5849

# PROJECT SPECIFIC PLAN FOR PREDESIGN OF AREA 6 SUBAREA 1 (SUPPLEMENT TO 20300-PSP-0011)

## DEMOLITION, SOIL AND DISPOSAL PROJECT

**FERNALD CLOSURE PROJECT**
**FERNALD, OHIO**

**FEBRUARY 2005**

**U.S. DEPARTMENT OF ENERGY**

**20600-PSP-0006**
**REVISION 1**
**FINAL**

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**Revision 1**

**FINAL**

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**FERNALD CLOSURE PROJECT**

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## REVISION SUMMARY

| Revision | Date | Description of Revision |
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| Rev. 0 | 10-15-04 | Initial controlled issuance |
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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ASCOC | area-specific constituent of concern |
| ASL | analytical support level |
| ccpm | corrected counts per minute |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| COC | constituent of concern |
| DOE | U.S. Department of Energy |
| DQO | Data Quality Objectives |
| EMS | Excavation Monitoring System |
| FCP | Fernald Closure Project |
| FRL | final remediation level |
| FTF | Fire Training Facility |
| GC | gas chromatograph |
| GPC | gas proportional counter |
| HPGe | high-purity germanium (detector) |
| LSC | liquid scintillation counter |
| µg/kg | micrograms per kilogram |
| MDL | minimum detection level |
| mg/kg | milligrams per kilogram |
| MSL | mean sea level |
| MS | mass spectroscopy |
| NaI | sodium iodide |
| OMTA | OSDF Material Transfer Area |
| OSDF | On-Site Disposal Facility |
| OU | Operable Unit |
| pCi/g | picoCuries per gram |
| PID | photoionization detector |
| ppm | parts per million |
| PSP | Project Specific Plan |
| QA/QC | Quality Assurance/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 |
| SP | Soil Pile |
| SVOA | semi-volatile organic analysis |
| SWL | Solid Waste Landfill |
| TAL | Target Analyte List |
| V/FCN | Variance/Field Change Notice |
| VOA | volatile organic analysis |
| WAC | Waste Acceptance Criteria |

# 1.0 INTRODUCTION

This Project Specific Plan (PSP) describes the data collection activities necessary to support predesign of the northern portion of Area 6. The format of this PSP differs from that of previously submitted PSPs as this PSP only presents the specific information regarding this northern portion of Area 6 identified as Subarea 1. 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 (20600-PSP-0006) 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 northern portion of Area 6. This detailed information includes reasons for sample collection, sample locations, number of borings, depth intervals, and constituents of concern.

## 1.2 SCOPE

Remediation Area 6 lies in the northwest and northeast quadrants of the Former Production Area. See Figure 1-1. Due to the urgency to begin excavation in the northern portion of this area, Area 6 has been divided into four subareas, of which the northern portion (Subarea 1) will be addressed in this PSP. Figure 1-2 presents a graphic of this area. The areas included within the scope of this PSP (Subarea 1) are as follows: the On-Site Disposal Facility (OSDF) Material Transfer Area (OMTA) Bulk Debris Staging Area, the Railyard and vicinity, the Locomotive Maintenance Building, the Quonset Hut slab, and West OMTA. These areas collectively constitute the General Area and the Former Production Area to the north of Areas 3A and 3B.

As stated previously, this document does not cover the eastern (Subarea 2) or western (Subareas 3 and 4) portions of Area 6. These areas will be covered in subsequent supplemental PSPs. Additionally, this document does not cover the predesign activities for Waste Pits 1 through 6, Clear Well, Burn Pit, Operable Unit (OU) 1 Stockpile Area, Soil Pile (SP) 7 Area, Area 6 Phase I area, and the Fire Training Facility (FTF) area, as the predesign of these areas is covered or will be covered in other PSPs specific to these areas. The areas excluded from this PSP are indicated on Figure 1-2.

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.

## 1.3 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.* Due to revising this PSP, all existing V/FCNs are now included in Appendix C.

