

**PROJECT SPECIFIC PLAN  
FOR SAMPLING OF ADDITIONAL MATERIAL ON THE  
WESTERN PORTION OF SOIL PILE AR6-006 (FORMER SP-7)  
FOR ENVIROCARE'S WASTE ACCEPTANCE CRITERIA  
(SUPPLEMENT TO 20300-PSP-0011)**

**DEMOLITION, SOIL AND DISPOSAL PROJECT**

**FERNALD CLOSURE PROJECT  
FERNALD, OHIO**



**DECEMBER 2004**

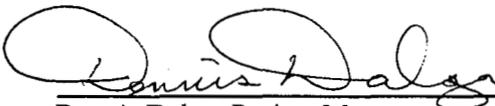
**U.S. DEPARTMENT OF ENERGY**

**20600-PSP-0010  
REVISION 0**

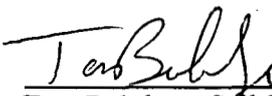
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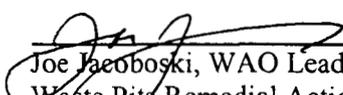
**Document Number 20600-PSP-0010  
Revision 0**

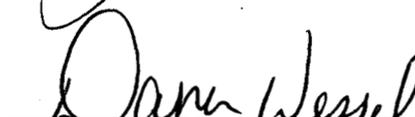
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**FERNALD CLOSURE PROJECT**

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LIST OF ACRONYMS AND ABBREVIATIONS

ASL	analytical support level
AWWT	Advanced Wastewater Treatment (Facility)
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	constituent of concern
D&D	Decontamination and Demolition
DOE	U.S. Department of Energy
DQO	Data Quality Objective
DSDP	Demolition, Soil and Disposal Project
EMS	Excavation Monitoring System
FACTS	Fernald Analytical Computerized Tracking System
FCP	Fernald Closure Project
FPA	Former Production Area
GPS	global positioning system
LAN	Local Area Network
µg/L	micrograms per Liter
MDL	minimum detection level
mg/kg	milligrams per kilogram
mg/L	milligrams per Liter
NaI	sodium iodide
OSDF	On-Site Disposal Facility
PCB	polychlorinated biphenyls
pCi/g	picoCuries per gram
PID	photoionization detector
ppm	parts per million
PSP	Project Specific Plan
QA/QC	Quality Assurance/Quality Control
RWP	Radiological Work Permit
SCQ	Sitewide CERCLA Quality Assurance Project Plan
SED	Sitewide Environmental Database
SEP	Sitewide Excavation Plan
SP-7	Soil Pile 7
SVOC	semi-volatile organic compound
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
V/FCN	Variance/Field Change Notice
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WAO	Waste Acceptance Organization
WPP	Waste Pits Project (formerly WPRAP - Waste Pits Remedial Action Project)
yd <sup>3</sup>	cubic yards

### 1.0 INTRODUCTION

This Project Specific Plan (PSP) describes additional data collection activities necessary to support the profile characterization for the Envirocare of Utah waste acceptance criteria (WAC) of the soils recently added to the western portion of Soil Pile 7 (SP-7, see Figure 1-1). SP-7 has recently been redesignated as Soil Pile AR6-006 but for continuity will be referred to as former SP-7 in this document. This sampling will be conducted to supplement data collected as part of a sampling effort in May of 2004 to characterize former SP-7 per the *Project Specific Plan for Sampling of Soil Pile 7 (SP-7) for Envirocare's Waste Acceptance Criteria* (20600-PSP-0008, Revision 0). Since that time additional excavated soil has been added to former SP-7. A portion of this additional soil has been piled on top of the portion that existed at the time of the earlier sampling. Along with soil placed above the former SP-7 soil pile that existed at the time of the previous sampling, further material has been added in the form of another distinct peak of soil to the east of the original pile. The two sections of soil piles have been physically delineated by fencing and the sampling effort described in this plan will apply ONLY to the segregated western portion of former SP-7. The eastern portion of former SP-7 will continue to operate as an active working stockpile for receiving excavated soils, while the western portion has been "frozen" in place, with no new material being added after a final topographic survey was conducted in early October prior to this sampling effort. Figure 1-2 contains the topographical map of the current profile of western former SP-7.

The additional soil in the western portion of former SP-7 will be sampled *in situ* by collecting soil core samples, versus the bin sampling approach used at the Waste Pits Project (WPP) for wastes and soils planned for disposal at Envirocare. This is the same methodology used in the May 2004 sampling of the original, underlying material in this portion of former SP-7. As with the original material, the additional material placed in former SP-7 was excavated from the source areas of 3B, 4B, the abandoned outfall line, as well as smaller volumes of filter cake residue from the Advanced Waste Water Treatment (AWWT) facility and various waste materials from waste management activities placed in the stockpile on the basis of being above the On-Site Disposal Facility (OSDF) WAC.

