letter (CDL) for Area 1, Phase II Certified Areas for Reuse, Trap Range, Sector 2C and Sector 3 presents the certification approach to the Debris Haul Road, which is the non-certified area located north of the former On-Site Disposal Facility (OSDF) Equipment Wash Facility (EWF). The CDL addendum includes the following information:

- A definition of the boundary of the area to be certified under this addendum
- The area-specific constituents of concern (ASCOCs) pertinent to this area
- A presentation of the certification unit (CU) boundary and proposed sampling strategy
- The analytical requirements and the statistical methodology that will be employed
- The proposed schedule for certification activities.

The scope of this CDL addendum is limited to the Debris Haul Road, located north of the former OSDF EWF. The certification design presented in this CDL addendum follows the general approach outlined in Section 3.4 of the Sitewide Excavation Plan (SEP, DOE 1998). The selection process for the ASCOCs was accomplished using constituent of concern lists in the Operable Unit 5 Record of Decision (DOE 1996), predesign investigation data, and process knowledge. The area to be certified is comprised of one Group 1 CU and the ASCOCs are: total uranium, thorium-228, thorium-232, radium-228, radium-226, arsenic, lead and beryllium. The Debris Haul Road is no longer in use and has been removed. Certification of this area is needed to complete the cap on Cell 4 of the OSDF.

1.0 INTRODUCTION

This addendum to the Certification Design Letter (CDL) for Area 1, Phase II (A1PII) Certified Areas for Reuse, Trap Range, Sector 2C and Sector 3 presents the certification approach for the Debris Haul Road that was located just north of the former On-Site Disposal Facility (OSDF) Equipment Wash Facility (EWF). This area is shown on Figure 1-1. The document describes the certification approach for demonstrating that soils associated with the Debris Haul Road certification unit (CU) meets the final remediation levels (FRLs) for all applicable area-specific constituents of concern (ASCOCs). Refer to the main document for a discussion of those A1PII CUs that have previously been addressed (DOE 2000).

1.1 OBJECTIVES

The primary objectives of this CDL addendum are as follows:

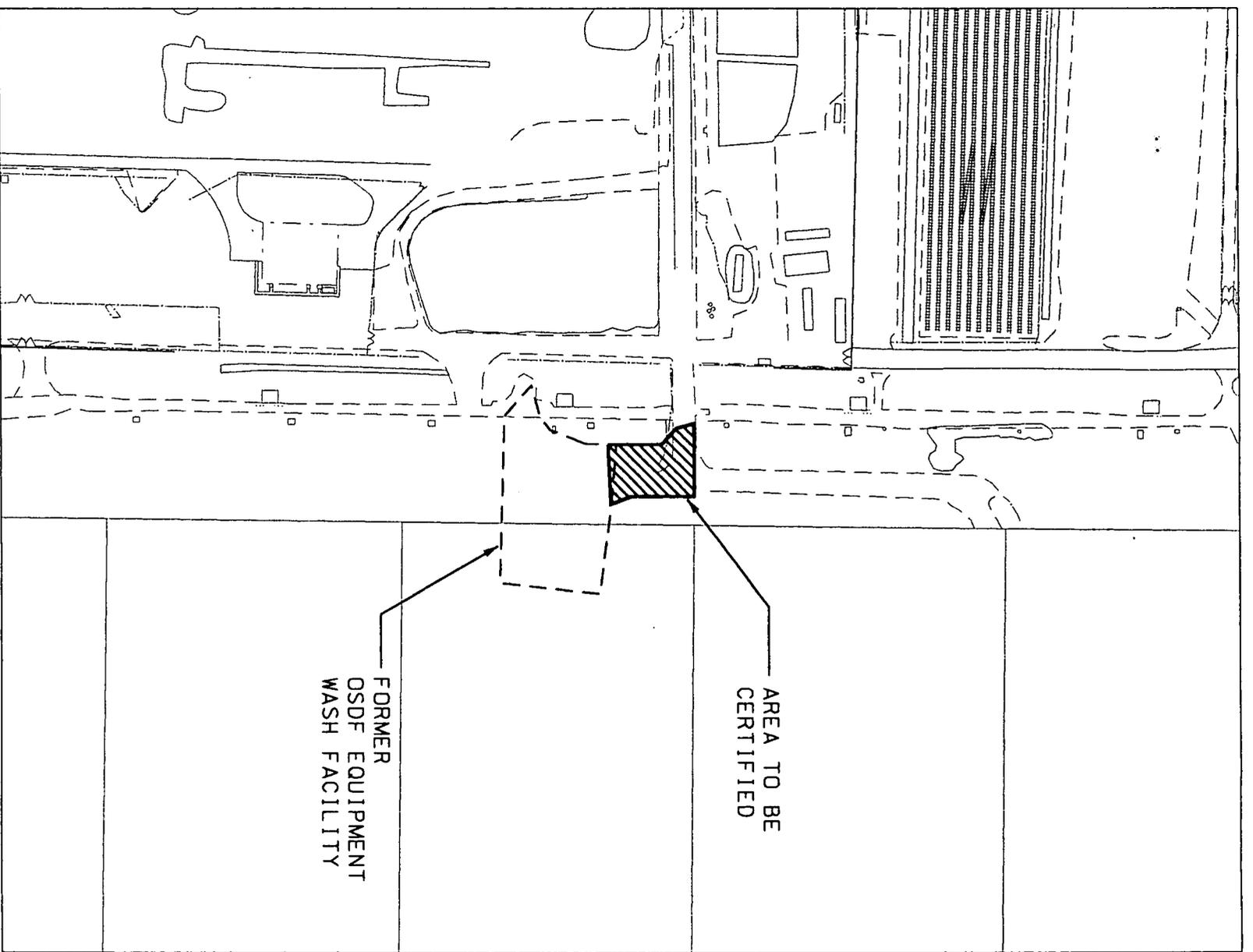
- Define the boundary of the area to be certified under this addendum
- List the selected ASCOCs pertinent to the area
- Present the CU boundary and proposed sampling strategy
- Summarize the analytical requirements and the statistical methodology that will be employed
- Present the proposed schedule for the certification activities.

