

**Department of Energy**

**Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246**



OCT 26 2006

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V-SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0036-07

Mr. Thomas Schneider, Project Manager
Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

**TRANSMITTAL OF RESPONSES TO OHIO ENVIRONMENTAL PROTECTION
AGENCY COMMENTS AND THE REVISED ADDENDUM 3 TO THE
CERTIFICATION DESIGN LETTER FOR AREA 1, PHASE II CERTIFIED FOR
REUSE AREAS, TRAP RANGE, SECTOR 2C AND SECTOR 3**

- References:
- 1) "Certification Design Letter for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C and Sector 3," Document 20710-RP-0014, dated April 2000
 - 2) Letter DOE-0013-07, J. Reising to J. Saric/T. Schneider, "Transmittal of Addendum 3 to the Certification Design Letter for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C and Sector 3," dated October 17, 2006

Enclosed for your approval are responses to Ohio Environmental Protection Agency comments and the revised Addendum 3 to the Certification Design Letter for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C and Sector 3 for certification of the area surrounding the Dissolved Oxygen Facility and an area where a clay pipe was encountered while excavating/relocating the drainage ditch east of the On-Site Disposal Facility Cell 8. This addendum was revised to include the above-mentioned comment responses.

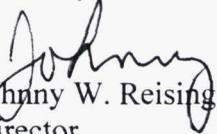
Mr. James Saric
Mr. Thomas Schneider

-2-

DOE-0036-07

If you have any questions or require additional information, please contact me at (513) 648-3139.

Sincerely,


Johnny W. Reising
Director

cc w/enclosure:

J. Desormeau, DOE-OH/FCP
T. Schneider, OEPA-Dayton (three copies of enclosure)
G. Jablonowski, USEPA-V, SRF-5J
M. Cullerton, Tetra Tech
M. Shupe, HSI GeoTrans
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AR Coordinator, Fluor Fernald, Inc./MS6

cc w/o enclosure:

J. Chiou, Fluor Fernald, Inc./MS88
F. Johnston, Fluor Fernald, Inc./MS12
C. Murphy, Fluor Fernald, Inc./MS1
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**RESPONSES TO
OHIO ENVIRONMENTAL PROTECTION AGENCY
COMMENTS ON ADDENDUM 3 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**

OCTOBER 2006

U.S. DEPARTMENT OF ENERGY

**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**



OCTOBER 2006

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

**20710-RP-0014
REVISION 0
ADDENDUM 3, PCN 1**

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. |
| Addendum 3 | 10/11/06 | Created to include coverage of the area surrounding the Dissolved Oxygen Facility, as well as an area where a clay pipe was encountered while excavating/relocating the drainage ditch east of Cell 8. |
| Addendum 3, PCN 1 | 10/25/06 | Revised Addendum 3 to include OEPA comment responses. |

TABLE OF CONTENTS

| | |
|--|------|
| List of Acronyms and Abbreviations | iii |
| List of Tables and Figures..... | ii |
| 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 |

LIST OF APPENDICES

| | |
|------------|---|
| Appendix A | Precertification Real-Time Scan Maps for CU A1P2-DO |
| Appendix B | Real-Time Scan Maps for Clay Pipe Excavation Locations |
| Appendix C | PSP for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011) and Supporting V/FCNs |
| Appendix D | V/FCNs 20710-PSP-0009-27 and 28 |

LIST OF TABLES AND FIGURES

| | |
|-------------|--|
| Table 3-1 | ASCOC List for CUs A1P2-DO AND A1P2-S3DP-02 |
| Figure 1-1 | Location of the Area 1, Phase II Dissolved Oxygen Building Area at the FCP |
| Figure 1-2 | CU A1P2-S3DP-02 Location Map |
| Figure 2-1 | Area 1, Phase II - DO Building Area Historical Boring Location |
| Figure 4-1 | Sample Locations for CU A1P2-DO |
| Figure 4-2 | Sample Locations for CU A1P2-S3DP-02 |
| Figure B-1 | A1P2 Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Total Counts Per Second |
| Figure B-2 | A1P2 Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Moisture Corrected Radium-226 |
| Figure B-3 | A1P2 Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Moisture Corrected Thorium-232 |
| Figure B-4 | A1P2 Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Moisture Corrected Total Uranium |
| Figure B-5 | A1P2 Certification Confirmation - Phase 2 Cell 8 Eastern Drainage Ditch - Moisture Corrected Radium-226 |
| Figure B-6 | A1P2 Certification Confirmation - Phase 2 Cell 8 Eastern Drainage Ditch - Moisture Corrected Thorium-232 |
| Figure B-7 | A1P2 Certification Confirmation - Phase 2 Cell 8 Eastern Drainage Ditch - Moisture Corrected Total Uranium |
| Figure B-8 | A1P2 Special Materials Investigation - Cell 8 Eastern Drainage Ditch - Moisture Corrected Radium-226 |
| Figure B-9 | A1P2 Special Materials Investigation - Cell 8 Eastern Drainage Ditch - Moisture Corrected Thorium-232 |
| Figure B-10 | A1P2 Special Materials Investigation - Cell 8 Eastern Drainage Ditch - Moisture Corrected Total Uranium |

LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|--------|--|
| A1PII | Area 1, Phase II |
| ASCOC | area-specific constituent of concern |
| CDL | Certification Design Letter |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| COC | constituent of concern |
| CU | certification unit |
| DO | Dissolved Oxygen |
| DOE | U.S. Department of Energy |
| 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 |
| RCRA | Resource Conservation and Recovery Act |
| 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 for the area surrounding the Dissolved Oxygen (DO) Building, which is the non-certified area located on the east side the Fernald Closure Project. In addition to the area surrounding the DO Building, two samples have been added to Certification Unit A1P2-S3DP-02 following the removal of clay pipe that was discovered during the excavation/relocation of a drainage ditch located east of On-Site Disposal Facility Cell 8. 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
- 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 DO Building as well as the new samples in CU A1P2-S3DP-02. While the two samples added to CU A1P2-S3DP-02 were collected under variance/field change notices (V/FCNs), the samples collected from the area surrounding the DO Building were completed under the Project Specific Plan (PSP) for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011) (DOE 2005). The Predesign PSP was written to follow the general certification approach outlined in Section 3.4 of the Sitewide Excavation Plan (DOE 1998), including CU size, minimum distance between points, analytical support levels as well as validation of all analytical data.

The selection process for the ASCOCs was accomplished using constituent of concern (COC) lists in the Operable Unit 5 Record of Decision (DOE 1996), process knowledge, and surrounding certification unit ASCOCs. Total uranium, thorium-228, thorium-232, radium-228, radium-226 (the primary radiological COCs) are considered ASCOCs in each CU. Secondary ASCOCs have also been identified for each area.

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 area surrounding the Dissolved Oxygen (DO) Building that is located on the east side of the Fernald Closure Project (FCP). This addendum also includes an area where a clay pipe was encountered while excavating/relocating a drainage ditch east of the On-Site Disposal Facility (OSDF) Cell 8. The document describes the certification approach for demonstrating that soils associated with the area surrounding the DO Building certification unit (CU) as well as the area where the clay pipe was encountered 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;
- Summarize the analytical requirements and the statistical methodology employed; and
- Present the proposed schedule for the certification activities.

1.2 SCOPE AND AREA DESCRIPTION

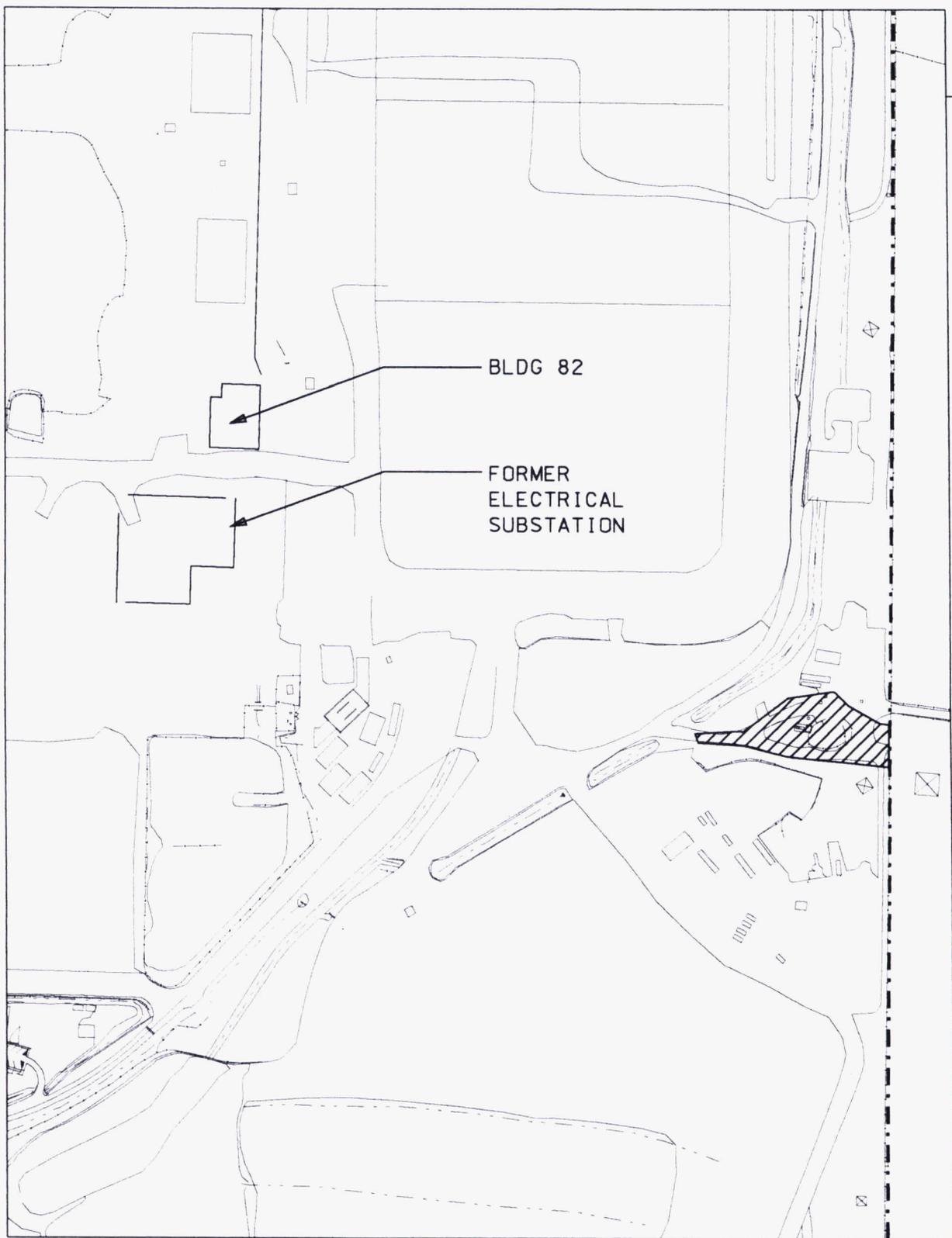
This CDL addendum documents the certification design and sampling for the area surrounding the DO Building. Shown on Figure 1-1, this area is approximately three-quarters of an acre in size and is on the east side of the site. Predesign samples were collected from this area under the Project Specific Plan (PSP) for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011) (DOE 2005). Due to the results of predesign activities, remediation activities are not expected. This area will be referred to as CU A1P2-DO.

Also included in this addendum is the addition of two samples to previously certified CU A1P2-S3DP-02. Within this CU, a piece of clay pipe was encountered during the excavation/relocation of a drainage ditch east of Cell 8. Figure 1-2 shows the location of CU A1P2-S3DP-02.

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STATE PLANNING COORDINATE SYSTEM 1983

12-OCT-2006



LEGEND:

-  A1P11 DO BLDG AREA
-  FCP BOUNDARY

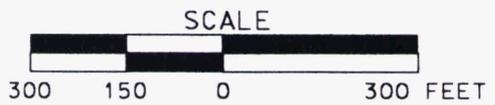
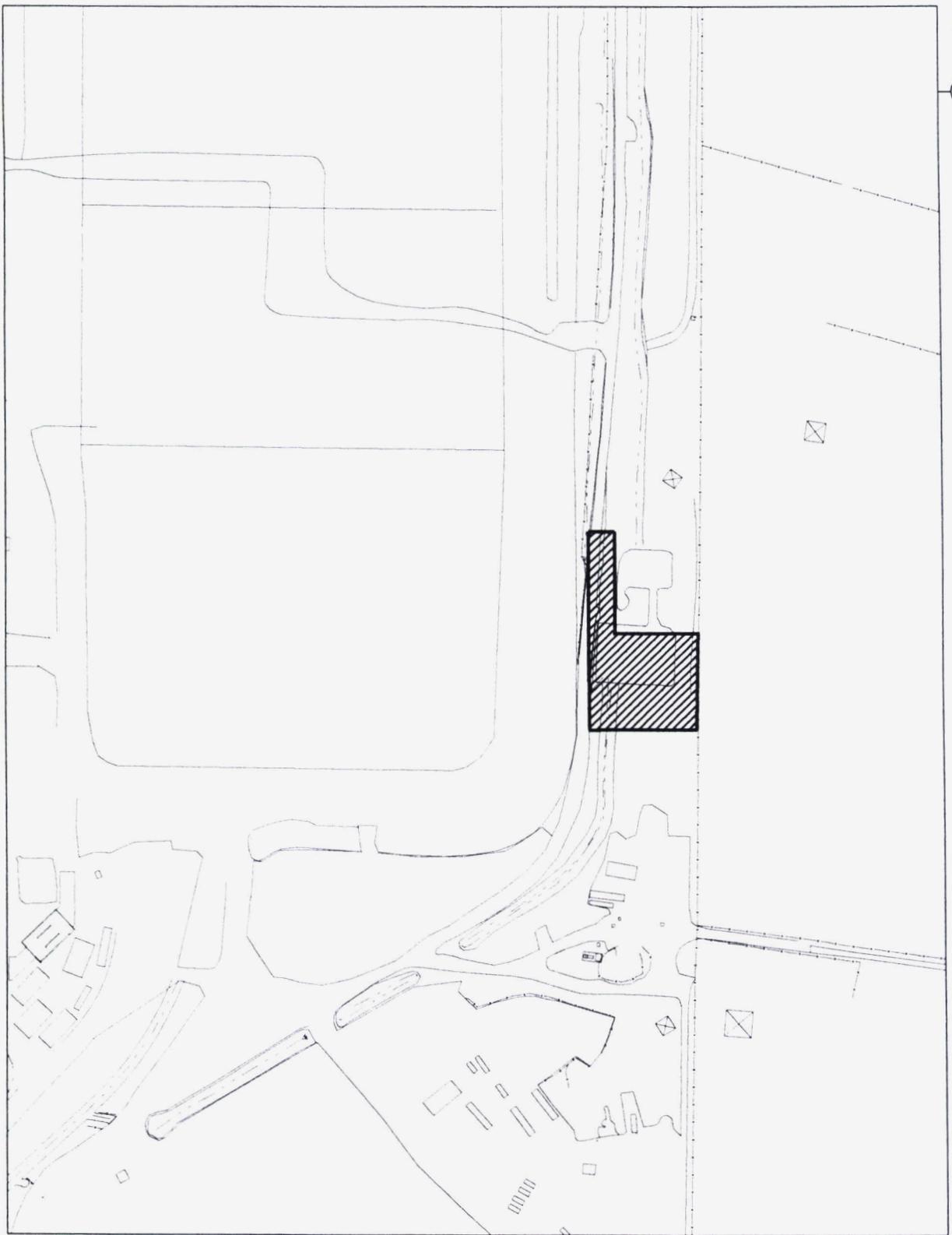


FIGURE 1-1. LOCATION OF THE AREA 1 PHASE II DISSOLVED OXYGEN BUILDING AREA AT THE FCP



LEGEND:



A1P2-S3DP-02

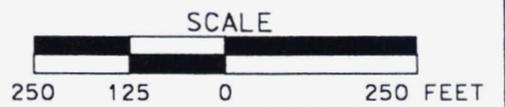


FIGURE 1-2. CU A1P2-S3DP-02 LOCATION MAP

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 area surrounding the DO Building. A review of the Sitewide Environmental Database 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 remedial actions are necessary to remove above-FRL or above-waste acceptance criteria (WAC) soil prior to certification.