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 AND SCOPE

The purpose of this PSP is to provide specific direction regarding the sampling and analysis of additional soil materials staged at the western portion of the former SP-7 stockpile to obtain the required density of samples and analytical data to evaluate the soil pile against the Envirocare WAC.

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 Services procedures, Fluor Fernald work permits, Radiological Work Permit (RWP), penetration permits, and other applicable permits.

### 1.2 VARIANCE/FIELD CHANGE NOTICE (V/FCN) DOCUMENTATION

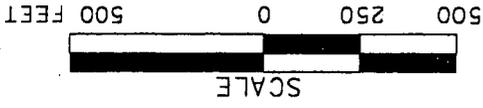
Field conditions may arise that warrant a different decision process for evaluating the additional soil on the western portion of former SP-7 for the Envirocare WAC. Factors that will be considered under special circumstances include safety of the workers, cost effectiveness, the need for a timely response, and impending weather conditions. In the event that a change in the characterization approach is needed, the Characterization Manager or designee must prepare a Variance/Field Change Notice (V/FCN). The completed V/FCN must contain the signatures of all affected organizations, which at a minimum includes the Project Manager, Characterization Manager, Waste Acceptance Organization (WAO), and Quality Assurance/Quality Control (QA/QC) but may also include Soil Sampling and/or the Analytical Program Manager, as appropriate. A time-critical variance may be obtained in cases where expedited approval is needed to avoid costly project delays. In the case of a time-critical variance, verbal or written approval (electronic mail is acceptable) must be received from the Characterization Manager and from QA/QC prior to implementing the variance. The completed approved V/FCN form must be completed within seven working days after the time-critical variance is approved. Changes to the PSP will also be noted in the applicable Field Activity Logs.

If a V/FCN is required, the Characterization Manager will document the change and requirements through the V/FCN process in accordance with Section 7.5 of the 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