1.2 SCOPE AND AREA DESCRIPTION

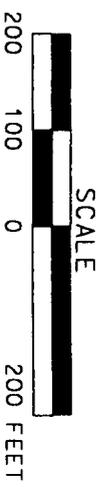
This CDL addendum documents the certification design and sampling for the Debris Haul Road that was located north of the former OSDF EWF. Certification of this area is necessary prior to construction of the OSDF Cell 4 cap.

The Debris Haul Road was used to support placement activities in the OSDF. Certification of this area is being included in the scope of A1PII due to its proximity to the former OSDF EWF, which was certified under A1PII.

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FIGURE 1-1. FORMER DEBRIS HAUL ROAD LOCATION

2.0 HISTORICAL DATA

A detailed discussion of the historical data for Sectors 2 and 3 is provided in the main CDL; this addendum is limited to the Debris Haul Road. A review of the Sitewide Environmental Database (SED) for data from the area to be certified was completed.

Based on the results of the sampling and scanning activities summarized in Sections 2.1 and 2.2, it has been determined that no further remedial actions are necessary to remove above-FRL or above-waste acceptance criteria (WAC) soil prior to certification.

2.1 HISTORICAL DATA

A review of the SED indicated that physical samples have not previously been collected from the area to be certified. The entire area surrounding the Debris Haul Road CU has been certified.

Based on historical (1997) data indicating above-FRL constituents in the former OSDF EWF footprint, lead and arsenic will be retained as constituents of concern (COCs_ for this CU. Historical data for a CU adjacent to the former OSDF EWF, collected in 1997, indicated above-FRL concentrations of beryllium, so it will also be retained as a COC.

2.2 PRECERTIFICATION REAL-TIME SCAN DATA

According to guidelines established in Section 3.3.3 of the SEP, precertification activities were conducted to evaluate residual radiological contamination patterns. Phase 1 and Phase 2 real-time scans were conducted in November 2004. For the precertification real-time data collected, results showed all total uranium, radium-226, and thorium-232 were below the target levels [three times (3x) FRL for total uranium and thorium-232; 7x FRL for radium-226]. These mapped results are provided in Appendix A.

3.0 AREA-SPECIFIC CONSTITUENTS OF CONCERN

The ASCOC selection process is discussed in the main CDL. Secondary constituents of concern that were retained for the former OSDF EWF will also be retained for the Debris Haul Road CU. For ease of reference, the list of ASCOCs for the Debris Haul Road CU is provided below.

**TABLE 3-1
 ASCOC LIST FOR THE DEBRIS HAUL ROAD CU**

ASCOC	FRL	Reason Retained
Total Uranium	82 mg/kg	Retained as primary ASCOC
Thorium-228	1.7 pCi/g	Retained as primary ASCOC
Thorium-232	1.5 pCi/g	Retained as primary ASCOC
Radium-228	1.8 pCi/g	Retained as primary ASCOC
Radium-226	1.7 pCi/g	Retained as primary ASCOC
Arsenic	12 mg/kg	Retained as secondary ASCOC
Lead	400 mg/kg	Retained as secondary ASCOC
Beryllium	1.5 mg/kg	Retained as secondary ASCOC

mg/kg - milligram per kilogram
 pCi/g - picoCuries per gram

4.0 CERTIFICATION APPROACH

4.1 CERTIFICATION DESIGN

The certification design for CU A1P2-DHR follows the general approach outlined in Section 3.4 of the SEP. CU A1P2-DHR is a group 1 CU that is being certified for construction of the OSDF Cell 4 cap. The CU design and the sample locations are shown on Figure 4-1.