2.1 HISTORICAL DATA

One historical above-FRL result was obtained from the area surrounding the DO Building. Boring 12321 had an above-FRL beryllium result of 2.04 milligrams per kilogram (mg/kg) from the 4.5 to 5-foot interval. Figure 2-1 provides this historical above-FRL boring location. This above-FRL beryllium result is consistent with background conditions found in several adjacent areas. This approach is explained in the Addendum to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Resource Conservation and Recovery Act (RCRA) Background Soil Study (DOE 2001) (where results in the 12 to 36-inch interval ranged from below the FRL to 3.05 mg/kg for beryllium). No further investigation beryllium is planned.

2.2 PRECERTIFICATION REAL-TIME SCAN DATA

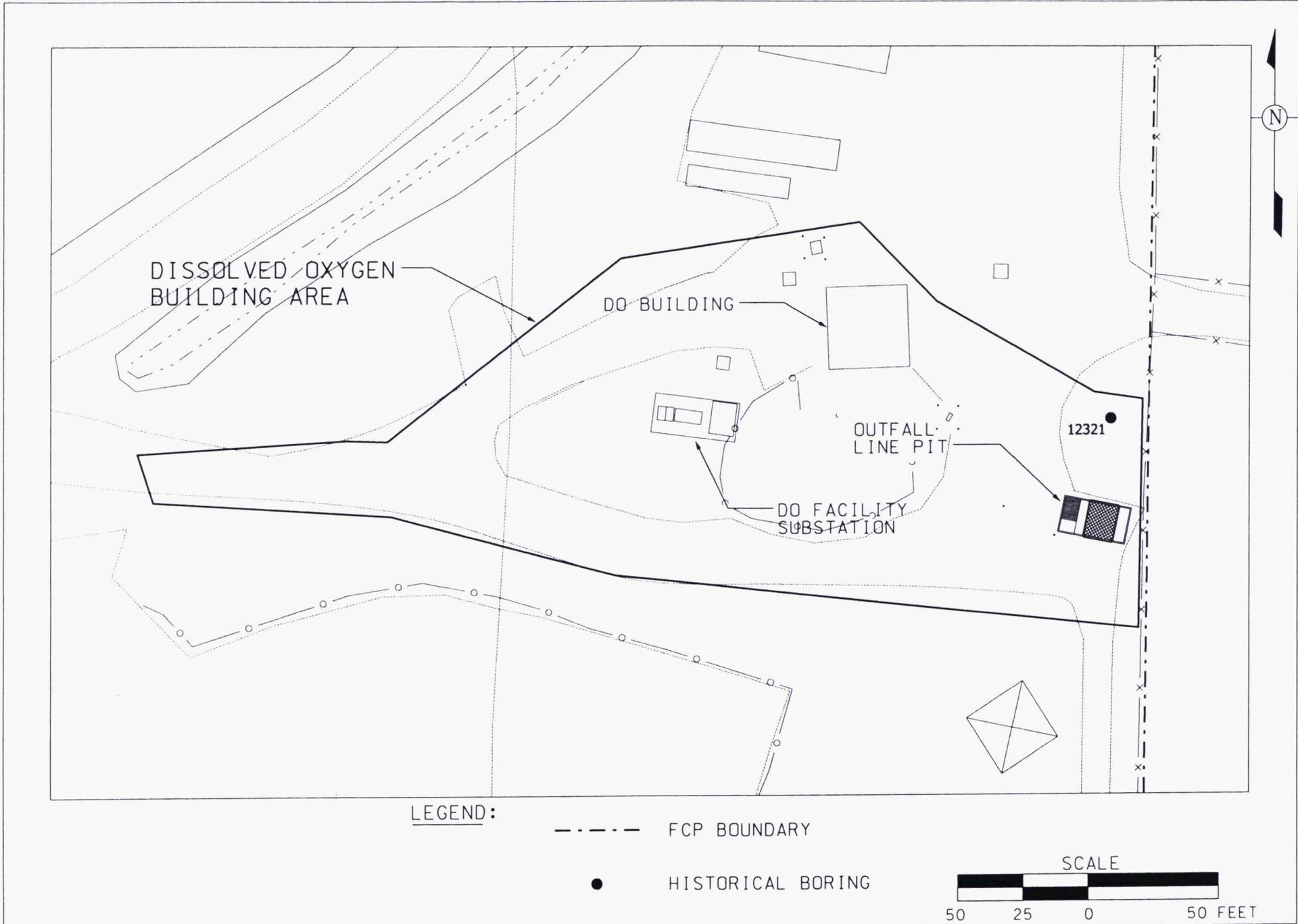
According to guidelines established in Section 3.3.3 of the Sitewide Excavation Plan (SEP, DOE 1998), precertification activities were conducted to evaluate residual radiological contamination patterns. Phase 1 and Phase 2 real-time scans were conducted in June 2005 in the area surrounding the DO Building. For the precertification real-time data collected, results show total uranium, radium-226, and thorium-232 to be below the target levels. The mapped results are provided in Appendix A.

Phase 1 and Phase 2 real-time scans were also completed in the area where clay pipe was discovered during the drainage ditch expansion in May 2006. A Phase 2 real-time scan was completed in July 2006 upon the discovery of a second piece of clay pipe. For the precertification real-time data collected, results are below the target levels, and the mapped results are provided in Appendix B.

The OSDF footprint was a farm field where farmer installed drainage tiles (clay pipes) to improve drainage. Intensive efforts were conducted by DOE to remove all drainage tiles prior to construction of the OSDF liners. However, broken pieces of farmer's tiles have been found in this general area during excavation of the drainage ditch southeast of the OSDF by the old STP footprint. Due to the extensive excavation conducted in this area during both the STP remediation and after all the OSDF related

construction activities, there is unlikely to be any significant amount of drainage tile left in this area, specially west of the drainage ditch.

Because of the close proximity to the old STP footprint, when any significant length of pipe was encountered in this area real time scan was conducted to confirm that the underlying soil was clean. Size of these tiles was usually around 3 inches. The two cases mentioned in this section were about 2 to 3 feet long and did not show elevated activities.



LEGEND:
 - - - - FCP BOUNDARY
 ● HISTORICAL BORING

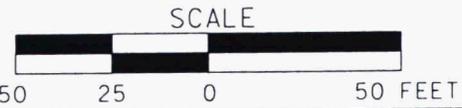


FIGURE 2-1. AREA 1 PHASE II - DO BUILDING AREA,
 HISTORICAL BORING LOCATION

3.0 AREA-SPECIFIC CONSTITUENTS OF CONCERN

The ASCOC selection process is discussed in the main CDL, as well as the Predesign PSP for the DO Building. In addition to retaining the primary radiological constituents of concern (COCs), additional secondary ASCOCs were retained for samples collected from CU A1P2-DO and the additional samples collected in CU A1P2-S3DP-02. For ease of reference, the list of ASCOCs is provided below.

**TABLE 3-1
ASCOC LIST FOR CUs A1P2-DO AND A1P2-S3DP-02**

| ASCOC | FRL | Reason Retained |
|-------------------|------------|---|
| Radium-226 | 1.7 pCi/g | Retained as a primary ASCOC sitewide |
| Radium-228 | 1.8 pCi/g | Retained as a primary ASCOC sitewide |
| Thorium-228 | 1.7 pCi/g | Retained as a primary ASCOC sitewide |
| Thorium-232 | 1.5 pCi/g | Retained as a primary ASCOC sitewide |
| Total Uranium | 82 mg/kg | Retained as a primary ASCOC sitewide |
| Antimony | 96 mg/kg | Remediation Area 1 Ecological ASCOC per SEP |
| Aroclor-1254 | 0.13 mg/kg | Remediation Area 1 Secondary ASCOC per SEP |
| Aroclor-1260 | 0.13 mg/kg | Remediation Area 1 Secondary ASCOC per SEP |
| Arsenic | 12 mg/kg | Remediation Area 1 Secondary ASCOC per SEP |
| Beryllium | 1.5 mg/kg | Remediation Area 1 Secondary ASCOC per SEP |
| Lead | 400 mg/kg | Remediation Area 1 Ecological and Secondary ASCOC per SEP |
| Molybdenum | 2900 mg/kg | Remediation Area 1 Ecological ASCOC per SEP |
| Technetium-99 | 30 pCi/g | Remediation Area 1 Secondary ASCOC per SEP |
| Tetrachloroethene | 3.6 mg/kg | Retained as a secondary ASCOC due to process knowledge (found in Sewage Treatment Plant, which is adjacent to DO Building Area) |

pCi/g - picoCuries per gram

4.0 CERTIFICATION APPROACH

4.1 CERTIFICATION DESIGN

The certification design for CU A1P2-DO follows the general approach outlined in Section 3.4 of the SEP. The CU design and the sample locations for the area CU A1P2-DO are shown on Figure 4-1.

The certification design for CU A1P2-S3DP-02 was completed under the CDL for A1PII Certified Areas for Reuse, Trap Range, Sector 2C and Sector 3.

4.2 SAMPLING

Certification sampling of CU A1P2-DO was completed under the PSP for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011). While the samples were collected under a predesign PSP, the certification unit design followed the general approach outlined in Section 3.4 of the SEP, including CU size, minimum distance between points, analytical support levels as well as validation of all analytical data.

The 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 were collected from 12 locations except the four sub-CUs designated as archive locations will not be submitted for sample analysis. One location also had a field duplicate sample collected. The samples were collected from the top 0 to 0.5-foot interval of soil.

Additional samples were also collected from CU A1P2-DO as a result of utility removal under Variance/Field Change Notice (V/FCN) 20710-PSP-0010-02. These sample locations (designated with a T) are shown on Figure 4-1. The Predesign PSP for the DO Building, as well as any V/FCNs to the PSP, are included in Appendix C.

In CU A1P2-S3DP-02, two additional samples were collected under V/FCNs 20710-PSP-0009-27 and 28 (DOE 1999) due to the discovery of clay pipe in the area. The sample locations (A1P2-S3DP-02-17 and A1P2-S3DP-02-18, respectively) are shown on Figure 4-2, and both V/FCNs are provided in Appendix D.

4.3 ANALYTICAL METHODOLOGY AND STATISTICAL ANALYSIS

Analysis and data validation was completed at Analytical Support Level D as described in Section 4 of the PSP. The analytical methodology and statistical approach are provided in Section 4.3 of the main CDL.

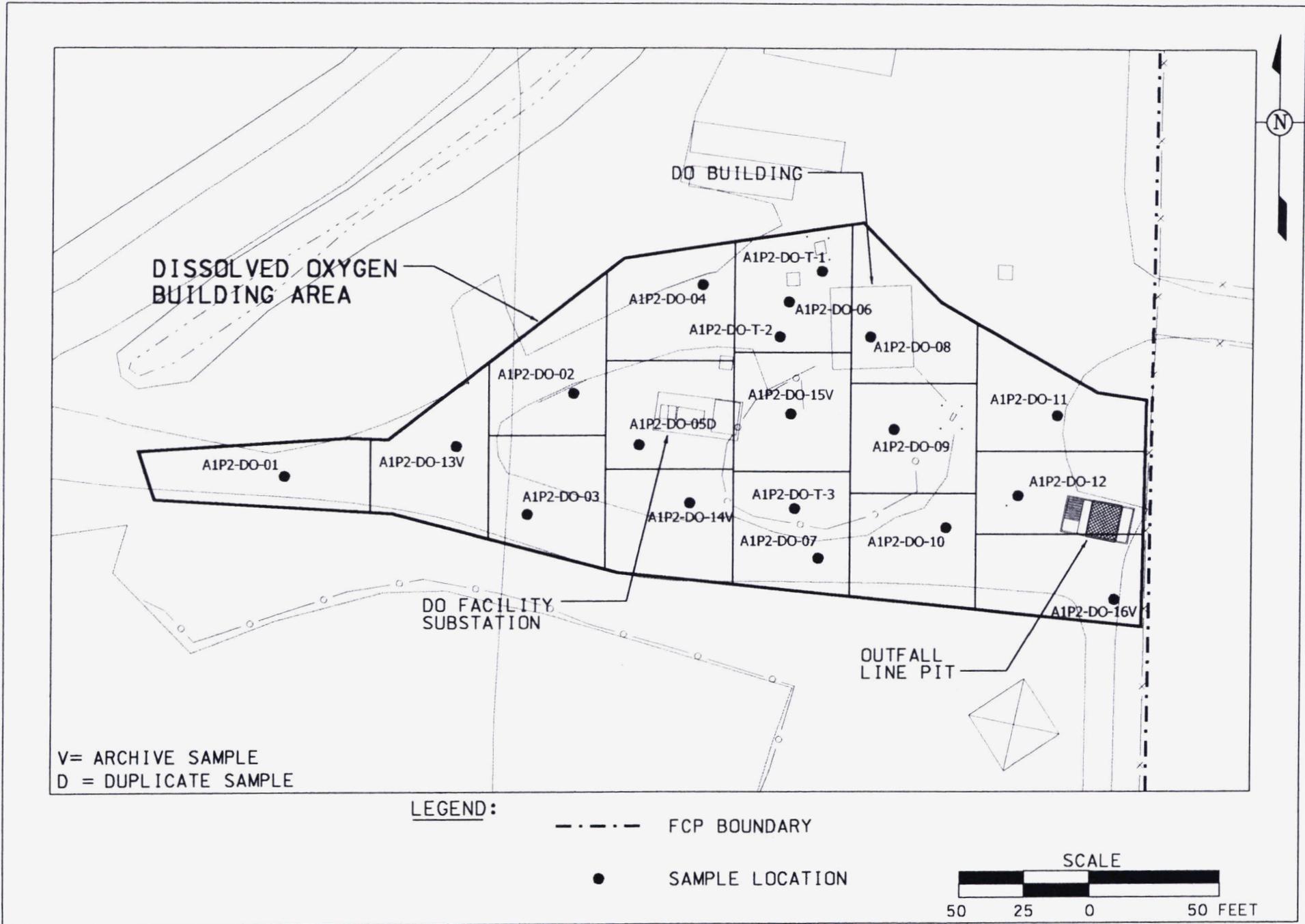
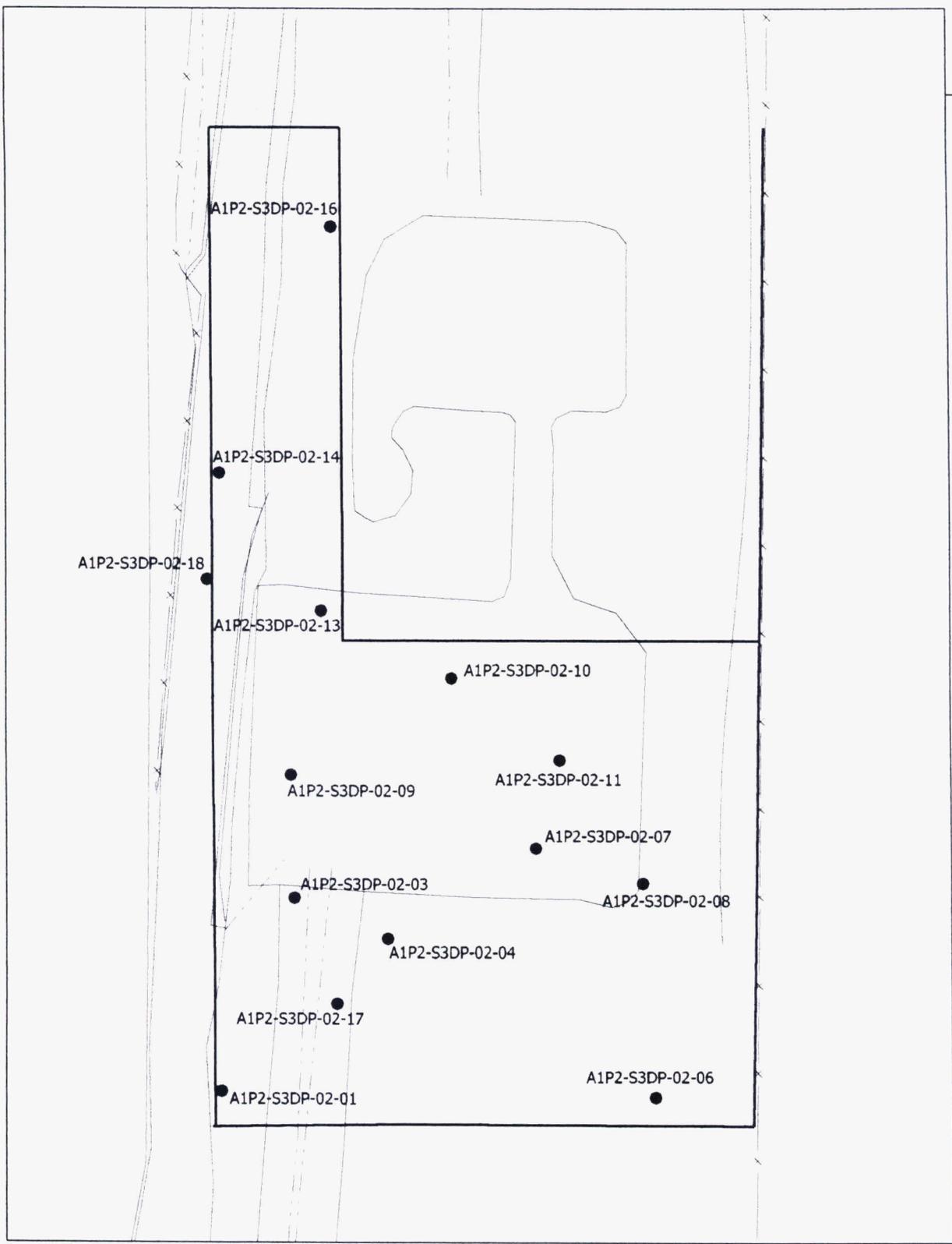


FIGURE 4-1. SAMPLE LOCATIONS FOR CU A1P2-DO



LEGEND:

● SAMPLE LOCATION

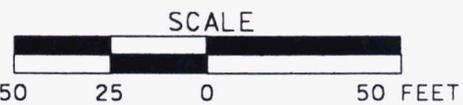


FIGURE 4-2. SAMPLE LOCATIONS FOR CU A1P2-S3DP-02

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 | October 12, 2006 |
| Start of Field Work | Completed |
| Complete Field Work | Completed |
| Complete Analytical Work | Completed |
| Complete Data Validation and Statistical Analysis | Completed |
| Submit Certification Report Addendum | October 16, 2006 |

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, Ohio.