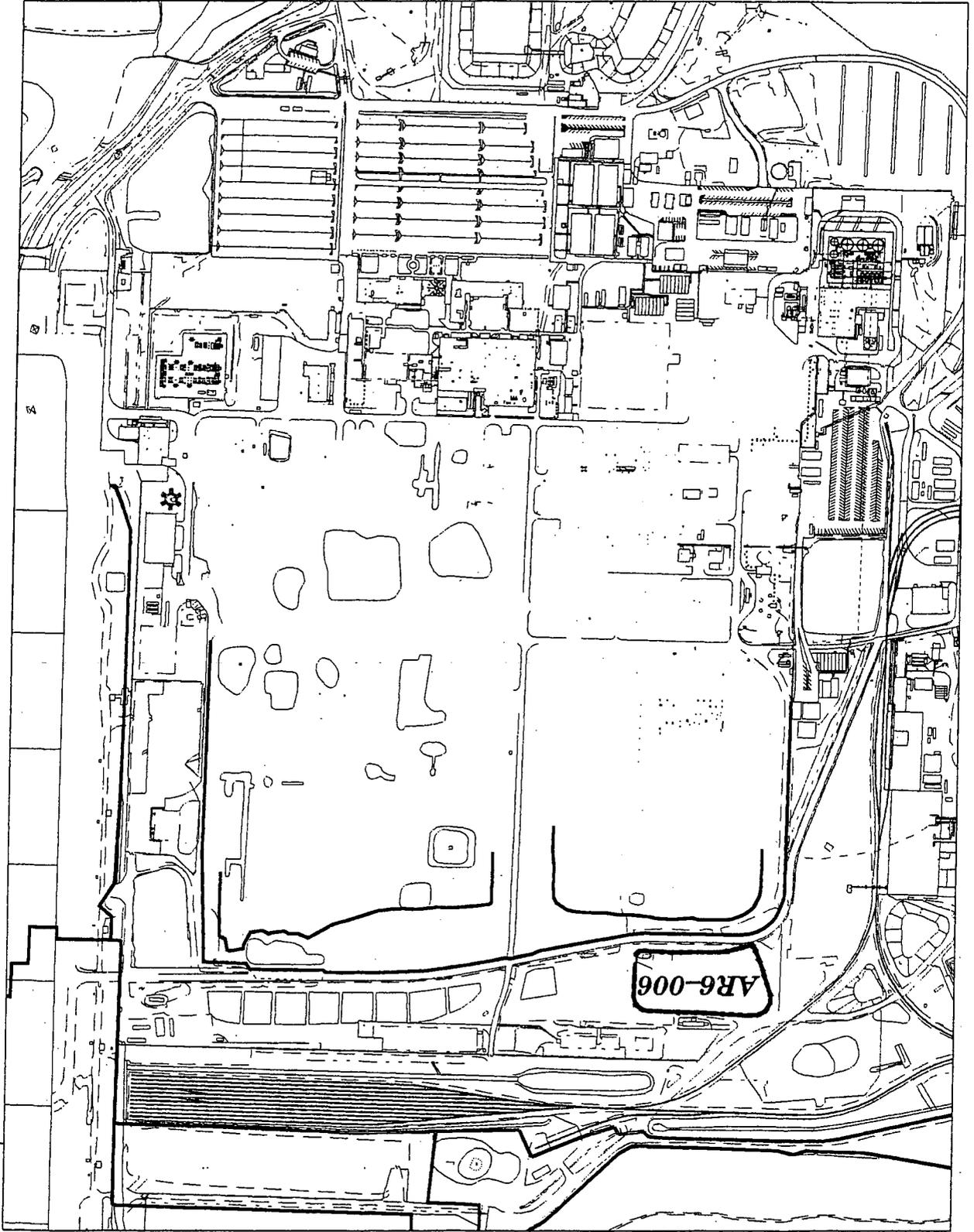
### 1.3 KEY PERSONNEL

Reference Section 1.4 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*. The WAO lead contact will be Joe Jacoboski for this PSP. Also, Dennis Dalga, the Project Manager of the WPP should be added to this list.

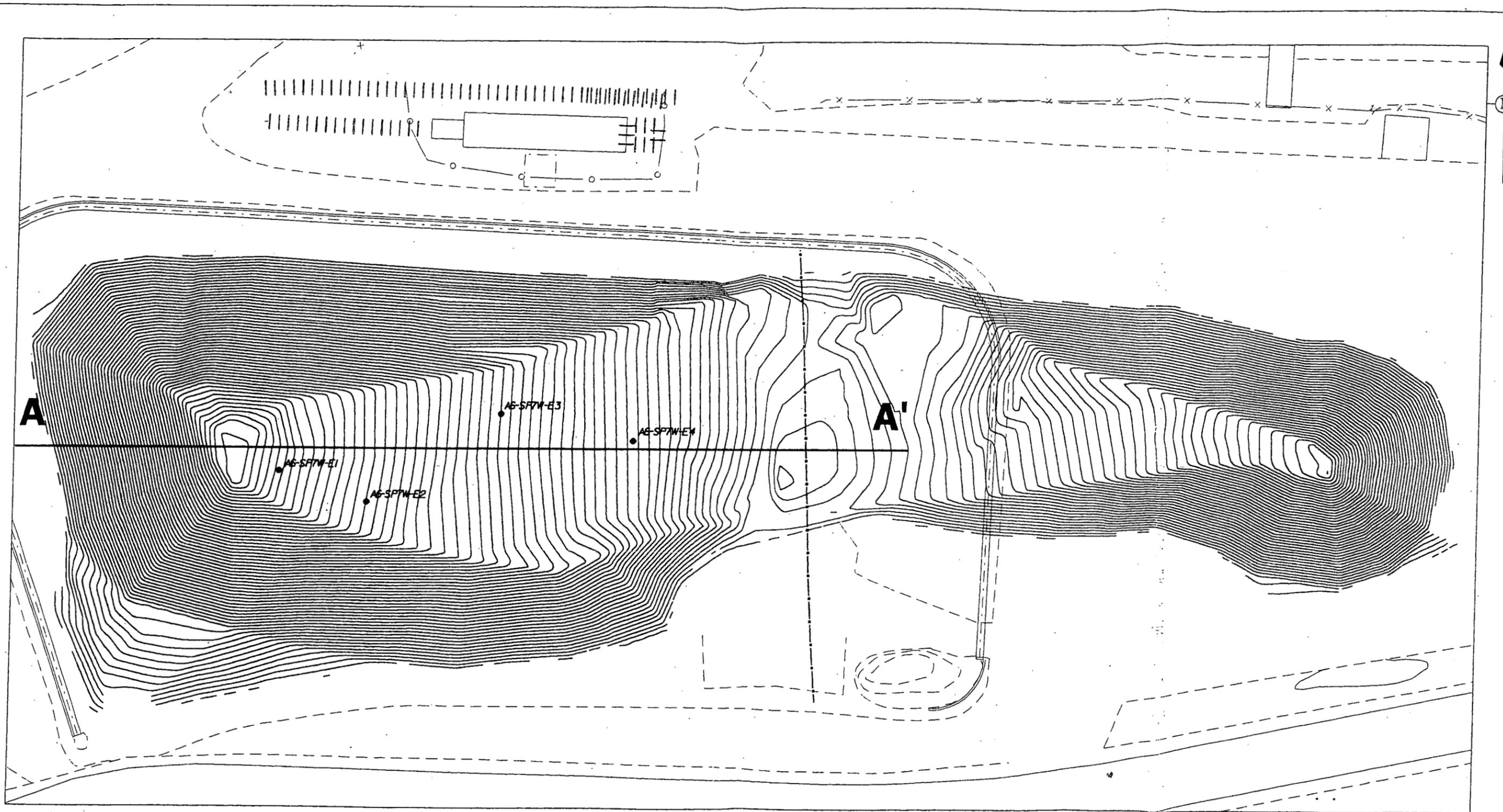
FIGURE 1-1. LOCATION OF AR6-006, FORMER SOIL PILE 7



LEGEND:



N



LEGEND:

- AG-SPTW-E4 ● BORING LOCATION
- SECTION LINE

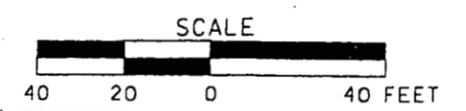


FIGURE 1-2. TOPOGRAPHIC MAP OF AR6-006, FORMER SP-7

## 2.0 AREA-SPECIFIC WORK

### 2.1 SP-7 BACKGROUND

SP-7, the stockpile designated for interim storage of above-OSDF WAC soil and debris, lies in Area 6 just north of the Area 3B boundary in the northwest corner of the Former Production Area (FPA). The entire pile consists of materials from throughout the FPA and the abandoned outfall line, as well as filter cake residue from the AWWT and various waste materials from waste management activities characterized as being above the OSDF WAC. Materials have been actively added to the pile since excavation of the Southern Waste Units began in 1999 and material has been removed or emptied from the area several times. Prior to May 2004, the WPP project periodically excavated and hauled material out of former SP-7 for eventual placement in their material handling bins where it was characterized for compliance with the Envirocare WAC before loadout into railcars.

This sampling plan, as well as the SP-7 Envirocare WAC Sampling PSP conducted in May 2004, is designed to provide data to support *in situ* characterization of the material added to the western portion of former SP-7 to meet the Envirocare WAC. This approach will facilitate railcar loadout of former SP-7 material without requiring sampling and analysis (except for certain selected geophysical parameters) of the soil material in the existing railcar loadout facility or prior to the anticipated direct railcar loadout at former SP-7 following scheduled decontamination and demolition (D&D) of the WPP project structures.

This sampling plan will cover sampling and analysis only of the additional soil material added to the now physically segregated "western" portion of former SP-7 since the May 2004 sampling effort. The material added since then is indicated on Figure 2-1, as determined from topographic surveys. Although the western portion of former SP-7 will no longer receive new soil material, the eastern portion consists exclusively of material added since the May 2004 sampling effort and is a working pile which continues to receive additional excavated material that is above the OSDF WAC.

### 2.2 FORMER SP-7 WAC ATTAINMENT SAMPLING DESIGN

The sampling activities conducted to evaluate the additional soil material on the western portion of former SP-7 for Envirocare's WAC 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*, which addresses the standard Geoprobe® soil core collection and sample handling methods.

2.2.1 Determination of WAC COCs

Compliance with the Envirocare WAC and the Waste Profile Record established for WPP must be demonstrated for any waste materials shipped from the FCP to Envirocare for disposal. Therefore, WPP's defined list of constituents of concern (COCs) is applicable to all former SP-7 soil material. Characterization for certain selected geophysical WAC will be based on previous soils placed in former SP-7 that have been processed through WPP and shipped to Envirocare and other geophysical parameters require measurement at the time of shipment.

The COCs are as follows:

**Radiological COCs**

- Uranium-234, Uranium-235, Uranium-238, Total Uranium
- Radium-226, Radium-228
- Thorium-230, Thorium-232
- Cesium-137
- Americium-241
- Neptunium-237
- Potassium-40
- Technetium-99

**Chemical COCs**

- PH
- Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, and Zinc by Toxicity Characteristic Leaching Procedure (TCLP) analysis.
- Total Polychlorinated Biphenyls (PCBs) (one sample total)
- If Photoionization Detector (PID) field screening limit of 1,472 parts per million (ppm) is exceeded, then analyze for the TCLP organics list.

**Geophysical Parameters**

- % Moisture (to be determined from radioanalytical process)

2.2.2 Sampling Design for Envirocare WAC

The prescribed sampling density applied to WPP bin sampling is one sample per 600 tons of material [or approximately 400 cubic yards (yds<sup>3</sup>)] based on the *WPRAP* (now WPP) *Sampling and Analysis Plan for Waste Pit Materials, Shaw E&I Project No. 773481 (Revision 1)*. This sampling density was utilized in the sampling design for the May 2004 characterization effort of former SP-7 and will be used for this

sampling and analysis effort as well. The additional volume added to the western portion of former SP-7 was calculated to be approximately 4400 yd<sup>3</sup> based on a topographic survey conducted on October 11, 2004. This volume translates into 11 radiological/metals [Target Analyte Lists (TALs) A and B) samples and one PCB (TAL C) sample required to align with the sampling density applied to typical WPP wastes since commencement of operations in 1999. Sample analytical requirements are specified in Table 2-1 and constituents for each TAL are listed in Appendix A.

Four boring locations are planned for sampling the additional material on western former SP-7 based on the depth and area of material added since the May 2004 sampling effort, the accessible surface area of the soil pile, the contours and/or pile thickness, and the feasibility of successful collection of the required number of samples in a timely manner without prolonged delays. The four boring locations are approximately evenly spaced across the surface of the pile where additional material has been placed. This design is intended to ensure that the samples collected are as representative as possible given the aforementioned constraints. The method of placement on the pile of the additional material to be sampled has involved spreading each load across the east-west inclined surface in thin layers. Therefore, this sampling design should ensure that the soil borings intercept materials that are representative of the material placed on the western portion of former SP-7 since the last sampling effort.