4.2 SAMPLING

As discussed in the Project Specific Plan (PSP) for Certification Sampling of A1PII Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 (DOE 1999), sample locations were generated by dividing each CU into 16 approximately equal sub-CUs, then randomly selecting northing and easting coordinates within each sub-CU boundary. Samples will be collected from all 16 locations but samples collected from the four sub-CUs designated as archive locations will not be submitted for sample analysis. The samples will be collected from the top 0 to 0.5-foot interval of soil.

4.3 ANALYTICAL METHODOLOGY AND STATISTICAL ANALYSIS

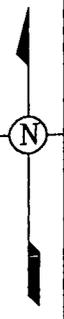
The analytical methodology and statistical approach are provided in Section 4.3 of the main CDL. Sample containers and preservation are described in Variance/Field Change Notice (V/FCN) 20710-PSP-0009-26. Analysis and data validation is at Analytical Support Level (ASL) D as described in Section 4 of the PSP.

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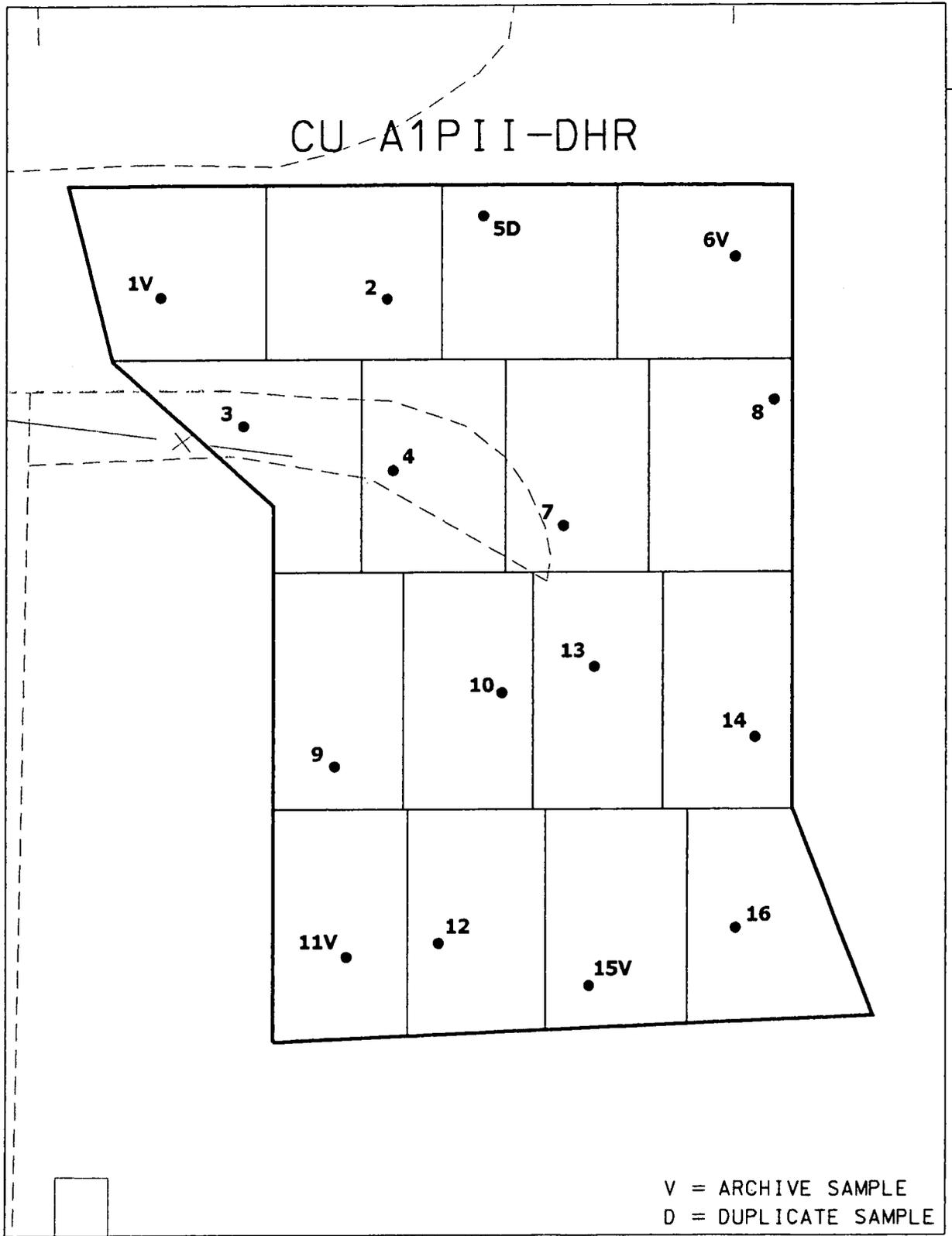
11-V:\22\m1\2\adg\pdr\001_ex.dwg.dgn