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

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, Ohio.

U.S. Department of Energy, 2001, "CERCLA/RCRA Background Soil Study," Revision 1, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

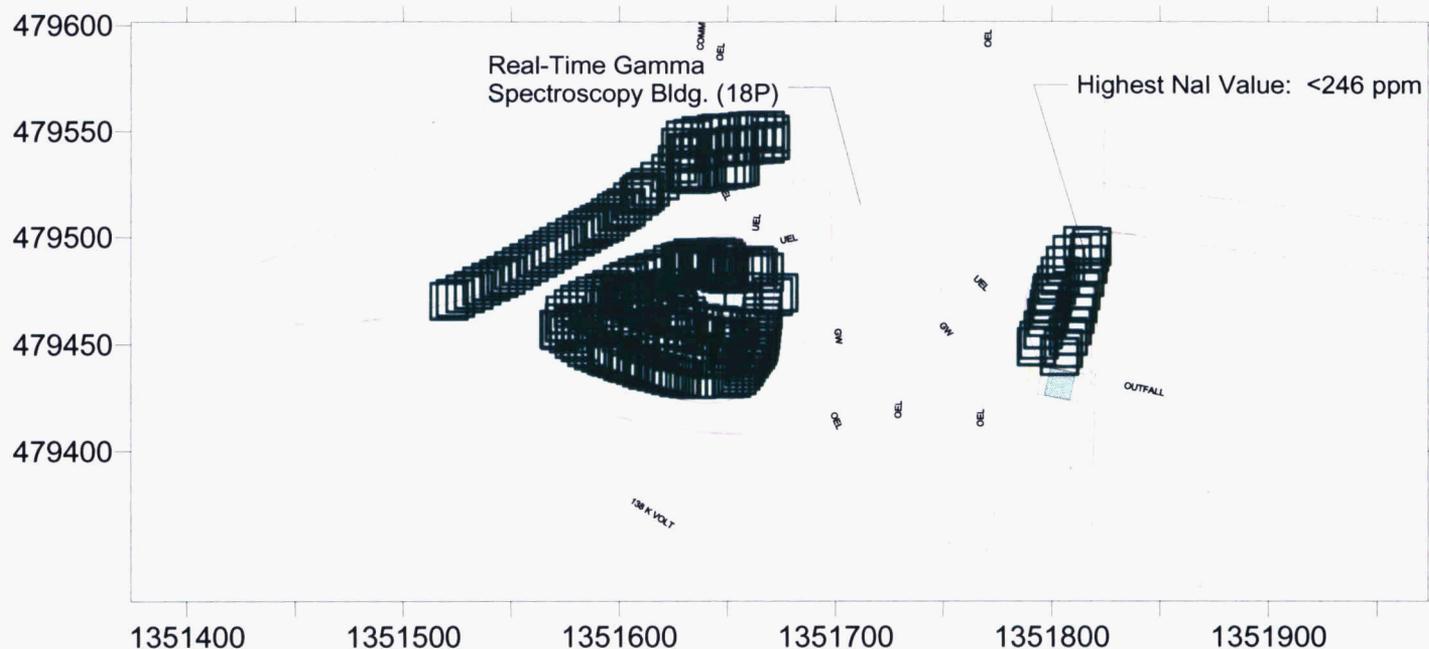
U.S. Department of Energy, 2005, "Project Specific Plan for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0001)," Revision 0, Fernald Closure Project, DOE, Fernald Area Office, Cincinnati, Ohio.

APPENDIX A

PRECERTIFICATION REAL-TIME SCAN MAPS OF CU A1P2-DO

Area 1, Phase 2 - Bldg. 18P Area Phase 1 Scan

Moisture Corrected Total Uranium
 Data Group: RSS3_0866_06-08-2005
 Measurement Date: 06-08-2005

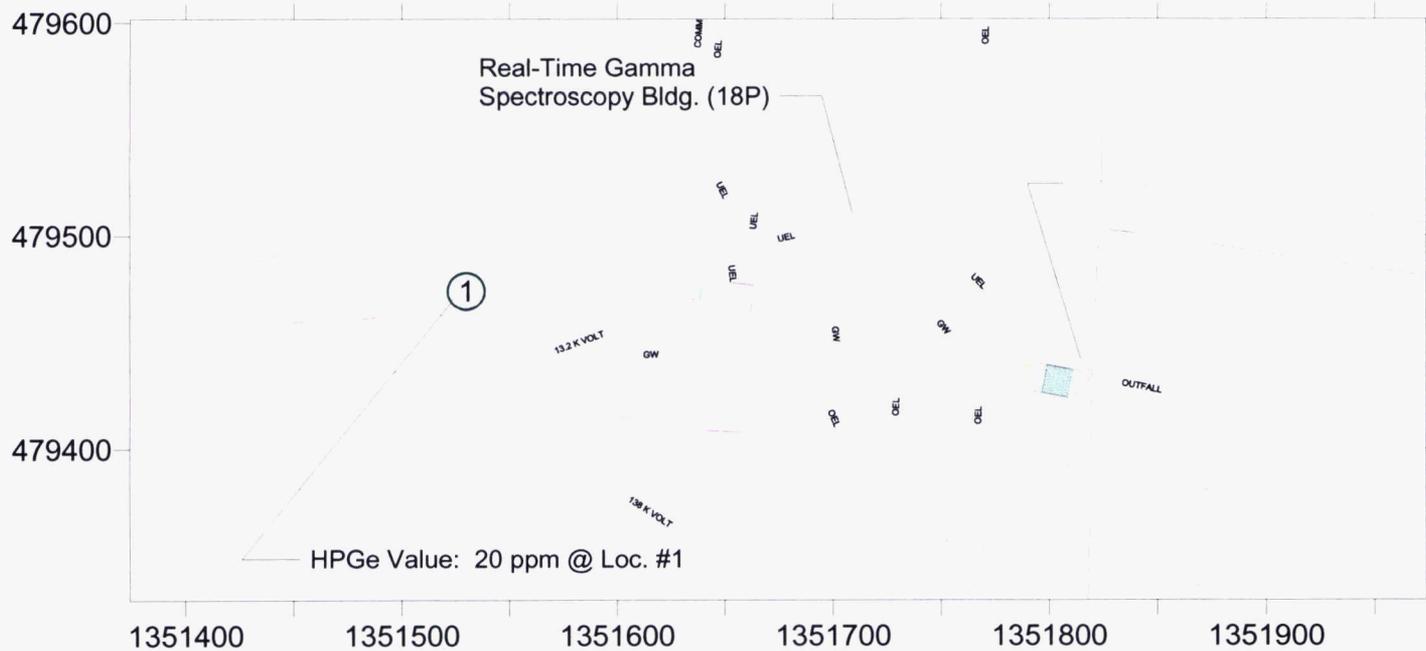


| NaI Total U (ppm) | |
|----------------------|--------------|
| | -9999 to 246 |
| | 246 to 875 |
| | 875 to 9999 |

RTIMP DWG TITLE: A1P2_BLD18P_P1_TU.srf
 Project Name: Gen. Char. For Site Soil Remediation
 Project #: 20300-PSP-0011
 Prepared By: D.Seiller/8533
 Date Prepared: 06/13/05
 Support Data: A1P2_BLDG18P_P1_NaI.xls

Area 1, Phase 2 - Bldg. 18P Area Phase 2 Measurement

Moisture Corrected Total Uranium
Det. #: 40293_06-14-05



HPGe @ 31cm
Total U (ppm)

- 0 to 246
- 246 to 9999

RTIMP DWG TITLE: A1P2_BLD18P_P2_TU.srf
 Project Name: Gen. Char. For Site Soil Remediation
 Project #: 20300-PSP-0011
 Prepared By: M. Frank/8591
 Date Prepared: 06/27/05
 Support Data: A1P2_BLD18P_P2_HPGe_31cm.xls

APPENDIX B

REAL-TIME SCAN MAPS OF CLAY PIPE EXCAVATION LOCATIONS

Figure B-1 A1P2 - Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Total Counts Per Second

Data Group: RSS3_1447_05-30-2006
Measurement Date: 05-30-2006



| NaI Total Counts per Second | |
|--------------------------------|----------------|
| Black | 0 to 3000 |
| White | 3000 to 5000 |
| Blue | 5000 to 15000 |
| Red | 15000 to 18000 |
| Dark Red | 18000 to 99999 |

RTIMP DWG ID: A1P2_CONF_P1_TC_RSS3_05-30-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_CONF_P1_RSS3_1447_05-30-2006.xls

Figure B-2 A1P2 - Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Moisture Corrected Radium-226

Data Group: RSS3_1447_05-30-2006
Measurement Date: 05-30-2006



| NaI Radium-226 (pCi/g) | |
|---|--------------|
|  | -9999 to 5.1 |
|  | 5.1 to 9999 |

RTIMP DWG ID: A1P2_CONF_P1_RA_RSS3_1447_05-30-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_CONF_P1_RSS3_1447_05-30-2006.xls

Figure B-3 A1P2 - Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Moisture Corrected Thorium-232

Data Group: RSS3_1447_05-30-2006
Measurement Date: 05-30-2006



| Nal Thorium-232 (pCi/g) | |
|---|--------------|
|  | -9999 to 4.5 |
|  | 4.5 to 9999 |

RTIMP DWG ID: A1P2_CONF_P1_TH_RSS3_1447_05-30-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_CONF_P1_RSS3_1447_05-30-2006.xls

Figure B-4 A1P2 - Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Moisture Corrected Total Uranium

Data Group: RSS3_1447_05-30-2006

Measurement Date: 05-30-2006



| Nal Total Uranium (ppm) | |
|---|--------------|
|  | -9999 to 246 |
|  | 246 to 9999 |

RTIMP DWG ID: A1P2_CONF_P1_TU_RSS3_1447_05-30-2006.srf

Project ID: Gen Char for Site Remediation 20300-PSP-0011

Prepared: Joe Nikstenas 10-24-2006

Support Data: A1P2_CONF_P1_RSS3_1447_05-30-2006.xls

Figure B-5 A1P2 - Certification Confirmation - Phase 2 Cell 8 Eastern Drainage Ditch - Moisture Corrected Radium-226

Data Group: 30904_05-30-2006

Measurement Date: 05-30-2006



HPGe @ 31 cm
Radium-226 (pCi/g)

- 0 to 5.1
- 5.1 to 9999

RTIMP DWG ID: A1P2_CONF_P2_RA_30904_05-30-2006.srf

Project ID: Gen Char for Site Remediation 20300-PSP-0011

Prepared: Joe Nikstenas 10-24-2006

Support Data: A1P2_CONF_P2_30904_05-30-2006.xls

Figure B-6 A1P2 - Certification Confirmation - Phase 2 Cell 8 Eastern Drainage Ditch - Moisture Corrected Thorium-232

Data Group: 30904_05-30-2006

Measurement Date: 05-30-2006



HPCe @ 31 cm
Thorium-232 (pCi/g)

- 0 to 4.5
- 4.5 to 9999

RTIMP DWG ID: A1P2_CONF_P2_TH_30904_05-30-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_CONF_P2_30904_05-30-2006.xls

Figure B-7 A1P2 - Certification Confirmation - Phase 2 Cell 8 Eastern Drainage Ditch - Moisture Corrected Total Uranium

Data Group: 30904_05-30-2006
Measurement Date: 05-30-2006



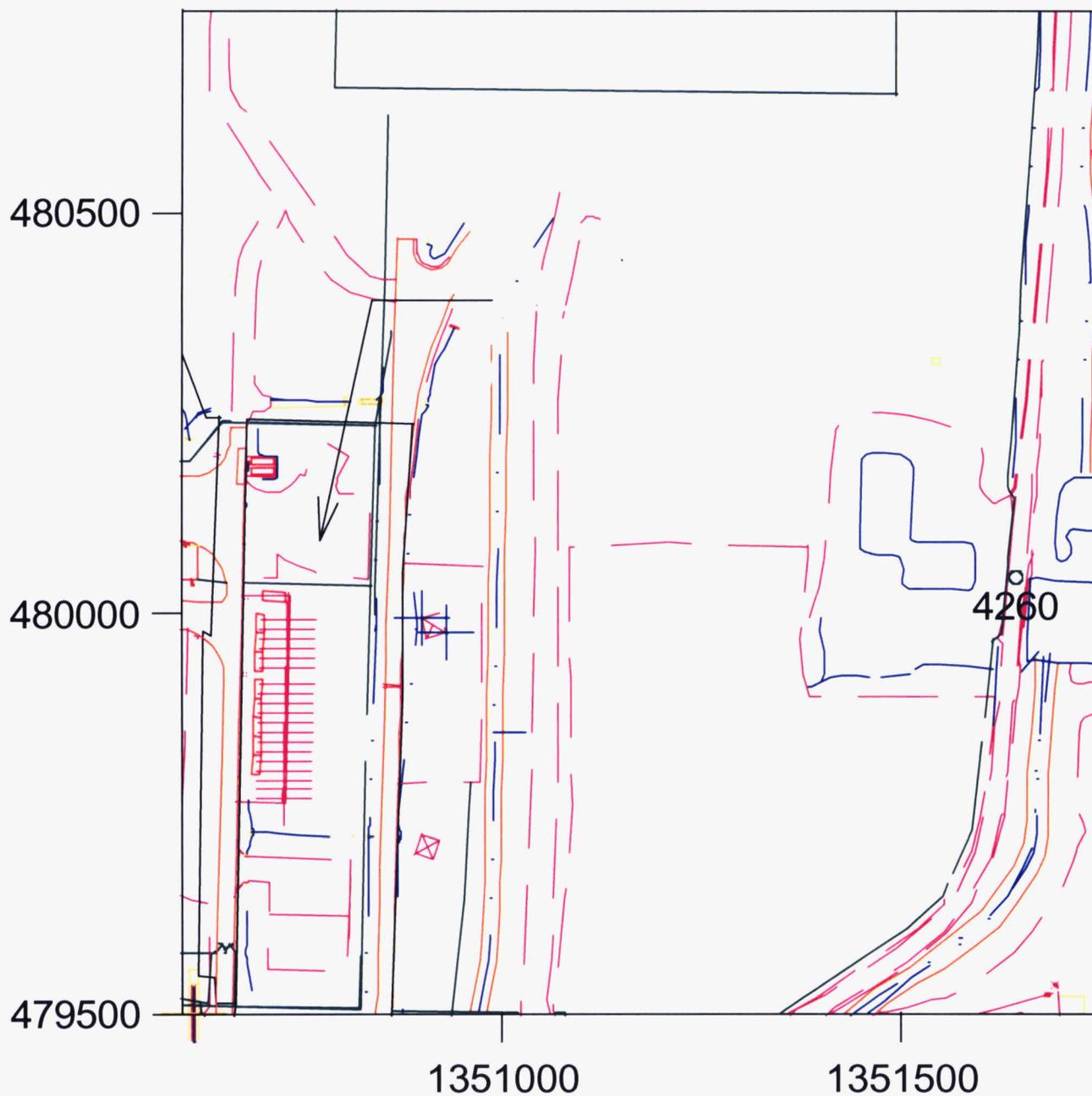
HPGe @ 31 cm
Total Uranium (ppm)
○ 0 to 246
○ 246 to 9999