Based on four boring locations and the additional material thickness at each, one sample will be collected for every 4 vertical feet through the material to achieve the required 11 samples. However, the entire length of each soil core will be field screened for radiological levels and volatile organics to bias sampling to the areas of maximum field screening results. An interval of 4 feet allows for the most efficient sampling using the Geoprobe<sup>®</sup> device, since a standard sampling core is 4 feet long. Because the four sampling location depths are not a precise multiple of 4 feet, the lowest sample interval will be adjusted longer or shorter to end at the projected interface of previous/additional material. Figure 2-1 illustrates the locations of the four borings. The depth and number of samples planned from each location are listed in Appendix B. The deepest sample interval at location A6-SP7W-E1 will be 6 feet and the final interval at locations and A6-SP7W-E2, A6-SP7W-E3 and A6-SP7W-E4 will be 2.5, 5 and 4.5 feet respectively, to conclude the borings at the projected interface of the additional material placed over the material sampled previously.

### 2.2.3 Sampling Strategy

#### Organics Field Screening

A PID will be utilized to screen all soil cores for organics to determine if the established WPP Waste Profile limit of 1,472 ppm headspace reading is exceeded on any sample. The headspace screening and follow-on actions will be performed as follows:

- 1) Immediately after removal of the plastic core liner, the entire core will be surveyed with a PID.
- 2) The highest PID response interval will be placed into an 8 oz. glass jar for headspace analysis until it is half full; if there is no PID reading above background, then select a random interval.
- 3) Environmental Services Procedure EQT-04, Photoionization Detector will be followed for obtaining the level of volatile organics in the headspace with one exception. The minimum time allowed for the sample to set at ambient temperature (>60°F but not in direct sunlight) prior to the insertion of the PID shall be 30 minutes.
- 4) If the PID reading exceeds 1,472 ppm a lab sample will be collected for selected TCLP organics plus PCBs from the same depth interval via an additional (side-by-side) boring.

The WPRAP procedure for PID headspace screening has been reviewed and found to be sufficiently comparable to the EQT-04, Photoionization Detector procedure.

#### Radiological Field Screening

At each of the four soil boring locations, sample selection for radiological and metal analytes will be based solely on the beta/gamma survey meter readings of the soil core. For each sample interval, a radiological and metals sample will be collected from the 1-foot interval (or the length needed to achieve necessary sample mass) having the highest beta/gamma survey reading. Where applicable, the TAL A radiological sample should be collected from the section of core having the highest direct reading followed by the TAL B radiological/metals sample collection. To the extent practical, the beta/gamma survey must be done in a low-background area (e.g., vehicle) to be an effective method of high-biased sample selection. If no above-background levels are detected, then a composite sample will be collected from that interval.

Each boring will be completed to the designated depth below the surface unless refusal due to debris is encountered on repeated attempts. If refusal is encountered during advancement of the boring, at least two additional attempts should be made within 15 feet of the original boring location and documented in the Field Activity Log. Initial repositioning of the boring location will be done north or south of the refusal location, if at all possible, in order to stay at the approximate same elevation for sample depth