STATE PLANNING COORDINATE SYSTEM 1983

12-NOV-2004

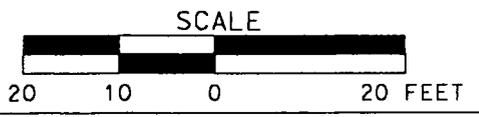


CU A1P I I - DHR



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● SAMPLE LOCATION



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FIGURE 4-1. A1PII-DHR CU BOUNDARY AND CERTIFICATION SAMPLE LOCATIONS

5.0 SCHEDULE

The following draft schedule shows key activities for the completion of the work within A1PII.

<u>ACTIVITY</u>	<u>TARGET DATE</u>
Submit CDL Addendum	November 15, 2004
Start of Field Work	November 12, 2004
Complete Field Work	November 12, 2004
Complete Analytical Work	December 16, 2004
Complete Data Validation and Statistical Analysis	December 29, 2004
Submit Certification Report addendum	January 7, 2005

REFERENCES

U.S. Department of Energy, 1996, "Record of Decision for Remedial Actions at Operable Unit 5," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH.

U.S. Department of Energy, 1998, "Sitewide Excavation Plan," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH.

U.S. Department of Energy, 1999, "Project Specific Plan for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3," Revision 1, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2000, "Certification Design Letter for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C and Sector 3," Revision 0, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH.

APPENDIX A

PRECERTIFICATION REAL-TIME SCAN MAPS AND DATA

A1P2, Phase 1 Scan at the Debris Haul Road

Total Gross Counts per second
Field of View to Scale
NaI Batch: RSS3 0583
Measurement Date: 11/11/04