RTIMP DWG ID: A1P2_CONF_P2_TU_30904_05-30-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_CONF_P2_30904_05-30-2006.xls

Figure B-8 A1P2 - Special Materials Investigation Cell 8 Eastern Drainage Ditch - Moisture Corrected Radium-226

Data Group: 40227_07-05-2006

Measurement Date: 07-05-2006



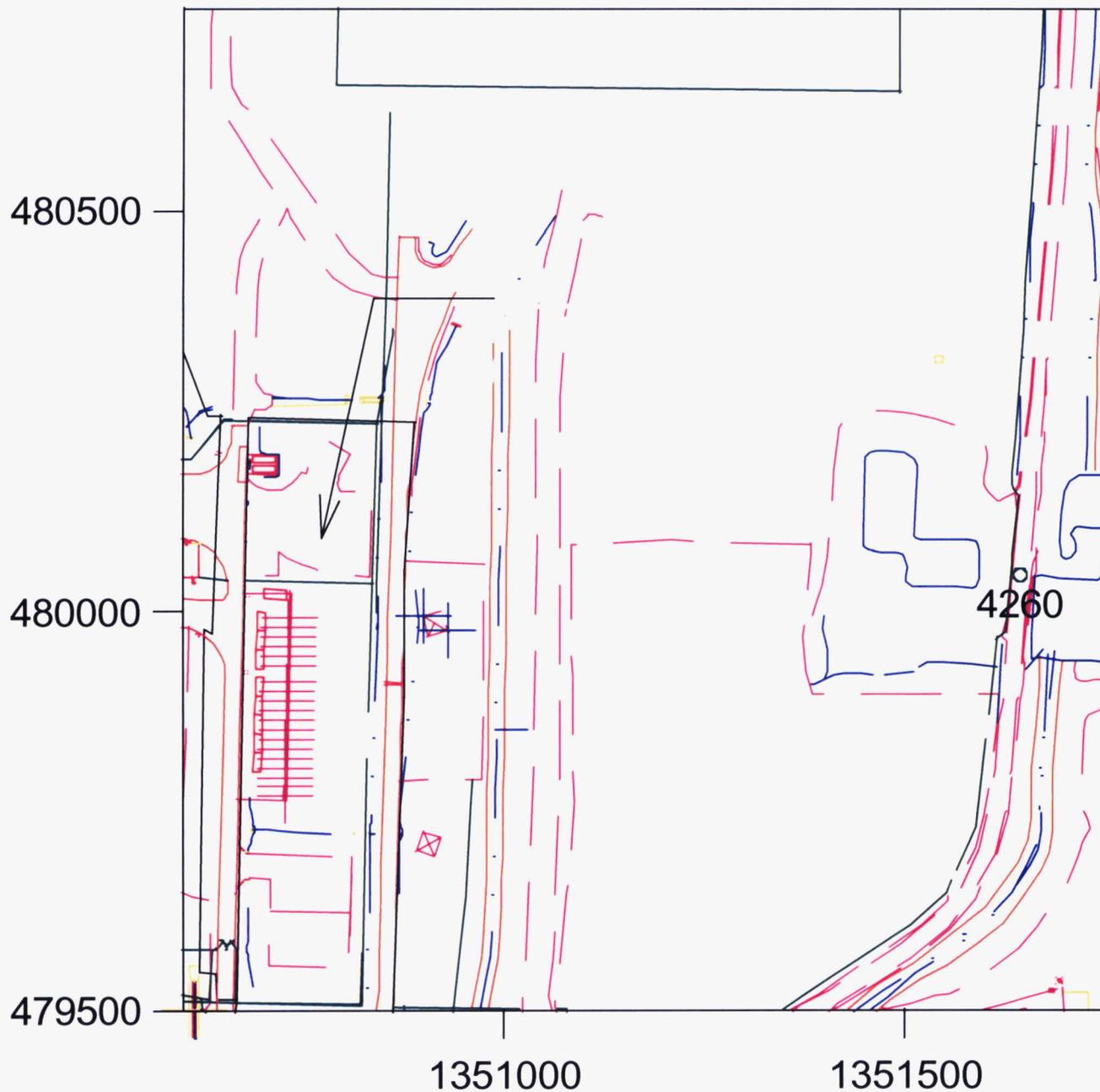
HPGe
Radium-226 (pCi/g)

- 0 to 246
- 246 to 9999

RTIMP DWG ID: A1P2_SM_RA_40227_07-05-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_SM_40227_07-05-2006.xls

Figure B-9 A1P2 - Special Materials Investigation Cell 8 Eastern Drainage Ditch - Moisture Corrected Thorium-232

Data Group: 40227_07-05-2006
Measurement Date: 07-05-2006



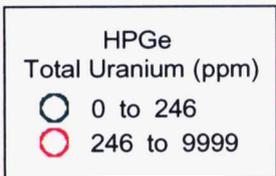
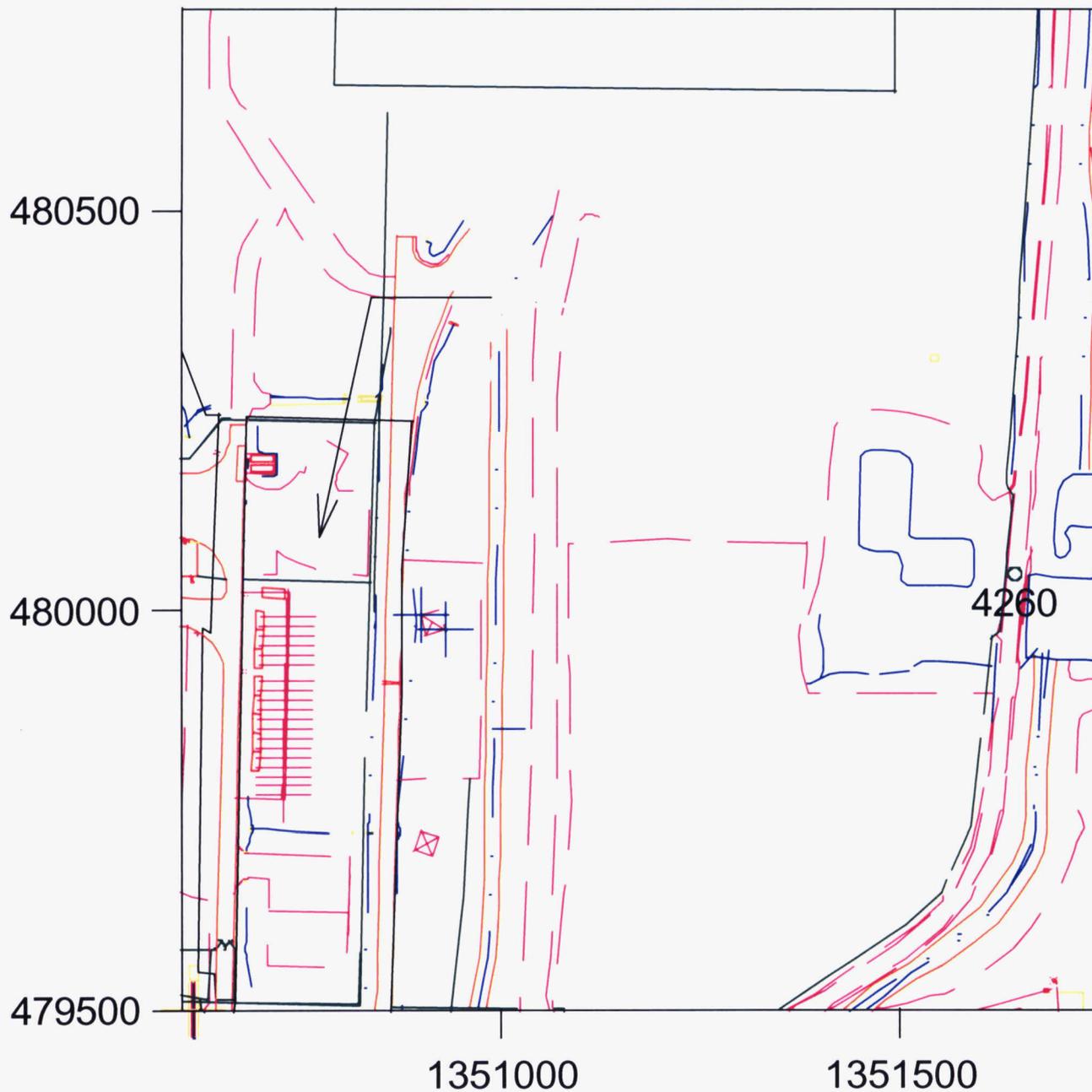
HPGe
Thorium-232 (pCi/g)

- 0 to 246
- 246 to 9999

RTIMP DWG ID: A1P2_SM_TH_40227_07-05-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_SM_40227_07-05-2006.xls

Figure B-10 A1P2 - Special Materials Investigation Cell 8 Eastern Drainage Ditch - Moisture Corrected Total Uranium

Data Group: 40227_07-05-2006
Measurement Date: 07-05-2006



RTIMP DWG ID: A1P2_SM_TU_40227_07-05-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: Joe Nikstenas 10-24-2006
Support Data: A1P2_SM_40227_07-05-2006.xls

APPENDIX C

**PSP FOR PREDESIGN OF AREA 1, PHASE II -
DISSOLVED OXYGEN BUILDING AREA
(SUPPLEMENT TO 20300-PSP-0011) AND SUPPORTING V/FCNs**

**VARIANCE/FIELD CHANGE NOTICE LOG FOR PROJECT SPECIFIC PLAN
FOR PREDESIGN OF AREA 1, PHASE II – DISSOLVED OXYGEN BUILDING
(SUPPLEMENT TO 20300-PSP-0011)**

| Variance No. | Variance Date | Variance Description | Significant? (Y or N) | Date Signed | Date Distributed | EPA/OEPA Approval |
|---------------------|----------------------|--|----------------------------------|--------------------|-------------------------|--------------------------|
| 20710-PSP-0010-1 | 5/25/05 | Variance to amend Table 2-1 and Appendix A | N | 5/27/05 | 6/1/05 | N/A |
| 20710-PSP-0010-2 | 6/1/06 | Variance to document the collection of physical soil samples for precertification of soil beneath the bedding of excavated utilities located in the A1PII Dissolved Oxygen Building. | N | 6/7/06 | 6/13/05 | N/A |

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **NO**

V/F: 20710-PSP-0010-1

WBS NO.: PROJECT/DOCUMENT/ECDC # 20710-PSP-0010 Rev. 0

Page: 1 of ^{CMP} 2-95 3

PROJECT TITLE: PSP for the Predesign of Area 1, Phase II – Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011)

Date: 5/25/05

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This V/FCN documents modifications to 20710-PSP-0010 Rev. 0, to amend Table 2-1 and Appendix A.

See Attached

Justification:

For documentation purposes only, since the analytes required for rinsates in TAL A are a subset of the analytes required for samples, it was expedient to separate the rinsates out into their own TALs (TAL C for metals, TAL D for radiological samples).

Requested by: DL Brennan

Date: 5/25/05

| X IF REQD | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|--------------------------------------|---|--|-----------------------------------|---|---------|
| X | QUALITY ASSURANCE: E. Friske <i>E. Friske</i> | 5/27/05 | X | PROJECT MANAGER: J.D. Chou <i>J.D. Chou</i> | 5/26/05 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: Frank Miller <i>Frank Miller</i> | 5/25/05 |
| X | ANALYTICAL CUSTOMER SUPPORT: WAO <i>Heather McDay</i> | 5/31/05 | | RTIMP Manager | |
| X | <i>5-26-05</i> | | X | Sampling Manager: T. Schrage <i>T. Schrage</i> | 5/31/05 |
| VARIANCE/FCN APPROVED [] YES [] NO | | | REVISION REQUIRED: [] YES [x] NO | | |
| DISTRIBUTION | | | | | |
| PROJECT MANAGER: | | DOCUMENT CONTROL: | | OTHER: | |
| QUALITY ASSURANCE: | | CHARACTERIZATION MANAGER: Frank Miller | | OTHER: | |
| FIELD MANAGER: | | OTHER: | | OTHER: | |

**TABLE 2-1
 PHYSICAL SAMPLE ANALYTICAL REQUIREMENTS**

| Analyte ^a | Method | Matrix | ASL | Preservative | Holding Time | Container ^b | Minimum Mass |
|--------------------------------|---|-----------------------------------|------------------|---|--------------|---|--|
| Radiological (TAL A) | Gamma Spec, Alpha Spec, LSC, or GPC | Solid | D/E ^a | Cool, 4° C | 12 months | Appropriate size glass with Teflon-lined lid | 500 g (1500 g) ^c |
| Metals (TAL A) | ICP-AES or ICP/MS | | | | 6 months | | |
| PCBs (TAL A) | GC | | | | 14 days | | |
| Radiological (TAL D) | Gamma Spec, Alpha Spec, LSC, or GPC | Liquid (rinsate ^d) | D/E ^a | HNO ₃ pH<2 | 6 months | Polyethylene | 4 liters |
| Metals (TAL C) | ICP-AES or ICP/MS | Liquid (rinsate ^d) | D/E ^a | HNO ₃ pH<2 | 6 months | Polyethylene | 500 milliliter |
| VOCs (TAL B) | GC/MS | Solid | D/E ^a | Cool, 4° C | 48 hours | 3 x 1-Encore Sampler ^e or equivalent plus a 1 x 1-oz jar for % moisture ^e | Each full Encore Sampler will hold approx. 5 g of soil ^e |
| VOCs (TAL B) | GC/MS | Liquid (Trip blank) | D/E ^a | H ₂ SO ₄ pH<2 Cool, 4° C | 14 days | 3 x 40-mL glass with Teflon-lined septa | 120 mL ^e (no headspace) |

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location per release in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, a rinsate will be collected by the Field Technicians.

ICP-AES - inductively coupled plasma-atomic electron spectrometry
 GC/MS - gas chromatography/mass spectroscopy
 GPC - gas proportional counter
 ICP/MS - inductively coupled plasma/mass spectroscopy
 LSC - liquid scintillation counter
 PCB - polychlorinated biphenyl

TAL C
20710-PSP-0010-C

006227

| <u>Analyte</u> | <u>FRL</u> | <u>MDL (water)</u> |
|----------------|------------|--------------------|
| Antimony | 96 mg/kg | 60.0 ug/L |
| Arsenic | 12.0 mg/kg | 20 ug/L |
| Beryllium | 1.50 mg/kg | 5.0 ug/L |
| Lead | 400 mg/kg | 10 ug/L |
| Molybdenum | 2900 mg/kg | 20 ug/L |

TAL D
20710-PSP-0010-D

| <u>Analyte</u> | <u>FRL</u> | <u>MDL (water)</u> |
|----------------|------------|--------------------|
| Radium-226 | 1.7 pCi/g | 50.0 pCi/L |
| Radium-228 | 1.8 pCi/g | 50.0 pCi/L |
| Thorium-228 | 1.7 pCi/g | 50.0 pCi/L |
| Thorium-232 | 1.5 pCi/g | 50.0 pCi/L |
| Total Uranium | 82 mg/kg | 300 ug/L |
| Technetium-99 | 30 pCi/g | 10 pCi/L |

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): NO

V/F: 20710-PSP-0010-2

WBS NO.: PROJECT/DOCUMENT/ECDC # 20710-PSP-0010 Rev.0

Page: 1 of 3

PROJECT TITLE: PSP for the Predesign of Area 1, Phase II – Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011)

Date: ~~12/7/05~~ 6/1/06
REF

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of physical soil samples for precertification of the soil beneath the bedding of excavated utilities located in Area 1, Phase II – Dissolved Oxygen Building. Construction will be excavating known utilities; however, the possibility exists that unknown utilities will be uncovered during excavation. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation from the bucket of an excavator (if necessary) after the piping and bedding material has been removed or from patties created to represent the sample locations. The goal will be to collect samples from the top six inches of soil from the bottom of the excavation. Additionally, if there is evidence of leakage from the piping (e.g. broken, cracked, or disjointed piping, stained or discolored soil), then a biased sample location will be flagged and samples will be collected from the floor and both sidewalls approximately one foot from the floor of the excavation.