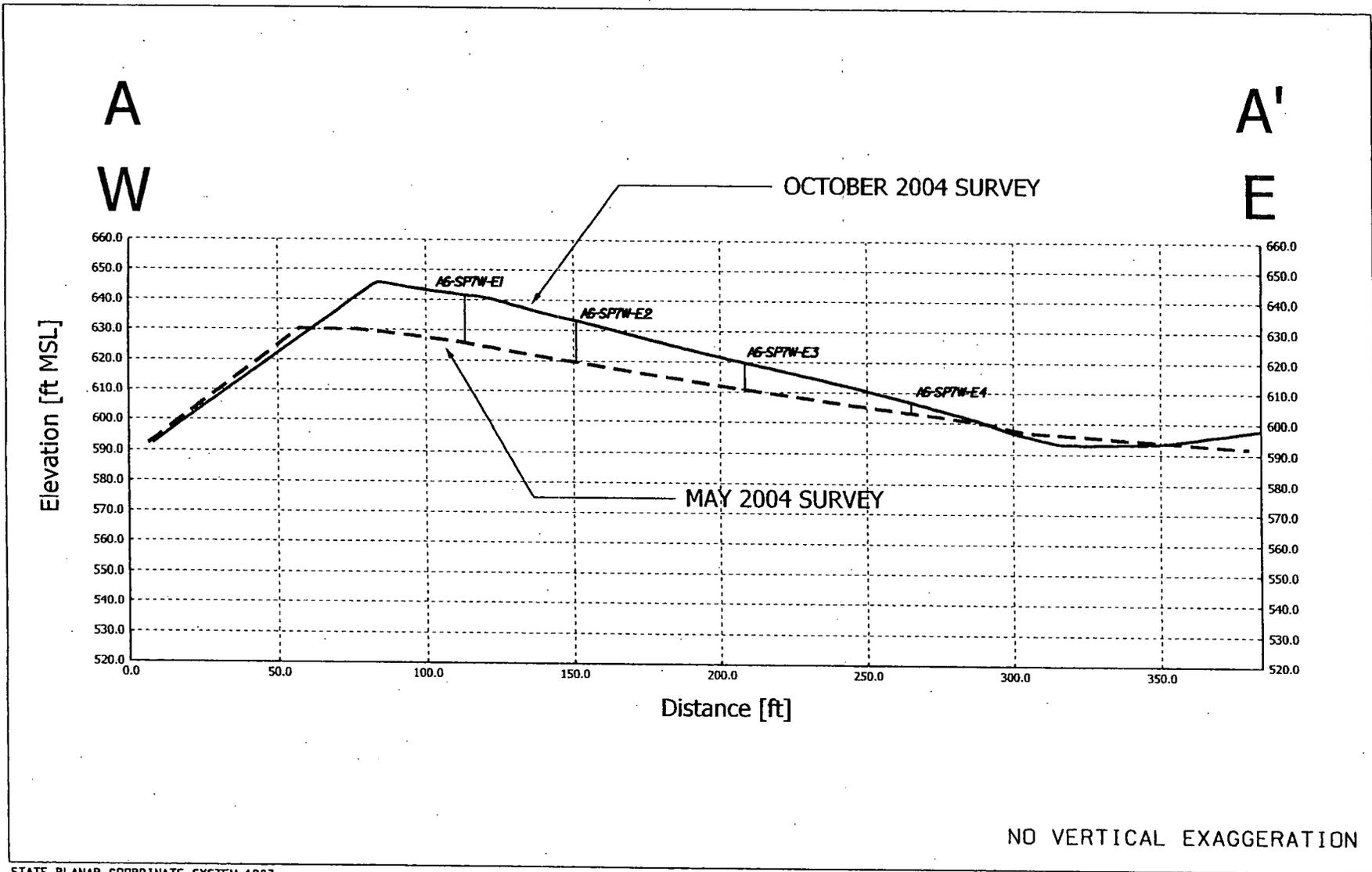
planning purposes. If it is necessary to relocate soil borings in excess of 15 feet from the original location, a V/FCN will be completed to document this change.

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

TAL/Analytes (ASL B)	Sample Matrix	Lab	Preservation	Holding Time	Container Type	Minimum Sample Mass (wet)*
<b>TAL A</b> Total Uranium (ppm) Uranium-234 (pCi/g) Uranium-235 (pCi/g) Uranium-238 (pCi/g) % Moisture	Solid	On-site	None	12 months	Appropriate Size Plastic or Glass	100 grams
<b>TAL B</b> Thorium-230 (pCi/g) Thorium-232 (pCi/g) Radium-226 (pCi/g) Radium-228 (pCi/g) Cesium-137 (pCi/g) Americium-241 (pCi/g) Neptunium-237 (pCi/g) Potassium-40 (pCi/g) Technetium-99 (pCi/g)  TCLP Metals (mg/L)  PH	Solid	Off-site	Cool 4°C (for metals)	12 months  6 months  NA	Appropriate Size Plastic or Glass	400 grams
<b>TAL C</b> Total PCBs (mg/kg) 1 sample only	Solid	Off-site	Cool 4°C	14 days	Appropriate Size Glass	60g
<b>TAL E</b> VOCs (mg/kg)	Solid	Off-site	Cool to 4° C	14 days	Glass w/Teflon-lined lid. Fill to minimize headspace	1 to 2, 60-mL
<b>TAL F</b> TCLP VOCs (mg/L)	Solid	Off-site	Cool to 4° C	14 days	Glass jar w/Teflon- lined lid. Fill to minimize headspace	1, 60mL (minimum size)
<b>TAL G</b> TCLP SVOC/Pests (mg/L)	Solid	Off-site	Cool to 4° C	14 days	1 Glass w/Teflon-lined lid.	200g Fill to minimize headspace
<b>TAL F</b> VOCs (µg/L)	Liquid (trip blank)	Off-site	Cool to 4° C H <sub>2</sub> SO <sub>4</sub> to pH<2	14 days	3-40 ml glass w/Teflon-lined lid.	120ml Fill to minimize headspace

\*One sample per release shipped to an off-site laboratory shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC" and will consist of three times the volume listed.

ASL - analytical support level  
µg/L - micrograms per Liter  
mg/kg - milligrams per kilogram  
mg/L - milligrams per Liter  
pCi/g - picoCuries per gram  
SVOC - semi-volatile organic compound



STATE PLANAR COORDINATE SYSTEM 1983  
 v: #2 fml 2 #dgn #sp7\_007.dgn  
 13-OCT-2004

**LEGEND:**

AG-SPTW-E1



BORING LOCATION

SCALE



50 25 0 50 FEET

FIGURE 2-1. CROSS-SECTION DEPICTION OF ADDITIONAL MATERIAL ON WESTERN AR6-006, FORMER SP-7

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### 3.0 INSTRUMENTATION AND TECHNIQUES

No real-time radiological scanning is required under this PSP; therefore, the required subsections for this section per 20300-PSP-0011 are not listed.