482000

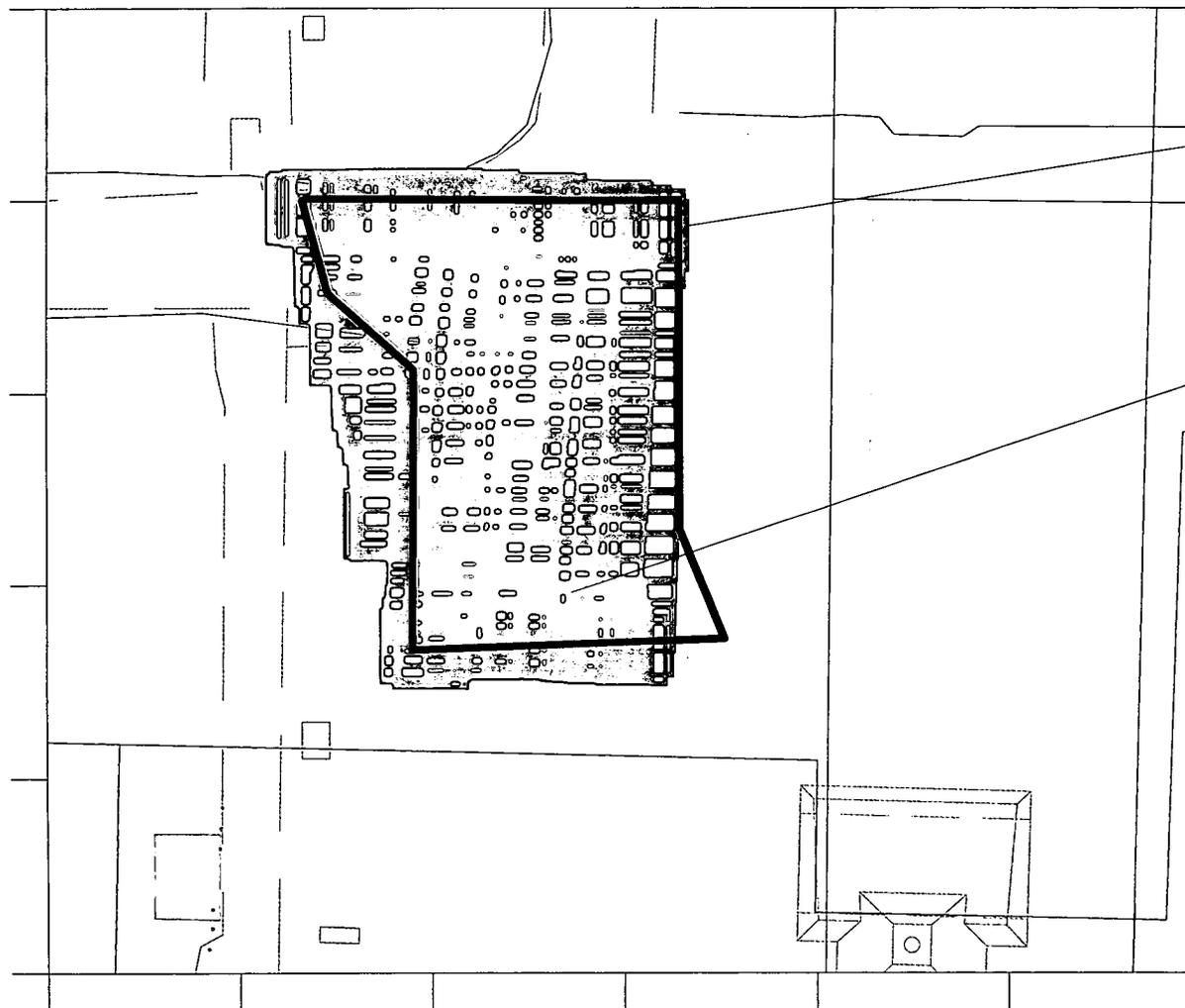
481950

481900

481850

481800

481750



CU Boundary

Highest NaI Value:
11393 CPS

Total Counts
0 to 3000
3000 to 5000
5000 to 15000
15000 to 18000
18000 to 99999

1350600

1350700

1350800

1350900

RTIMP DWG Title: A1P2_DHR_P1_TC_11-11-2004.srf
Project Name: Gen Char for Site Soil Remediation
Project #: 20300-PSP-0011
Prepared By: A. Veach
Date Prepared: 11/11/04
Support Data: A1P2-DHR-P1-RSS1-583_11-11-2004_Summary.xls

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A1P2, Phase 1 Scan at the Debris Haul Road

Moisture Corrected Total Uranium
Field of View to Scale
NaI Batch: RSS3 0583
Measurement Date: 11/11/04