The Sampling and Analytical Requirements are listed on Attachment 1 and the TALs area listed on Attachment 2.

The estimated number of sample locations is 10. The sample identifiers from the first location shall be A1P2-DO-T-1^RMP and A1P2-DO-T-1^L each additional sample ID will be sequentially numbered. Additionally, trip blank samples will be collected for the VOC samples at a rate of 1 per 20 VOC samples collected, 1 per day, or 1 per cooler whichever is more frequent. The first sample identifier for the trip blanks shall be A1P2-DO-T-L-TB1 and each sample ID will be sequentially numbered.

Where:

- A1P2 = Area 1 Phase II
- DO = Dissolved Oxygen Building Area
- T = trench
- 1, 2, 3, etc. = Consecutive Sample Numbers (Locations)
- R = Radiological analysis; M=Metals; P=Pesticides/PCBs; and L = Volatile Organic Compounds
- TB = Trip Blank

Field Sketch Required: Yes

Surveying Required: Yes. Real-Time will provide the coordinates.

Field QC samples required: Yes, trip blank samples are required for the VOC samples (see above).

Justification:

Because the utilities in this area are so deep, it is necessary to backfill the trenches after the utilities have been removed in order to ensure the area is left in a safe condition. Therefore, samples will be collected from the bottom of the excavation prior to backfilling the trenches similarly to the sampling performed during the excavation of the Abandoned Outfall Line.

REQUESTED BY: Debbie Brennan / Krista Flaugh

Date: ~~12/6/05~~ 6/1/06 REF

| X IF REQD | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|-----------|---|--------|-----------|---|-----------|
| X | QUALITY ASSURANCE: R. Friske <i>R. Friske</i> | 6-6-06 | X | PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i> | 6/1/06 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: Frank Miller <i>Frank Miller</i> | 15 Jun 06 |
| X | ANALYTICAL CUSTOMER SUPPORT: Paul J. Medwigan <i>Paul J. Medwigan</i> | 6/5/06 | | RTIMP Manager | |
| | WAO | | X | SAMPLING MANAGER: T. Buhriage <i>T. Buhriage</i> | 6/7/06 |

VARIANCE/FCN APPROVED [X] YES [] NO

REVISION REQUIRED: [] YES [x] NO

DISTRIBUTION

| | | |
|--------------------|--|--------|
| PROJECT MANAGER: | DOCUMENT CONTROL: Jeannie Rosser | OTHER: |
| QUALITY ASSURANCE: | CHARACTERIZATION MANAGER: Frank Miller | OTHER: |
| FIELD MANAGER: | OTHER: | OTHER: |

ATTACHMENT 1

SAMPLING AND ANALYTICAL REQUIREMENTS

| TAL(s) | Method | Matrix | ASL | TAT | Preservative | Container ^a | Minimum Mass/Volume |
|------------|----------------------------|--------------------------|------------------|---|--|---|---|
| Rads (A) | Gamma Spec, and LSC or GPC | Soil | D/E ^b | PEDD Gamma 10 days ^c Final Gamma 30 days Final Tc-99 10 days | Cool, 4° C | Glass with Teflon lined lid | 600 g |
| Metals (A) | ICP or ICP/MS | | | 10 days | | | |
| PCBs (A) | GC | | | 10 days | | | |
| VOCs (B) | GC/MS | Soil | D | 10 days | Cool, 4° C | 3 x 1-Encore Sampler plus 1 x 2-oz jar for percent moisture | Each full Encore Sampler will hold approx. 5g |
| VOCs (B) | GC/MS | Liquid (trip blank only) | D | 10 days | H ₂ SO ₄ PH<2 Cool, 4° C | 3 x 40-ml glass with Teflon-lined septa | 120 ml (no headspace) |

^aSample container types may be changed at the direction of the Field Sampling Lead, as long as the mass/volume requirements, container compatibility requirements, and SCQ requirements are met.

^bSamples will be analyzed according to ASL D requirements, but the minimum detection level may cause some analyses to be considered ASL E.

^cThe preliminary gamma spec analysis can be ran according to ASL B requirements.

Instruction Sampling:

Field Sketch Required: Yes

Field QC samples required: Yes, trip blank samples are required for the VOC samples

Instructions (SPL/Lab):

Analytical Data Validation is required – VSL D.

Data Package Requirement – ASL D package

Historical Data for Shipping is 15 mg/kg total uranium from boring A1P2-DO-04

ATTACHMENT 2

TAL A
(10 Soil Analysis Specified in V/FCN)

| Analyte (Rad) | WAC | FRL (BTV) | Requested MDL |
|----------------------------|------------|-----------------------|----------------------|
| Radium-226 | NA | 1.7 pCi/g | 0.17 pCi/g |
| Radium-228 | NA | 1.8 pCi/g | 0.18 pCi/g |
| Thorium-228 | NA | 1.7 pCi/g | 0.17 pCi/g |
| Thorium-232 | NA | 1.5 pCi/g | 0.15 pCi/g |
| Total Uranium | 1030 mg/kg | 82 mg/kg | 8.2 mg/kg |
| Antimony ¹ | NA | 96 mg/kg (10 mg/kg) | 9.6 mg/kg |
| Aroclor-1254 | NA | 0.13 mg/kg | 0.013 mg/kg |
| Aroclor-1260 | NA | 0.13 mg/kg | 0.013 mg/kg |
| Arsenic | NA | 12.0 mg/kg | 1.20 mg/kg |
| Beryllium | NA | 1.50 mg/kg | 0.150 mg/kg |
| Lead ¹ | NA | 400 mg/kg (200 mg/kg) | 40 mg/kg |
| Molybdenum ¹ | NA | 2900 mg/kg (10 mg/kg) | 290 mg/kg |
| Technetium-99 ² | 29.1 pCi/g | 30 pCi/g | 2.91 pCi/g |

¹ Ecological COC

² If the WAC is lower than the established FRL, the MDL will be set at 10 percent of the On-Site Disposal Facility WAC.

TAL B
(10 Soil Analysis Specified in V/FCN)

| Analyte (Rad) | WAC | FRL | Requested MDL |
|-------------------------|------------|------------|----------------------|
| Tetrachloroethene (PCE) | 128 mg/kg | 3.6 mg/kg | 0.36 mg/kg |

BTV - benchmark toxicity value

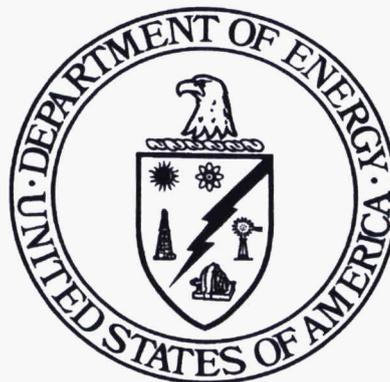
MDL - minimum detection level

pCi/g - picoCuries per gram

**PROJECT SPECIFIC PLAN FOR
PREDESIGN OF AREA 1, PHASE II -
DISSOLVED OXYGEN BUILDING AREA
(SUPPLEMENT TO 20300-PSP-0011)**

DEMOLITION, SOIL AND DISPOSAL PROJECT

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



MAY 2005

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

**20710-PSP-0010
REVISION 0**

**PROJECT SPECIFIC PLAN FOR
PREDESIGN OF AREA 1 PHASE II – DISSOLVED OXYGEN
BUILDING AREA
(SUPPLEMENT TO 20300-PSP-0011)**

Document Number 20710-PSP-0010
Revision 0

FINAL

APPROVAL:

Jyh-Dong Chiou 5/19/05

Jyh-Dong Chiou, Project Manager
Demolition, Soil and Disposal Project Date

Frank Miller 5/20/05

Frank Miller, Characterization/Waste Management Manager
Demolition, Soil and Disposal Project Date

Tom Buhrlage for T.E.B. 5/19/05

Tom Buhrlage, Soil Sampling Manager
Demolition, Soil and Disposal Project Date

Mike Frank 5/23/05

Mike Frank, Real-Time Instrumentation Measurement Program Manager
Demolition, Soil and Disposal Project Date

Linda Barlow 5/20/05

Linda Barlow, Waste Acceptance Organization
Safety, Health and Quality Date

Reinhard Friske 5-19-05

Reinhard Friske, Quality Control
Safety, Health, and Quality Date

FERNALD CLOSURE PROJECT

Fluor Fernald, Inc.
P.O. Box 538704
Cincinnati, Ohio 45253-8704

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| 1.0 Introduction | 1-1 |
| 1.1 Purpose | 1-1 |
| 1.2 Scope | 1-1 |
| 1.3 Variance/Field Change Notice (V/FCN) Documentation..... | 1-1 |
| 1.4 Key Personnel..... | 1-1 |
| 2.0 Area-Specific Work..... | 2-1 |
| 2.1 Area 1 Phase II Dissolved Oxygen Building Area | 2-1 |
| 2.1.1 History..... | 2-1 |
| 2.1.2 Predesign..... | 2-1 |
| 2.1.2.1 Scope..... | 2-1 |
| 2.1.2.2 Determination of FRL COCs and WAC COCs | 2-1 |
| 2.1.2.2.1 WAC COCs..... | 2-1 |
| 2.1.2.2.2 FRL COCs..... | 2-1 |
| 2.1.2.3 Sampling Strategy | 2-2 |
| 2.1.2.3.1 WAC Sampling Strategy..... | 2-2 |
| 2.1.2.3.2 FRL Sampling Strategy..... | 2-2 |
| 2.1.3 Precertification..... | 2-3 |
| 3.0 Instrumentation and Techniques..... | Sec. 3 & 4 |
| 3.1 Measurement Instrumentation and Techniques | Sec. 3 & 4 |
| 3.1.1 Real-Time..... | Sec. 3 & 4 |
| 3.1.1.1 Sodium Iodide Data Acquisition (RTRAK, RSS, GATOR, EMS)..... | Sec. 3 & 4 |
| 3.1.1.2 HPGe Data Acquisition..... | Sec. 3 & 4 |
| 3.1.1.3 Excavation Monitoring System..... | Sec. 3 & 4 |
| 3.1.1.4 Radon Monitor | Sec. 3 & 4 |
| 3.1.2 Surface Moisture Measurements..... | Sec. 3 & 4 |
| 3.2 Real-Time Measurement Identification..... | Sec. 3 & 4 |
| 3.3 Real-Time Data Mapping..... | Sec. 3 & 4 |
| 3.4 Real-Time Surveying..... | Sec. 3 & 4 |
| 4.0 Predesign | Sec. 3 & 4 |
| 4.1 Real-Time Activities | Sec. 3 & 4 |
| 4.2 Sample Collection Methods | Sec. 3 & 4 |
| 4.3 Physical Sample Identification | Sec. 3 & 4 |
| 4.4 Borehole Abandonment | Sec. 3 & 4 |
| 5.0 Excavation Control Measures..... | Sec. 5 & 6 |
| 5.1 Excavation Design Control Requirements | Sec. 5 & 6 |
| 5.1.1 Contamination Zone..... | Sec. 5 & 6 |
| 5.1.2 Floors, Roads and Foundations..... | Sec. 5 & 6 |
| 5.1.3 Real-Time Lift Scans | Sec. 5 & 6 |
| 5.1.4 Above-WAC Lift Scans..... | Sec. 5 & 6 |
| 5.2 Organic Screening and Physical Sampling Requirements..... | Sec. 5 & 6 |
| 5.2.1 Above-WAC Photoionization Detector (PID)/Gas Chromatograph (GC) Screening..... | Sec. 5 & 6 |
| 5.2.2 All Other Physical Sample Requirements..... | Sec. 5 & 6 |
| 5.2.3 PID Screening and Physical Sampling Procedures..... | Sec. 5 & 6 |
| 5.2.4 Physical Sample Identification..... | Sec. 5 & 6 |

**TABLE OF CONTENTS
(Continued)**

| | | |
|------|--|-------------------|
| 6.0 | Precertification..... | Sec. 5 & 6 |
| 6.1 | Initial Precertification NaI Scan at Base of Design Grade | Sec. 5 & 6 |
| 6.2 | Precertification HPGe Measurements in 20 ppm FRL (Uranium) Areas..... | Sec. 5 & 6 |
| 6.3 | Precertification HPGe Measurements in 82 ppm FRL (Uranium) Areas..... | Sec. 5 & 6 |
| 6.4 | Delineating Hot Spots Following Precertification HPGe Measurements..... | Sec. 5 & 6 |
| 7.0 | Quality Assurance/Quality Control Requirements | Sec. 7 through 11 |
| 7.1 | Quality Control Samples - Real-Time Measurements and Physical Samples | Sec. 7 through 11 |
| 7.2 | Data Validation..... | Sec. 7 through 11 |
| | 7.2.1 Physical Sample Data Validation..... | Sec. 7 through 11 |
| | 7.2.2 Real-Time Data Verification/Validation..... | Sec. 7 through 11 |
| 7.3 | Applicable Documents, Methods and Standards..... | Sec. 7 through 11 |
| 7.4 | Surveillances..... | Sec. 7 through 11 |
| 7.5 | Implementation and Documentation of V/FCN | Sec. 7 through 11 |
| 8.0 | Safety and Health..... | Sec. 7 through 11 |
| 9.0 | Equipment Decontamination | Sec. 7 through 11 |
| 10.0 | Disposition of Wastes..... | Sec. 7 through 11 |
| 11.0 | Data and Records Management | Sec. 7 through 11 |
| | 11.1 Real-Time | Sec. 7 through 11 |
| | 11.2 Physical Samples | Sec. 7 through 11 |

APPENDICES

| | |
|------------|---|
| Appendix A | Target Analyte Lists for Predesign of A1P11 - Dissolved Oxygen Building Area |
| Appendix B | Boring Table and Sample Identifiers for A1P11 - Dissolved Oxygen Building Area Predesign |

LIST OF TABLES AND FIGURES

| | |
|------------|--|
| Table 2-1 | Physical Sample Analytical Requirements |
| Figure 1-1 | Area 1 Phase II - Dissolved Oxygen Building Area |
| Figure 2-1 | Area 1 Phase II - DO Building Area, Historical Boring Location |
| Figure 2-2 | Area 1 Phase II - DO Building Area, Proposed Boring Locations |

LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---------|--|
| A1P11 | Area 1, Phase II |
| ASCOC | area-specific constituent of concern |
| ASL | analytical support level |
| BTV | benchmark toxicity level |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| COC | constituent of concern |
| DOE | U.S. Department of Energy |
| EMS | Excavation Monitoring System |
| FCP | Fernald Closure Project |
| FRL | final remediation level |
| GC/MS | gas chromatograph/mass spectroscopy |
| GPC | gas proportional counter |
| HPGe | high-purity germanium (detector) |
| ICP-AES | inductively coupled plasma-atomic emission spectrometry |
| ICP/MS | inductively coupled plasma/mass spectrometry |
| LSC | liquid scintillation counter |
| MDL | minimum detection level |
| mg/kg | milligrams per kilogram |
| MSL | mean sea level |
| NaI | sodium iodide |
| PCB | polychlorinated biphenyl |
| pCi/g | picoCuries per gram |
| PID | photoionization detector |
| ppm | parts per million |
| PSP | Project Specific Plan |
| QC | Quality Control |
| RCRA | Resource Conservation Recovery Act |
| RI/FS | Remedial Investigation/Feasibility Study |
| RSS | Radiation Scanning System |
| RTRAK | Real-Time Radiation Tracking System |
| RWP | Radiological Work Permit |
| SCQ | Sitewide CERCLA Quality Assurance Project Plan |
| SEP | Sitewide Excavation Plan |
| TAL | Target Analyte List |
| V/FCN | Variance/Field Change Notice |
| VOC | volatile organic compound |
| VSL | validation support level |
| WAC | waste acceptance criteria |

1.0 INTRODUCTION

This Project Specific Plan (PSP) describes the data collection activities necessary to support predesign of the Dissolved Oxygen Building and surrounding area within Area 1, Phase II (A1PII). The format of this PSP differs from that of previously submitted PSPs as this PSP only presents the specific information regarding this area. The general information that is routinely addressed in a PSP, can be found in 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*. While this PSP has section headings similar to a full-length PSP, where the information in the section is identical to the information in the General PSP, 20300-PSP-0011, a reference to this General PSP is made, and the information is not repeated.