### 4.0 PREDESIGN – FIELD METHODS

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:

#### 4.1 REAL-TIME ACTIVITIES

Real-time activities are not applicable to this PSP.

#### 4.2 SAMPLE COLLECTION METHODS

Refer to Section 4.2 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

#### 4.3 PHYSICAL SAMPLE IDENTIFICATION

Refer to Section 4.3 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for general physical sample identification guidelines. A detailed description for identifying physical samples specific to Envirocare WAC sampling of former SP-7 follows:

A6-SP7W-E: Sample collected from western portion of Soil Pile 7 for Envirocare WAC Attainment

Location Designator: The Location Designator is a sequential boring number (e.g., 1, 2, etc.). Multiple boreholes at one sample location (due to subsurface refusal) will be identified with A, B, C suffix and so on (e.g., 1A, 1B)

Λ: The ^ is placed between the location designator and the depth interval. When used, the information to the left of this symbol identifies the boring number and allows the automatic assignment of the boring identification number to be transferred to the appropriate field/table in the Sitewide Environmental Database (SED). The ^ is not used if the sample does not have coordinates such as trip blanks, a “-” is used instead.

Depth Interval Designator: This number indicates the sequential interval of the sample from the soil pile surface. For example, “1” = 0 to 4-foot interval, “2” = 4 to 8-foot interval, and so on, as listed in the Appendix B sample identifiers.

W

Analysis Type:

M = metals  
R = radionuclides

P = Total PCBs

L = total VOCs (if required)  
TB = Trip Blank for VOCs (if organics analysis is required)  
TL = TCLP VOCs (if required)  
TS = TCLP SVOCs/Pesticides/Herbicides (if required)

An example sample ID would be A6-SP7W-E3^2-R, which represents a sample from the second 4-foot interval from boring location 3 to be analyzed for radiological constituents. Appendix B contains the sample identifiers and planar coordinates.

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**5.0 EXCAVATION CONTROL MEASURES**

Excavation control sampling or real-time radiological scanning is not required under this PSP for the western portion of the additional former SP-7 material, therefore the required subsections for this section per 20300-PSP-0011 are not applicable and are not listed.

**6.0 PRECERTIFICATION**

Precertification activities are not applicable to this PSP for the western portion of the additional former SP-7 material; therefore, the required subsections for this section per 20300-PSP-0011 are not listed.

**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

In addition to the requirements in the 20300-PSP-0008 document, each laboratory release will be reported as a full data package to enable the project to validate each release at ASL B. Field data package(s) will be validated.

7.2.2 Real-Time Data Verification/Validation (Not Applicable)

7.3 APPLICABLE DOCUMENTS, METHODS AND STANDARDS

7.4 SURVEILLANCES

7.5 IMPLEMENTATION AND DOCUMENTATION OF VARIANCE/FIELD CHANGE NOTICES (V/FCN)

**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.

The configuration of the western portion of former SP-7 warrants a discussion of personnel and vehicle safety measures required to be employed during sampling work associated with this PSP. Vehicles and sampling personnel will not perform soil borings within 12 feet of the top surface edge of any part of former SP-7 due to the potential for material slides or personnel falls.

**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 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 (NOT APPLICABLE)

11.2 PHYSICAL SAMPLES

5.781  
- 578

**APPENDIX A**  
**TARGET ANALYTE LISTS**

**APPENDIX A  
 TARGET ANALYTE LISTS**

**TAL A (on-site lab)**

Analyte	MDL (soil)
Total Uranium	8.2 mg/kg
Uranium-234	Best Achievable (pCi/g)
Uranium-235	Best Achievable (pCi/g)
Uranium-238	Best Achievable (pCi/g)
Percent Moisture	Per Radiological Method

MDL - minimum detection level

**TAL B (off-site lab)**

Analyte	MDL (soil)
Thorium-230	100 pCi/g
Thorium-232	1.0 pCi/g
Radium-226	1.0 pCi/g
Radium-228	1.0pCi/g
Cesium-137	1.0pCi/g
Technetium-99	2.9 pCi/g
Americium-241	1.0 pCi/g
Neptunium-237	1.0 pCi/g
Potassium-40	1.0 pCi/g
TCLP Arsenic	0.5 mg/L
TCLP Barium	10 mg/L
TCLP Cadmium	0.1 mg/L
TCLP Chromium	0.5 mg/L
TCLP Lead	0.5 mg/L
TCLP Mercury	0.02 mg/L
TCLP Selenium	0.1 mg/L
TCLP Silver	0.5 mg/L
TCLP Zinc	1.0 mg/L
PH	NA