482000
481950
481900
481850
481800
481750

1350600

1350700

1350800

1350900

CU Boundary

Highest NaI Value:
<246 ppm

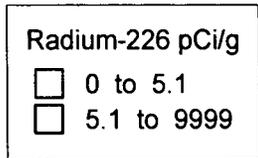
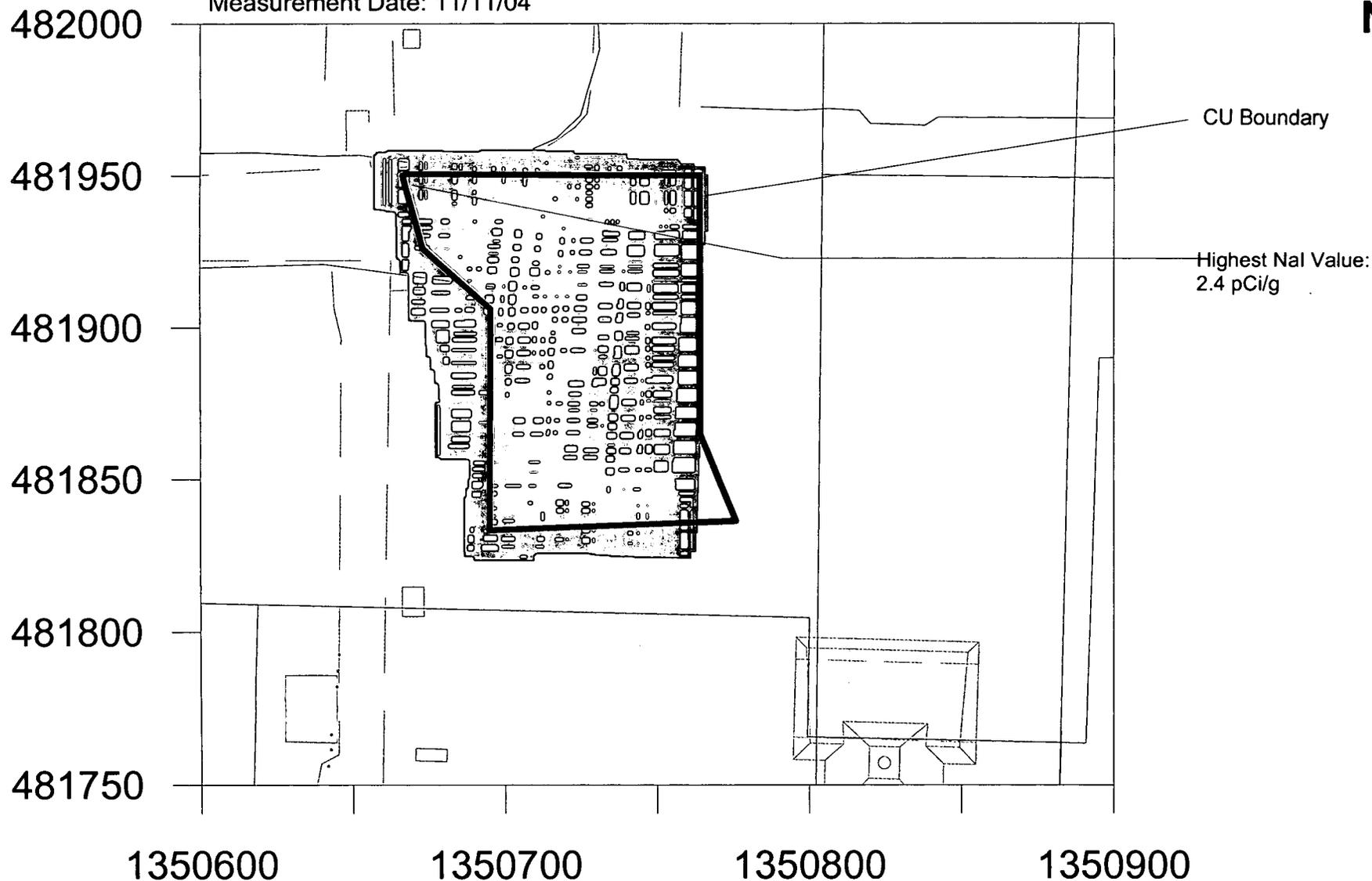
Total U ppm	
□	-194 to 246
□	246 to 875
□	875 to 9999

RTIMP DWG Title: A1P2_DHR_P1_TU_11-11-2004.srf
Project Name: Gen Char for Site Soil Remediation
Project #: 20300-PSP-0011
Prepared By: A. Veach
Date Prepared: 11/11/04
Support Data: A1P2-DHR-P1-RSS1-583 11-11-2004 Summarv.xls

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A1P2, Phase 1 Scan at the Debris Haul Road

Moisture & Lab Corrected Radium-226
Field of View to Scale
NaI Batch: RSS3 0583
Measurement Date: 11/11/04



RTIMP DWG Title: A1P2_DHR_P1_RA_11-11-2004.srf
Project Name: Gen Char for Site Soil Remediation
Project #: 20300-PSP-0011
Prepared By: A. Veach
Date Prepared: 11/11/04
Support Data: A1P2-DHR-P1-RSS1-583 11-11-2004 Summarv.xls

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A1P2, Phase 1 Scan at the Debris Haul Road

Moisture Corrected Thorium-232
Field of View to Scale
Nal Batch: RSS3 0583
Measurement Date: 11/11/04