## 1.4 KEY PERSONNEL

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

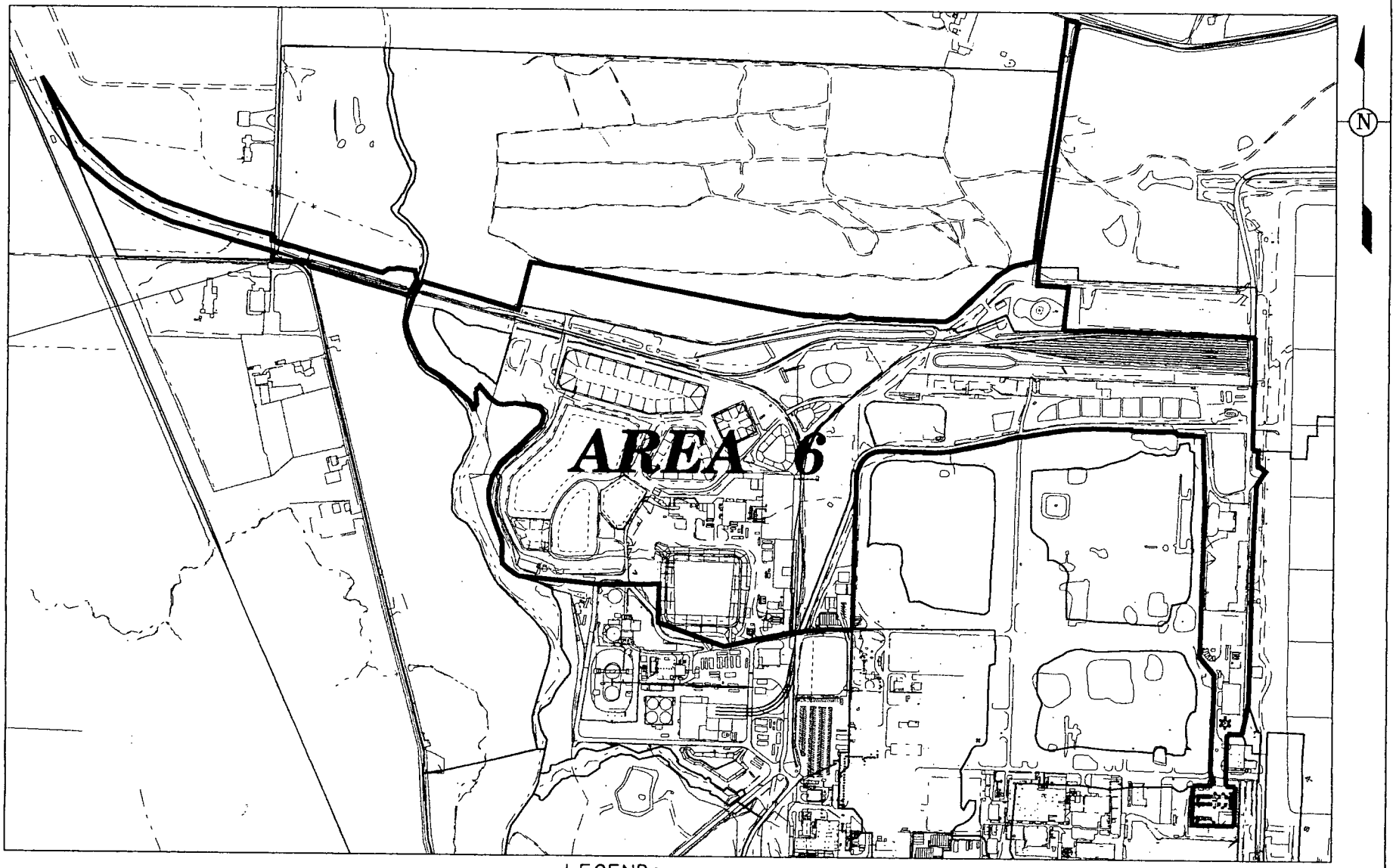


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FIGURE 1-1. AREA 6 LOCATION MAP