1.1 PURPOSE

The purpose of this PSP is to provide specific direction regarding the predesign sampling of the Dissolved Oxygen Building and surrounding area within A1PII. This detailed information includes reasons for sample collection, sample locations, number of borings, depth intervals, and constituents of concern.

1.2 SCOPE

Remediation Area 1, Phase II lies on the east side of the site. The Dissolved Oxygen Building and surrounding area includes the Dissolved Oxygen Building, the Dissolved Oxygen Facility Substation, the Outfall Line Pit, and the area surrounding these structures (see Figure 1-1). The schedule for implementation of this PSP is Summer 2005.

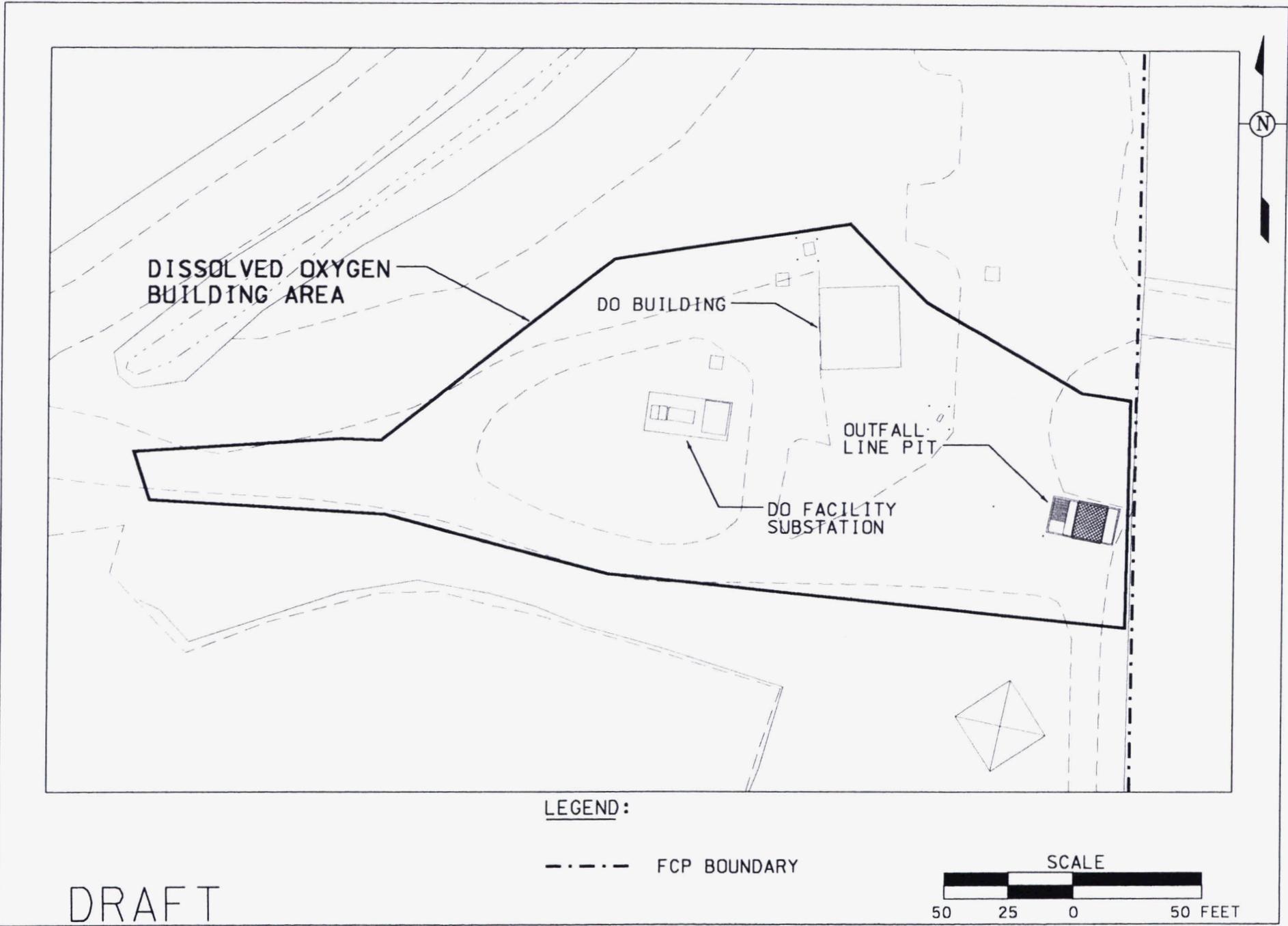
This PSP is not considered a work authorization document (for implementation of fieldwork) per SH-0021, Work Permits. Work authorization documents directing the implementation of fieldwork, per SH-0021, may include applicable Environmental Closure Project procedures, Fluor Fernald work permits, Radiological Work Permit (RWP), penetration permits, and other applicable permits.

1.3 VARIANCE/FIELD CHANGE NOTICE (V/FCN) DOCUMENTATION

Reference Section 7.5 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

1.4 KEY PERSONNEL

Reference Section 1.4 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.



DRAFT

FIGURE 1-1. AREA 1 PHASE II - DISSOLVED OXYGEN BUILDING AREA

006227

2.0 AREA-SPECIFIC WORK

2.1 AREA 1, PHASE II DISSOLVED OXYGEN BUILDING AREA

2.1.1 History

The Dissolved Oxygen Area includes the Dissolved Oxygen Building, the Dissolved Oxygen Facility Substation, the Outfall Line Pit, also known as the Parshall Flume Building, and the area surrounding these structures. Blowers were installed within the Dissolved Oxygen Building to add oxygen to the site's treated wastewater effluent in the Dissolved Oxygen Tank prior to discharge to the Great Miami River via the Parshall Flume and Effluent Discharge Pipeline. However, the dissolved oxygen measurement in the water discharged from site through the Parshall Flume consistently fell within the site's permitted range without requiring the addition of oxygen. Therefore, the blowers were rarely used. The Dissolve Oxygen Tank was removed in 2004. Low-level uranium analysis for an EM-50 funded project was also performed in the Dissolved Oxygen Building.

2.1.2 Predesign

Predesign will be performed under the guidelines of Section 4.0 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

2.1.2.1 Scope

This PSP covers data collection activities associated with predesign in the Dissolved Oxygen Building and surrounding area within A1PII. This PSP supplements previous investigations for A1PII and does not cover excavation control.

2.1.2.2 Determination of FRL COCs and WAC COCs

Using the Remedial Investigation/Feasibility Study (RI/FS) data for the area, Table 2-7 of the Sitewide Excavation Plan (SEP), and the ecological constituents of concern (COCs) from adjoining areas, a list of final remediation level (FRL) COCs was determined. The FRL COCs for this PSP are listed in Section 2.1.2.2.2.

2.1.2.2.1 WAC COCs

No above-waste acceptance criteria (WAC) locations exist in this area, therefore, no above-WAC locations require investigation.

2.1.2.2.2 FRL COCs

Within the scope of this PSP, the analyte list of FRL area-specific constituent of concern (ASCOC) for A1PII Dissolved Oxygen Building Area is given below.

Primary COCs

- Radium-226
- Radium-228
- Thorium-228
- Thorium-232
- Total Uranium

Secondary COCs

- Antimony
- Aroclor-1254
- Aroclor-1260
- Arsenic
- Beryllium
- Lead
- Molybdenum
- Technetium-99
- Tetrachloroethene

2.1.2.3 Sampling Strategy

2.1.2.3.1 WAC Sampling Strategy

No known above-WAC locations exist in this area, therefore, no above-WAC locations require physical sampling.

2.1.2.3.2 FRL Sampling Strategy

One historical above-FRL result was obtained from this area. Boring 12321 had an above-FRL beryllium result of 2.04 milligrams per kilogram (mg/kg) from the 4.5 to 5-foot interval. Figure 2-1 provides this historical above-FRL boring location. This above-FRL beryllium result corresponds to depths displaying characteristics found in several adjacent areas. It is concluded that these levels are consistent with background conditions. This approach is more fully explained in Addendum to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Resource Conservation and Recovery Act (RCRA) Background Soil Study (where results in the 12 to 36-inch interval ranged from below the FRL to 3.05 mg/kg for beryllium). No further investigation for this COC, beryllium, is planned.

As shown in Figure 2-1, there is very little historical data available from within this area. Therefore, the majority of samples collected under this PSP will be for the purpose of filling this large data gap in support of the predesign investigation. A total of twelve sample locations were selected within this area. Eleven sample locations were randomly selected within this area and a bias sample location was placed within the existing Dissolved Oxygen Building. See Figure 2-2 for sample locations. See Appendix A for the Target Analyte Lists (TALs) and Appendix B for the boring table, which includes sample

identifiers and target sampling intervals. Table 2-1 addresses the physical sample volumes, preservation requirements, and analysis information.

Quality control (QC) sample requirements will include a duplicate field sample, a trip blank, and a container blank and/or rinsate, and will be collected per procedure SMPL-21, Collection of Field Quality Control Samples. All data collection activities will be consistent with the Sitewide CERCLA Quality Assurance Plan (SCQ) and Section 3.1 of the SEP. Per requirements of the SCQ, SEP, and Data Quality Objectives SL-052, Revision 3, the field quality control, analytical and data validation requirements are as follows:

- Field QC requirements include one field duplicate, as noted above and identified in Appendix B. For the duplicate field sample, twice the soil volume (a second core) will be collected at one location, and will not be homogenized with the original sample. The field duplicate sample will be analyzed for the same COCs as the other samples from which the field duplicate has been collected.

If "push tubes" are used for sample collection, one container blank will be collected before sample collection begins and one will be collected at the conclusion of sample collection for the entire area. The container blank sample will be analyzed for the same radiological and metals COCs as the other samples from which the container blank is being collected. If an alternate sample collection method is used, one rinsate will be collected at a minimum frequency of one per 20 pieces of equipment reused in the field.

A trip blank is required if volatile organic compound (VOC) samples are being collected. The frequency for a trip blank is one per day, or one per batch of 20 VOC samples collected, or one per cooler to be shipped, whichever is more frequent.

- All analyses will be performed at Analytical Support Level (ASL) D or E, where E meets the minimum detection level of 10 percent of the FRL and is above the SCQ ASL D detection level, but the analyses meet all other SCQ ASL D criteria. An ASL D data package will be provided for all of the data.
- All field data will be validated. One hundred (100) percent of the laboratory data will be validated to Validation Support Level (VSL) D. If any result is rejected during validation, the sample will be re-analyzed or an archive location will be sampled and analyzed in its place. If necessary, this change will be documented in a V/FCN.

2.1.3 Precertification

Precertification will be performed per 20300-PSP-0011, Section 3.0 and Section 6.0.

**TABLE 2-1
 PHYSICAL SAMPLE ANALYTICAL REQUIREMENTS**

| Analyte ^a | Method | Matrix | ASL | Preservative | Holding Time | Container ^b | Minimum Mass |
|--------------------------------|---|-----------------------------------|------------------|---|--------------|---|--|
| Radiological (TAL A) | Gamma Spec, Alpha Spec, LSC, or GPC | Solid | D/E ^a | Cool, 4° C | 12 months | Appropriate size glass with Teflon-lined lid | 500 g (1500 g) ^c |
| Metals (TAL A) | ICP-AES or ICP/MS | | | | 6 months | | |
| PCBs (TAL A) | GC | | | | 14 days | | |
| Radiological (TAL A) | Gamma Spec, Alpha Spec, LSC, or GPC | Liquid (rinsate ^d) | D/E ^a | HNO ₃ pH<2 | 6 months | Polyethylene | 4 liters |
| Metals (TAL A) | ICP-AES or ICP/MS | Liquid (rinsate ^d) | D/E ^a | HNO ₃ pH<2 | 6 months | Polyethylene | 500 milliliter |
| VOCs (TAL B) | GC/MS | Solid | D/E ^a | Cool, 4° C | 48 hours | 3 x 1-Encore Sampler ^c or equivalent plus a 1 x 1-oz jar for % moisture ^c | Each full Encore Sampler will hold approx. 5 g of soil ^c |
| VOCs (TAL B) | GC/MS | Liquid (Trip blank) | D/E ^a | H ₂ SO ₄ pH<2 Cool, 4° C | 14 days | 3 x 40-mL glass with Teflon-lined septa | 120 mL ^c (no headspace) |

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location per release in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, a rinsate will be collected by the Field Technicians.

ICP-AES - inductively coupled plasma-atomic electron spectrometry

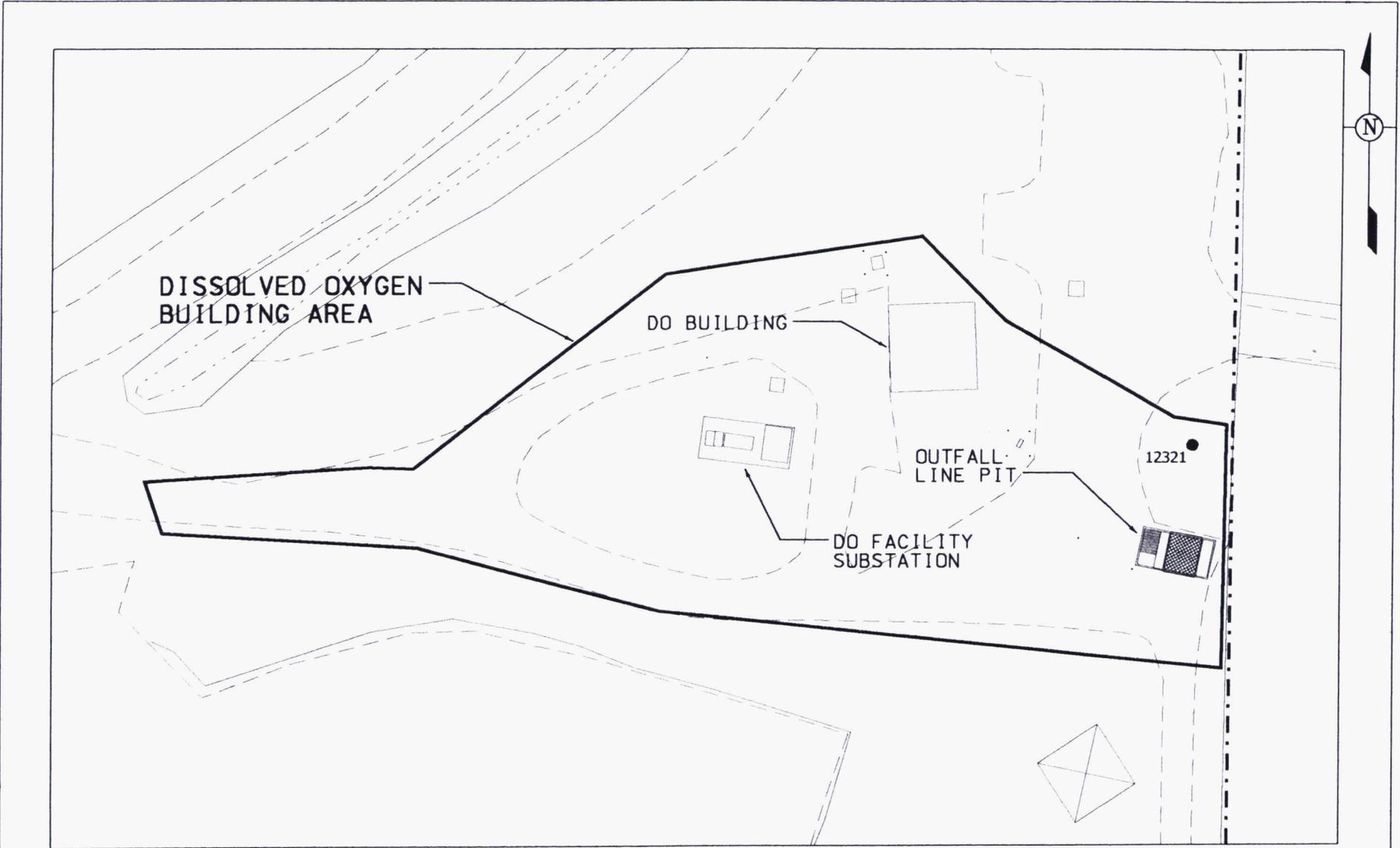
GC/MS - gas chromatography/mass spectroscopy