482000

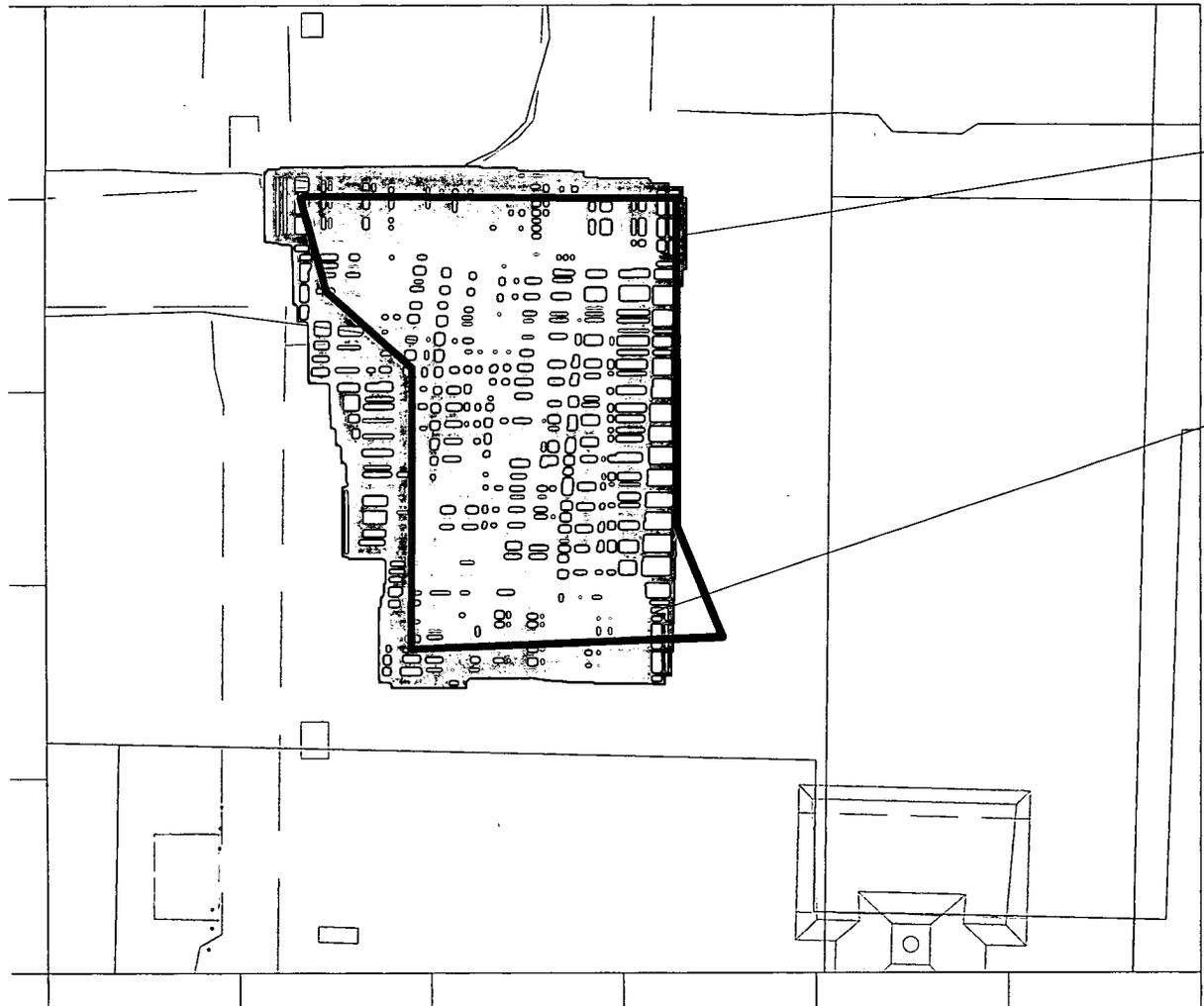
481950

481900

481850

481800

481750



CU Boundary

Highest Nal Value:
<4.5 pCi/g

1350600

1350700

1350800

1350900

Thorium-232 pCi/g

- 0 to 4.5
- 4.5 to 9999

RTIMP DWG Title: A1P2_DHR_P1_TH_11-11-2004.srf

Project Name: Gen Char for Site Soil Remediation

Project #: 20300-PSP-0011

Prepared By: A. Veach

Date Prepared: 11/11/04

Support Data: A1P2-DHR-P1-RSS1-583 11-11-2004 Summarv.xls

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A1P2, Phase 2 Measurements at the Debris Haul Road

Moisture Corrected Total Uranium

Field of View to Scale

HPGe DET #: 31204

Measurement Date: 11/11/04



482000

481950

481900

481850

481800

481750

1350600

1350700

1350800

1350900

Highest HPGe
<246 ppm
at point #1

1

Total Uranium (ppm)

- 0 to 246
- 246 to 928
- 928 to 9999

RTIMP DWG Title: A1P2_DHR_P2_TU_11-11-2004.srf

Project Name: Gen Char for Site Soil Remediation

Project #: 20300-PSP-0011

Prepared By: D.Seiller

Date Prepared: 11/11/04

Support Data: A1P2_DHR_P2_31204_31cm_11-11-2004.xls

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A1P2, Phase 2 Measurements at the Debris Haul Road