**TAL C (off-site lab)**

Analyte	MDL (soil)
Total PCBs	0.01 mg/kg

## TAL E (off-site lab)

Analyte	MDL (mg/kg)
Acetone	*
Benzene	*
Bromodichloromethane	*
Bromoform	*
Bromomethane	*
2-Butanone	*
Carbon Tetrachloride	*
Chlorobenzene	*
Chloroethane	*
Chloroform	*
Chloromethane	*
Dibromochloromethane	*
1,2-Dichlorobenzene	*
1,3-Dichlorobenzene	*
1,4-Dichlorobenzene	*
1,2-Dibromoethane	*
Dichlorodifluoromethane	*
1,1-Dichloroethane	*
1,2-Dichloroethane	*
1,1-Dichloroethene	*
cis-1,2-Dichloroethene	*
trans-1,2-Dichloroethene	*
1,2-Dichloropropane	*
cis-1,3-Dichloropropene	*
trans-1,3-Dichloropropene	*
Ethylbenzene	*
Hexachlorobutadiene	*
2-Hexanone	*
Methylene Chloride	*
Styrene	*
1,1,2,2-Tetrachloroethane	*
Tetrachloroethene	*
Toluene	*
1,2,4-Trichlorobenzene	*
1,1,1-Trichloroethane	*
1,1,2-Trichloroethane	*
Trichloroethene	*

**TAL E (off-site lab)**  
**(continued)**

Analyte	MDL (mg/kg)
Trichlorofluoromethane	*
1,3,5-Trimethylbenzene	*
1,2,4-Trimethylbenzene	*
Vinyl Chloride	*
m&p-Xylene	*
o-Xylene	*

\* Best achievable

**TAL F (off-site lab)**

Analyte	MDL (mg/L)
1,2-Dichloroethane	0.05
2,4-dinitrotoluene	0.013 *
Benzene	0.05
Carbon Tetrachloride	0.05
Chlorobenzene	10
Chloroform	0.06
1,1-Dichloroethylene	0.07
Methyl ethyl ketone	20
Tetrachlorethylene	0.07
Trichloroethylene	0.05
Vinyl Chloride	0.02

\* Best achievable

TAL G (off-site lab)

Analyte	MDL (mg/L)
2,4,5-trichlorophenol	40
2,4,6-trichlorophenol	0.2
1,4-Dichlorobenzene	0.75
Hexachlorobenzene	0.013 *
Hexachlorobutadiene	0.05
Hexachloroethane	0.3
Methoxychlor	1.0
Nitrobenzene	0.2
Pentachlorophenol	10
o-Cresol	20
m-Cresol	20
p-Cresol	20
Chlorodane	0.003
2,4-D	1
Endrin	0.002
Heptachlor	0.0008
Lindane	0.04
Pyridine	0.5 *
Toxaphene	0.05
2,4,5-TP (Silvex)	0.1

\* Best Achievable

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**APPENDIX B**

**BORING TABLE FOR ADDITIONAL MATERIAL  
ON THE WESTERN PORTION OF FORMER SP-7**

**APPENDIX B**  
**BORING TABLE FOR ADDITIONAL MATERIAL**  
**ON THE WESTERN PORTION OF FORMER SP-7**

Boring ID	Depth Interval*	Sample ID	TAL	Northing	Easting	
A6-SP7W-E1	0-4'	A6-SP7W-E1^1-R	A	481946.61	1348549.85	
		A6-SP7W-E1^1-MR	B			
	4-8'	A6-SP7W-E1^2-R	A			
		A6-SP7W-E1^2-MR	B			
	8-12'	A6-SP7W-E1^3-R	A			
		A6-SP7W-E1^3-MR	B			
		12-14.5'	A6-SP7W-E1^4-R			A
			A6-SP7W-E1^4-MR			B
A6-SP7W-E2	0-4'	A6-SP7W-E2^1-R	A	481933.17	1348599.0	
		A6-SP7W-E2^1-MR	B			
	4-8'	A6-SP7W-E2^2-R	A			
		A6-SP7W-E2^2-MR	B			
	8-14'	A6-SP7W-E2^3-R	A			
		A6-SP7W-E2^3-MR	B			
A6-SP7W-E3	0-4'	A6-SP7W-E3^1-R	A	481971.73	1348654.95	
		A6-SP7W-E3^1-MR	B			
	4-8'	A6-SP7W-E3^2-R	A			
		A6-SP7W-E3^2-MR	B			
	8-13'	A6-SP7W-E3^3-R	A			
		A6-SP7W-E3^3-MR	B			
		A6-SP7W-E3^3-P	C			
A6-SP7W-E4	0-4.5'	A6-SP7W-E4^1-R	A	481960.11	1348711.79	
		A6-SP7W-E4^1-MR	B			

\*Actual sample interval will be smaller; as discussed in Section 2.2.3, the highest beta/gamma field screen interval, typically one foot, will be selected for analysis.