GPC - gas proportional counter

ICP/MS - inductively coupled plasma/mass spectroscopy

LSC - liquid scintillation counter

PCB - polychlorinated biphenyl

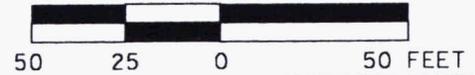


LEGEND:

----- FCP BOUNDARY

● HISTORICAL BORING

SCALE



DRAFT

FIGURE 2-1. AREA 1 PHASE II - DO BUILDING AREA,
HISTORICAL BORING LOCATION

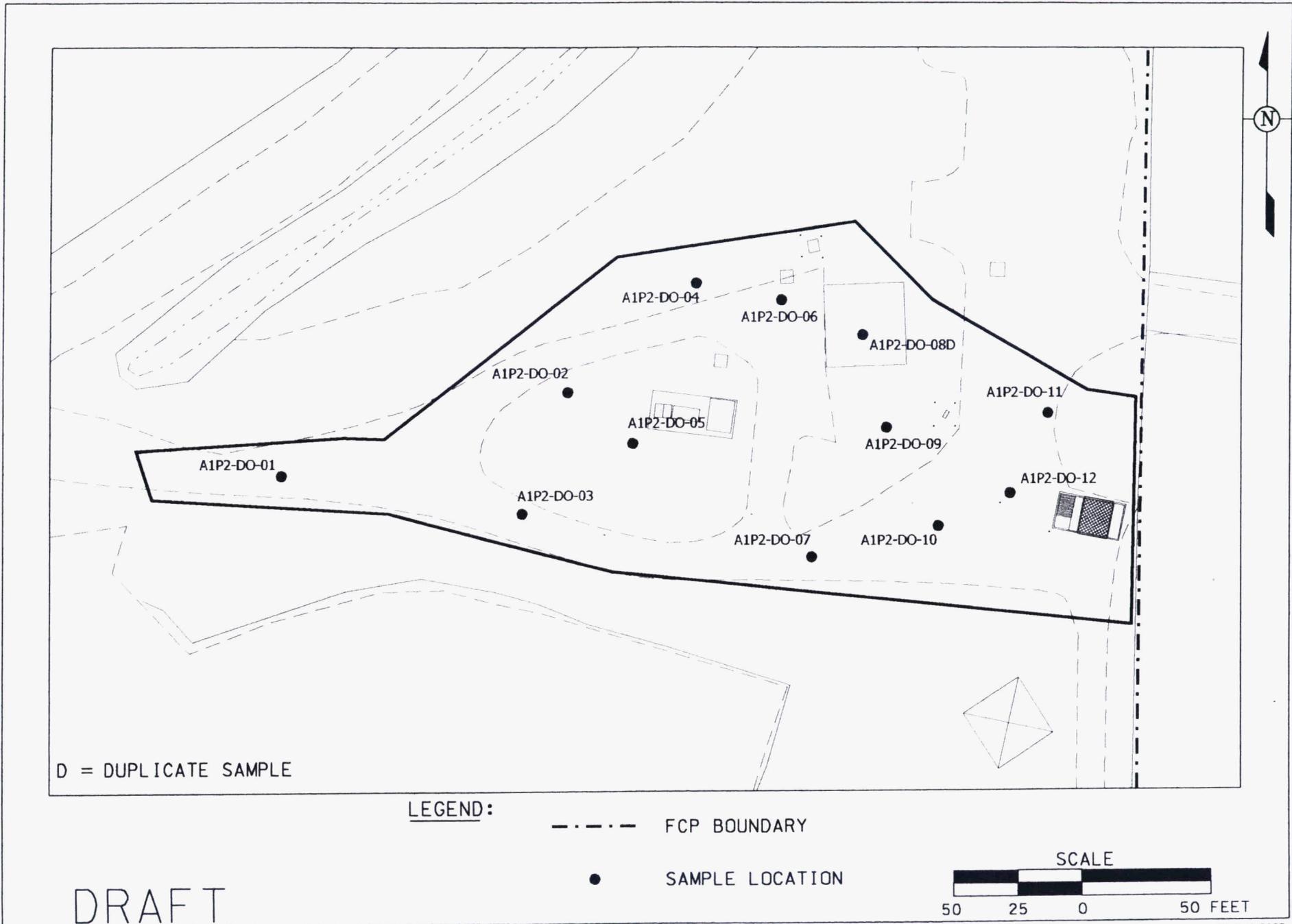


FIGURE 2-2. AREA 1 PHASE II - DO BUILDING
AREA PROPOSED BORING LOCATIONS

3.0 INSTRUMENTATION AND TECHNIQUES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

3.1 MEASUREMENT INSTRUMENTATION AND TECHNIQUES

3.1.1 Real-Time

3.1.1.1 Sodium Iodide Data Acquisition (RTRAK, RSS, GATOR, EMS)

3.1.1.2 HPGe Data Acquisition

3.1.1.3 Excavation Monitoring System

3.1.1.4 Radon Monitor

3.1.2 Surface Moisture Measurements

3.2 REAL-TIME MEASUREMENT IDENTIFICATION

3.3 REAL-TIME DATA MAPPING

3.4 REAL-TIME SURVEYING

4.0 PREDESIGN

4.1 REAL-TIME ACTIVITIES

Refer to Section 4.1 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

4.2 SAMPLE COLLECTION METHODS

4.3 PHYSICAL SAMPLE IDENTIFICATION

4.4 BOREHOLE ABANDONMENT

5.0 EXCAVATION CONTROL MEASURES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

5.1 EXCAVATION DESIGN CONTROL REQUIREMENTS

5.1.1 Contamination Zone

5.1.2 Floors, Roads and Foundations

5.1.3 Real-Time Lift Scans

5.1.4 Above-WAC Lift Scans

5.2 ORGANIC SCREENING AND PHYSICAL SAMPLING REQUIREMENTS

5.2.1 Above-WAC Photoionization Detector (PID)/Gas Chromatograph (GC) Screening

5.2.2 All Other Physical Sample Requirements

5.2.3 PID Screening and Physical Sampling Procedures

5.2.4 Physical Sample Identification

6.0 PRECERTIFICATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

6.1 INITIAL PRECERTIFICATION NaI SCAN AT BASE OF DESIGN GRADE

6.2 PRECERTIFICATION HPGe MEASUREMENTS IN 20 PPM FRL (URANIUM) AREAS

6.3 PRECERTIFICATION HPGe MEASUREMENTS IN 82 PPM FRL (URANIUM) AREAS

6.4 DELINEATING HOT SPOTS FOLLOWING PRECERTIFICATION HPGe MEASUREMENTS

7.0 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

7.1 QUALITY CONTROL SAMPLES - REAL-TIME MEASUREMENTS AND PHYSICAL SAMPLES

7.2 DATA VALIDATION

7.2.1 Physical Sample Data Validation

See Section 2.1.2.3 within this PSP.

7.2.2 Real-Time Data Verification/Validation

7.3 APPLICABLE DOCUMENTS, METHODS AND STANDARDS

7.4 SURVEILLANCES

7.5 IMPLEMENTATION AND DOCUMENTATION OF V/FCNs

8.0 SAFETY AND HEALTH

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

9.0 EQUIPMENT DECONTAMINATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

10.0 DISPOSITION OF WASTES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

11.0 DATA AND RECORDS MANAGEMENT

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

11.1 REAL-TIME

11.2 PHYSICAL SAMPLES

APPENDIX A

**TARGET ANALYTE LISTS FOR PREDESIGN OF
A1PII - DISSOLVED OXYGEN BUILDING AREA**

**APPENDIX A
TARGET ANALYTE LISTS FOR PREDESIGN
OF A1PII - DISSOLVED OXYGEN BUILDING**

**TAL A
Soil Analysis, Off-site, (ASL D/E)**

| Analyte (Rad) | WAC | FRL (BTV) | Requested MDL |
|----------------------------|------------|-----------------------|----------------------|
| Radium-226 | NA | 1.7 pCi/g | 0.17 pCi/g |
| Radium-228 | NA | 1.8 pCi/g | 0.18 pCi/g |
| Thorium-228 | NA | 1.7 pCi/g | 0.17 pCi/g |
| Thorium-232 | NA | 1.5 pCi/g | 0.15 pCi/g |
| Total Uranium | 1030 mg/kg | 82 mg/kg | 8.2 mg/kg |
| Antimony ¹ | NA | 96 mg/kg (10 mg/kg) | 9.6 mg/kg |
| Aroclor-1254 | NA | 0.13 mg/kg | 0.013 mg/kg |
| Aroclor-1260 | NA | 0.13 mg/kg | 0.013 mg/kg |
| Arsenic | NA | 12.0 mg/kg | 1.20 mg/kg |
| Beryllium | NA | 1.50 mg/kg | 0.150 mg/kg |
| Lead ¹ | NA | 400 mg/kg (200 mg/kg) | 40 mg/kg |
| Molybdenum ¹ | NA | 2900 mg/kg (10 mg/kg) | 290 mg/kg |
| Technetium-99 ² | 29.1 pCi/g | 30 pCi/g | 2.91 pCi/g |

¹ Ecological COC

² If the WAC is lower than the established FRL, the MDL will be set at 10 percent of the On-Site Disposal Facility WAC.

**TAL B
Soil Analysis, Off-site, (ASL D/E)**

| Analyte (Rad) | WAC | FRL | Requested MDL |
|-------------------------|------------|------------|----------------------|
| Tetrachloroethene (PCE) | 128 mg/kg | 3.6 mg/kg | 0.36 mg/kg |

BTV - benchmark toxicity value

MDL - minimum detection level

pCi/g - picoCuries per gram

APPENDIX B

**BORING TABLE AND SAMPLE IDENTIFIERS FOR
PREDESIGN OF A1PII - DISSOLVED OXYGEN BUILDING AREA**

APPENDIX B
BORING TABLE AND SAMPLE IDENTIFIERS FOR
A1P11 - DISSOLVED OXYGEN BUILDING AREA PREDESIGN

| Boring | Northing | Easting | Depth (feet) | Depth Identifier | Sample ID | TAL |
|-------------|-----------|------------|--------------|------------------|--------------------|-----|
| A1P2-DO-01 | 479448.6 | 1351487.1 | 0-0.5 | 1 | A1P2-DO-01^1-RMP | A |
| | | | | | A1P2-DO-01^1-L | B |
| A1P2-DO-02 | 479480.25 | 1351598.81 | 0-0.5 | 1 | A1P2-DO-02^1-RMP | A |
| | | | | | A1P2-DO-02^1-L | B |
| A1P2-DO-03 | 479433.76 | 1351581.01 | 0-0.5 | 1 | A1P2-DO-03^1-RMP | A |
| | | | | | A1P2-DO-03^1-L | B |
| A1P2-DO-04 | 479521.79 | 1351648.24 | 0-0.5 | 1 | A1P2-DO-04^1-RMP | A |
| | | | | | A1P2-DO-04^1-L | B |
| A1P2-DO-05 | 479460.47 | 1351624.02 | 0-0.5 | 1 | A1P2-DO-05^1-RMP | A |
| | | | | | A1P2-DO-05^1-L | B |
| A1P2-DO-06 | 479515.36 | 1351681.35 | 0-0.5 | 1 | A1P2-DO-06^1-RMP | A |
| | | | | | A1P2-DO-06^1-L | B |
| A1P2-DO-07 | 479416.95 | 1351693.22 | 0-0.5 | 1 | A1P2-DO-07^1-RMP | A |
| | | | | | A1P2-DO-07^1-L | B |
| A1P2-DO-08D | 479502.01 | 1351712.99 | 0-0.5 | 1 | A1P2-DO-08^1-RMP | A |
| | | | | | A1P2-DO-08^1-L | B |
| | | | | | A1P2-DO-08^1-RMP-D | A |
| | | | | | A1P2-DO-08^1-L-D | B |
| A1P2-DO-09 | 479466.4 | 1351722.38 | 0-0.5 | 1 | A1P2-DO-09^1-RMP | A |
| | | | | | A1P2-DO-09^1-L | B |
| A1P2-DO-10 | 479428.82 | 1351742.65 | 0-0.5 | 1 | A1P2-DO-10^1-RMP | A |
| | | | | | A1P2-DO-10^1-L | B |
| A1P2-DO-11 | 479471.84 | 1351785.15 | 0-0.5 | 1 | A1P2-DO-11^1-RMP | A |
| | | | | | A1P2-DO-11^1-L | B |
| A1P2-DO-12 | 479441.18 | 1351770.32 | 0-0.5 | 1 | A1P2-DO-12^1-RMP | A |
| | | | | | A1P2-DO-12^1-L | B |

APPENDIX D

V/FCNs 20710-PSP-0009-27 AND 28

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **YES**

V/F: 20710-PSP-0009-27

WBS NO.: PROJECT/DOCUMENT/ECDC #20710-PSP-0009 REV 2

Page: 1 of 4

PROJECT TITLE: PSP for Area 1 Phase II Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling

Date: 5/30/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection samples from one additional boring in Certification Unit (CU) S3-DP-02. During excavation of the eastern drainage ditch of the OSDF Cell 8 footprint, a one-foot section of four-inch diameter pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan (Figure 1, attached) was performed on the remaining footprint.

The location shall be field located and sampled (TAL A through TAL G) in the 0-0.5 feet interval. The Sampling and Analytical Requirements are listed in Attachment 1, and the target analyte lists are in Attachment 2.

The Sample IDs are identified as A1P2-S3DP-02-17^RMP and A1P2-S3DP-02-17^L. The trip blank shall be identified as A1P2-S3DP-02-TB.

Where:

- A1P2 = Area 1 Phase II
- S3 = Sector 3
- DP = deep excavation areas
- 02 = Certification unit from which sample was collected
- 17 = seventeenth sample location
- ^ = differentiates between the location identifier and the sample identifier
- RMP or L = Suite Identifier
 - "R" for radiological
 - "M" for metals
 - "P" for PCBs
 - "L" for VOCs

Surveying required: Yes. Surveying of sample locations will occur after samples have been collected.

Justification:

While excavating/relocating the drainage ditch east of OSDF Cell 8 footprint, a one-foot section of four-inch diameter clay pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan was performed on the remaining footprint. Sampling is necessary to confirm that the remaining soils (i.e. post-excavation) meet the certification requirements. Per Section 4.5 of the PSP, changes to the PSP will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 5/30/06

| X IF REQD | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|-----------|---|---------|-----------|---|-----------|
| X | QUALITY ASSURANCE: R. Friske <i>R. Friske</i> | 6-6-06 | X | PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i> | 5/30/06 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: K. Ahl <i>K. Ahl</i> | 30 May 06 |
| X | ANALYTICAL CUSTOMER SUPPORT: Paul S. McWhirgin <i>Paul S. McWhirgin</i> | 5/30/06 | | RTIMP Manager | |
| | WAO | | X | SAMPLING MANAGER: T. Burridge <i>T. Burridge</i> | 6/9/06 |

VARIANCE/FCN APPROVED [X] YES [] NO

REVISION REQUIRED: [] YES [x] NO

DISTRIBUTION

| | | |
|--------------------|--|--------|
| PROJECT MANAGER: | DOCUMENT CONTROL: Jeannie Rosser | OTHER: |
| QUALITY ASSURANCE: | CHARACTERIZATION MANAGER: Frank Miller | OTHER: |
| FIELD MANAGER: | OTHER: | OTHER: |

**Attachment 1
Sampling and Analytical Requirements**

| TAL(s) | Method ^a | Matrix | Preservative | ASL | TAT | Container ^b | Minimum Mass/Volume |
|---|---------------------|---------------------|--|-----|---------------|--|---|
| Radiological/Metals/PCBs TALs A, B, C, D, E, G | Gamma Spec | Solid | None | D/E | 10 days PEDD | Glass with Teflon-lined lid | 500 g (1500 g) ^c |
| | LSC | | | | 30 days final | | |
| | ICP or ICP/MS | | | | 10 days | | |
| | GC | | | | 10 days | | |
| VOCs (TAL F) | GC/MS | | Cool, 4 degrees C | | 10 days | 3 x 1-Encore Sampler ^c plus 1 x 2 oz jar for % moisture | Each full Encore Sampler ^c will hold approx. 5 g |
| VOCs (TALs F) | GC/MS | Liquid (trip blank) | H ₂ SO ₄ pH<2 Cool, 4 degrees C | | 10 days | 3 x 40-ml glass with teflon-lined septa | 120 ml (no headspace) |

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location in the CU in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, the Field Technicians will collect a rinsate.