Moisture & Lab Corrected Radium-226

Field of View to Scale

HPGe DET #: 31204

Measurement Date: 11/11/04



482000

481950

481900

481850

481800

481750

1350600

1350700

1350800

1350900

Highest HPGe
<5.1 pCi/g
at point #1

1

Radium-226 pCi/g

○ 0 to 5.1

○ 5.1 to 999

RTIMP DWG Title: A1P2_DHR_P2_RA_11-11-2004.srf

Project Name: Gen Char for Site Soil Remediation

Project #: 20300-PSP-0011

Prepared By: D.Seiller

Date Prepared: 11/11/04

Support Data: A1P2_DHR_P2_31204_31cm_11-11-2004.xls

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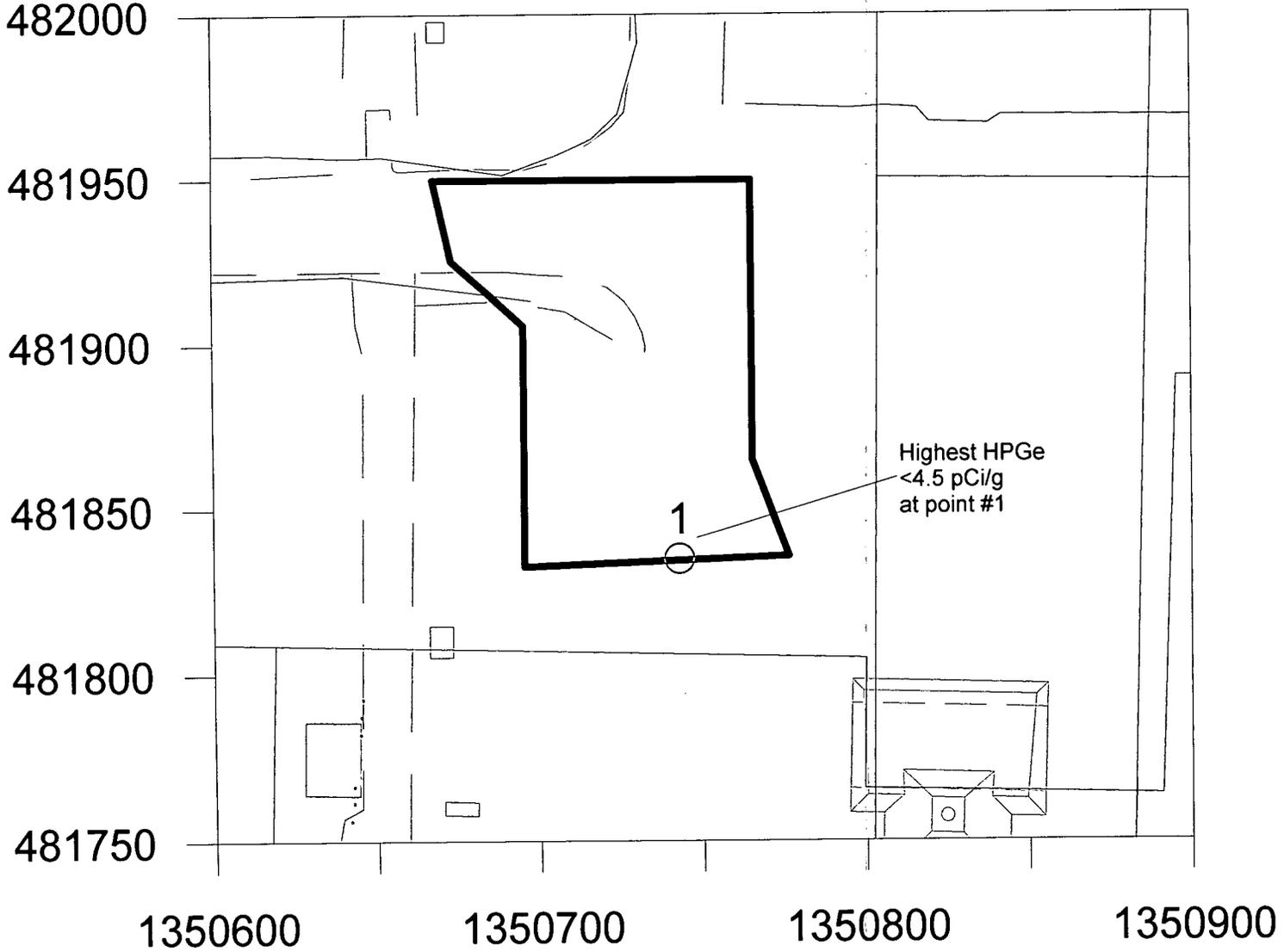
A1P2, Phase 2 Measurements at the Debris Haul Road

Moisture Corrected Thorium-232

Field of View to Scale

HPGe DET #: 31204

Measurement Date: 11/11/04



Thorium-232 pCi/g	
○	0 to 4.5
○	4.5 to 9999

RTIMP DWG Title: A1P2_DHR_P2_TH_11-11-2004.srf
Project Name: Gen Char for Site Soil Remediation
Project #: 20300-PSP-0011
Prepared By: D.Seiller
Date Prepared: 11/11/04
Support Data: A1P2_DHR_P2_31204_31cm_11-11-2004.xls

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