Special Instructions:

Field QC (trip blank) will be collected under this V/FCN.

Analytical Data Validation is required (VSL D).

Highest total uranium result for the area is 12 mg/kg from location A1P2-S3DP-01-05

**Attachment 2
Target Analyte Lists**

**20710-PSP-0009-A, 1 sample
(Radiological - ASL D/E*)**

| Analyte | On-Property FRL | MDL (soil) |
|---------------|-----------------|------------|
| Total Uranium | 20 mg/kg | 2.0 mg/kg |
| Radium-226 | 1.7 pCi/g | 0.17 pCi/g |
| Radium-228 | 1.8 pCi/g | 0.18 pCi/g |
| Thorium-228 | 1.7 pCi/g | 0.17 pCi/g |
| Thorium-232 | 1.5 pCi/g | 0.15 pCi/g |

**20710-PSP-0009-B, 1 sample
(Metals - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|---------------|-----------------|-----------|
| Technetium-99 | 30 pCi/g | 3.0 pCi/g |

**20710-PSP-0009-C, 1 sample
(Metals - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|---------|-----------------|-----------|
| Arsenic | 12 mg/kg | 1.2 mg/kg |
| Lead | 400 mg/kg | 40 mg/kg |

**20710-PSP-0009-D, 1 sample
(Metals - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|-----------|----------------------|------------|
| Antimony | 96 mg/kg /(10 mg/kg) | 1.0 mg/kg |
| Beryllium | 1.5 mg/kg | 0.15 mg/kg |

**20710-PSP-0009-E, 1 sample
(PCBs - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|--------------|-----------------|-------------|
| Aroclor-1254 | 0.13 mg/kg | 0.013 mg/kg |
| Aroclor-1260 | 0.13 mg/kg | 0.013 mg/kg |

**20710-PSP-0009-F, 1 sample
(VOCs - ASL D/E*)**

| Analyte | On-Property FRL | MDL (soil) | MDL (water) |
|-------------------|-----------------|------------|-------------|
| Tetrachloroethene | 3.6 mg/kg | 0.36 mg/kg | 10 µg/L |

**20710-PSP-0009-G, 1 sample
(Metals - ASL D/E*)**

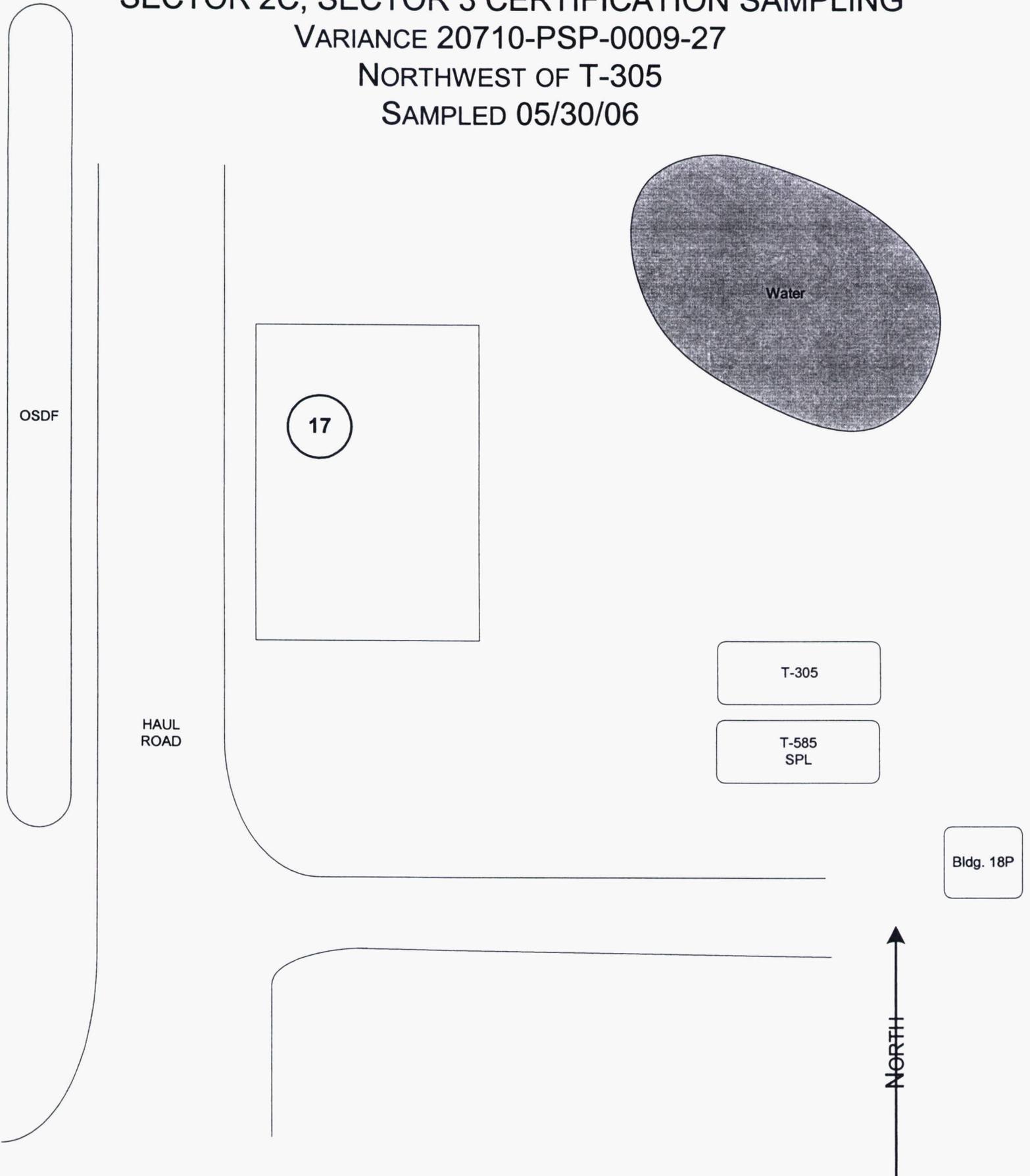
| Analyte | On-Property FRL | MDL |
|------------|------------------------|-----------|
| Molybdenum | 2900 mg/kg /(10 mg/kg) | 1.0 mg/kg |

AREA 1 PHASE 2 CERTIFIED FOR REUSE AREAS, TRAP RANGE,
SECTOR 2C, SECTOR 3 CERTIFICATION SAMPLING

VARIANCE 20710-PSP-0009-27

NORTHWEST OF T-305

SAMPLED 05/30/06





006227

State of Ohio Environmental Protection Agency

Southwest District

401 East Fifth Street
Dayton, Ohio 45402-2911TELE: (937)285-6357 FAX: (937)285-6249
www.epa.state.oh.usBob Taft, Governor
Bruce Johnson, Lt. Governor
Joseph P. Koncelik, Director**MEMO**

TO: J.D. Chiou, Fluor Fernald

FROM: Michelle Waller, Ohio EPA/OFFO

DATE: June 28, 2006

SUBJECT: **APPROVAL - V/FCN 20710-PSP-0009-27 PSP for Area 1, Phase II - Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling**

This V/FCN documents the collection of samples from an additional boring in CU S3-DP-02. A one-foot section of pipe was found in this area, and the area was excavated, the pipe removed, and real-time scanned. This sampling will be used to verify the certification status of the area. Ohio EPA approves of this variance.

Q:\ou5\A1P2\VFCN17.wpd

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No) YES

V/F: 20710-PSP-0009-28

006227

WBS NO.: PROJECT/DOCUMENT/ECDC #20710-PSP-0009 REV 2

Page: 1 of 4

PROJECT TITLE: PSP for Area 1 Phase II Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling *located east*

Date: 7/05/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of samples from one additional boring in Certification Unit (CU) S3-DP-02. During excavation of the eastern drainage ditch of the OSDF Cell 8 footprint, a four-foot section of four-inch diameter pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan (Figure 1, attached) was performed on the remaining footprint. *Coordinate with Frank Miller for the exact location area to be sampled. dma 7/7/06*

The location shall be field located and sampled (TAL A through TAL G) in the 0-0.5 feet interval. The Sampling and Analytical Requirements are listed in Attachment 1, and the target analyte lists are in Attachment 2.

The Sample IDs are identified as A1P2-S3DP-02-18^RMP and A1P2-S3DP-02-18^L. The trip blank shall be identified as A1P2-S3DP-02-TB1.

Where:

- A1P2 = Area 1 Phase II
- S3 = Sector 3
- DP = deep excavation areas
- 02 = Certification unit from which sample was collected
- 18 = seventeenth sample location
- ^ = differentiates between the location identifier and the sample identifier
- RMP or L = Suite Identifier
 - "R" for radiological
 - "M" for metals
 - "P" for PCBs
 - "L" for VOCs

Surveying required: Yes. Surveying of sample location will occur after samples have been collected.

Justification:

While excavating/relocating the drainage ditch east of OSDF Cell 8 footprint, a four-foot section of four-inch diameter clay pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan was performed on the remaining footprint. Sampling is necessary to confirm that the remaining soils (i.e. post-excavation) meet the certification requirements. Per Section 4.5 of the PSP, changes to the PSP will be documented with a V/FCN.

REQUESTED BY: Denise Arico

Date: 7/05/06

| X IF REQD | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|--------------------------------------|---|--|-----------------------------------|---|---------|
| X | QUALITY ASSURANCE: R. Friske <i>R. Friske</i> | 7-13-06 | X | PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i> | 7/7/06 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: T. Abiz <i>T. Abiz</i> | 6/30/06 |
| X | ANALYTICAL CUSTOMER SUPPORT: WAO <i>Paul S. McWhirgan</i> | 7/7/06 | | RTIME Manager | |
| | | | X | SAMPLING MANAGER: T. Buhning <i>T. Buhning</i> | 7/7/06 |
| VARIANCE/FCN APPROVED [X] YES [] NO | | | REVISION REQUIRED: [] YES [x] NO | | |
| DISTRIBUTION | | | | | |
| PROJECT MANAGER: | | DOCUMENT CONTROL: Jeannie Rosser | | OTHER: | |
| QUALITY ASSURANCE: | | CHARACTERIZATION MANAGER: Frank Miller | | OTHER: | |
| FIELD MANAGER: | | OTHER: | | OTHER: | |

Attachment 1
Sampling and Analytical Requirements

| TAL(s) | Method ^a | Matrix | Preservative | ASL | TAT | Container ^b | Minimum Mass/Volume |
|---|--|------------------------|--|-----|-------------------|---|---|
| Radiological/Metals/PCBs TALs A, B, C, D, E, G | ICP/MS (Total U) and Gamma Spec (Ra and Th Isotopes) | Solid | Cool, 4 deg C | | 48 hours (ICP/MS) | Glass with Teflon- lined lid | 500 g (1500 g) ^c |
| | 10 days PEDD (Gamma) | | | | | | |
| | 30 days final | | | | | | |
| | 48 hours | | | | | | |
| | LSC | | | | 10 days | | |
| | ICP or ICP/MS | | | | 10 days | | |
| | GC | | | | 10 days | | |
| VOCs (TAL F) | GC/MS | Solid | Cool, 4 deg C | D/E | 4 days | 3 x 1-Encore Sampler ^c plus 1 x 2 oz jar for % moisture | Each full Encore Sampler ^c will hold approx. 5 g |
| VOCs (TALs F) | GC/MS | Liquid (trip blank) | H ₂ SO ₄ pH<2 Cool, 4 deg C | | 4 days | 3 x 40-ml glass with teflon-lined septa | 120 ml (no headspace) |

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location in the CU in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, the Field Technicians will collect a rinsate.

Special Instructions:

Field QC (trip blank) will be collected under this V/FCN.

Analytical Data Validation is required (VSL D).

Highest total uranium result for the area is 12 mg/kg from location A1P2-S3DP-01-05

**Attachment 2
Target Analyte Lists**

**20710-PSP-0009-A, 1 sample
(Radiological - ASL D/E*)**

| Analyte | On-Property FRL | MDL (soil) |
|---------------|-----------------|------------|
| Total Uranium | 20 mg/kg | 2.0 mg/kg |
| Radium-226 | 1.7 pCi/g | 0.17 pCi/g |
| Radium-228 | 1.8 pCi/g | 0.18 pCi/g |
| Thorium-228 | 1.7 pCi/g | 0.17 pCi/g |
| Thorium-232 | 1.5 pCi/g | 0.15 pCi/g |



**20710-PSP-0009-B, 1 sample
(Radiological - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|---------------|-----------------|-----------|
| Technetium-99 | 30 pCi/g | 3.0 pCi/g |

**20710-PSP-0009-C, 1 sample
(Metals - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|---------|-----------------|-----------|
| Arsenic | 12 mg/kg | 1.2 mg/kg |
| Lead | 400 mg/kg | 40 mg/kg |

**20710-PSP-0009-D, 1 sample
(Metals - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|-----------|-----------------------|------------|
| Antimony | 96 mg/kg / (10 mg/kg) | 1.0 mg/kg |
| Beryllium | 1.5 mg/kg | 0.15 mg/kg |

**20710-PSP-0009-E, 1 sample
(PCBs - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|--------------|-----------------|-------------|
| Aroclor-1254 | 0.13 mg/kg | 0.013 mg/kg |
| Aroclor-1260 | 0.13 mg/kg | 0.013 mg/kg |

**20710-PSP-0009-F, 1 sample
(VOCs - ASL D/E*)**

| Analyte | On-Property FRL | MDL (soil) | MDL (water) |
|-------------------|-----------------|------------|-------------|
| Tetrachloroethene | 3.6 mg/kg | 0.36 mg/kg | 10 µg/L |

**20710-PSP-0009-G, 1 sample
(Metals - ASL D/E*)**

| Analyte | On-Property FRL | MDL |
|------------|-------------------------|-----------|
| Molybdenum | 2900 mg/kg / (10 mg/kg) | 1.0 mg/kg |

Arico, Denise

From: Kienow, Bernard
Sent: Monday, July 10, 2006 2:27 PM
To: Arico, Denise
Subject: RE: V/FCN 20710-PSP-0009-28

Denise

The coordinates for the sample are

North = 480045.76

East = 1351643.59

Elev = 592.15

Bernie

n 516' start

-----Original Message-----

From: Arico, Denise
Sent: Friday, July 07, 2006 2:45 PM
To: Kienow, Bernard; Clinton, Andy
Subject: FW: V/FCN 20710-PSP-0009-28
Importance: High

Did anyone happen to get the coords for this one????

-----Original Message-----

From: Arico, Denise
Sent: Wednesday, July 05, 2006 4:42 PM
To: Noble, Rebecca; Buhrlage, Thomas; Clinton, Andy; Hey, James; Kienow, Bernard; McSwigan, Paul; Meyer, Amy; Reynolds, Karen
Cc: Chambers, James; Chen, Baohe; Frank, Michael; Kirby, Pamela; Leslie, Kathy; Raines, Yvonne; Stephens, Lynn; Stroud, Lee
Subject: V/FCN 20710-PSP-0009-28
Importance: High

Jim,

Here is the v/fcn as we discussed a little while ago for the utility discovered east of Cell 8. (V/FCN 27 to this same PSP was sampled about 1 month ago for the same thing).

There are two tabs to the excel file.

The sample is to be field located and surveying will need to follow-up.

I will need the samples shipped out early tomorrow morning. There will be one Encore sample.

Call me if you have any questions.

Thanks,
Denise

7/26/2006



State of Ohio Environmental Protection Agency

Southwest District

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Bob Taft, Governor
Bruce Johnson, Lt. Governor
Joseph P. Koncelik, Director

MEMO

TO: J.D. Chiou, Fluor Fernald
FROM: Donna Bohannon, Ohio EPA/OFFO
DATE: July 27, 2006
SUBJECT: **APPROVAL - V/FCN 20710-PSP-0009-28 *PSP for Area 1, Phase II - Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling***

This V/FCN requests the collection of one boring, in CU S3-DP-02 from A1PII - Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling, after discovering a four-foot section of a four-inch clay pipe in the certified area, while relocating/excavating the drainage ditch east of the OSDF Cell 8 footprint. The sampling will determine whether the post-excavation soils will meet the certification requirements. Ohio EPA approves of this variance.