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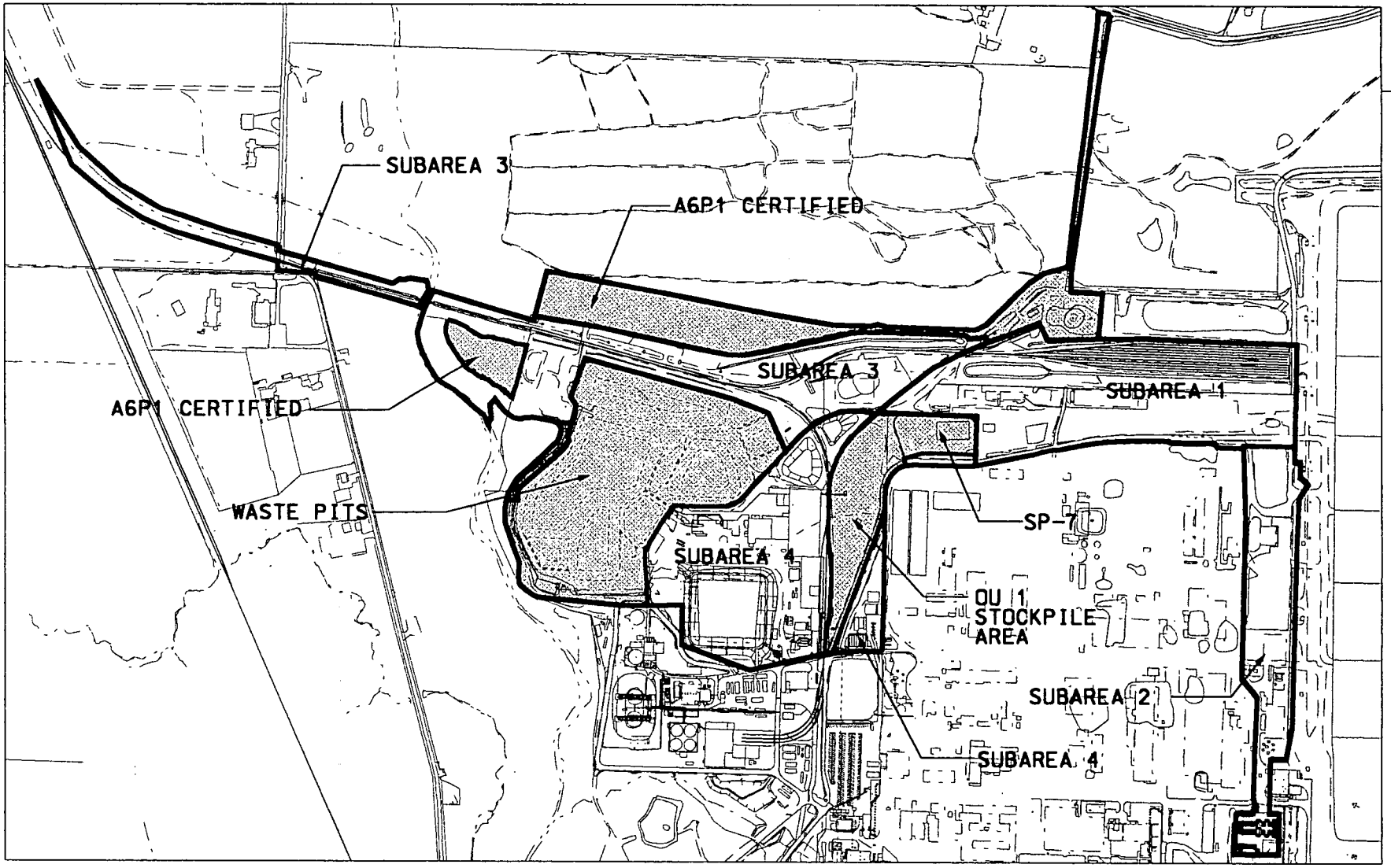


LEGEND:

AREA 6 AREAS INCLUDED IN PREVIOUSLY SUBMITTED DOCUMENTS

NOTE: SUBAREAS 2, 3 & 4 ARE NOT ADDRESSED IN THIS PSP

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FIGURE 1-2. AREA 6 REMEDIATION AREAS

# 2.0 AREA-SPECIFIC WORK

## 2.1 AREA 6

### 2.1.1 History

In general, the western portion of Area 6 is occupied by the OU1 Waste Pit area and associated facilities where pit material was excavated, dried, and loaded into railcars. Moving eastward, the perimeter of the Solid Waste Landfill (SWL) still requires further investigation now that all of the waste material has been removed. These areas will be addressed in a subsequent PSP. Additonally, the Waste Pits' footprints and berms are being investigated under separate PSPs.

The rail yard in the northeast portion of Area 6 was the rail car staging area for both loaded and empty rail cars. The area due east of the above-waste acceptance criteria (WAC) stockpile (formerly known as SP-7) is referred to as West OMTA along with the bulk debris staging area. These lie to the north of the former production area and were mainly used as staging areas for material that was disposed at the OSDF. Due north of the OMTA areas are the footprints of the KC-2 Warehouse and all three Quonset Huts. The KC-2 Warehouse was a storage facility for Resource Conservation Recovery Act (RCRA) waste. The easternmost Quonset Hut was a storage/treatment facility for soil contaminated with trichloroethene, 1,2-dichloroethene, and tetrachloroethene.

### 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 Area 6. This PSP supplements previous investigations for Area 6 and does not cover excavation control or certification sampling.

Area 6 has been divided into four subareas to facilitate the investigation of above-WAC and above-final remediation level (FRL) material (see Figure 1-2). Subarea 1 will be addressed in this PSP. Using the historical uranium data from this area, the uranium plume to be excavated was modeled. Where necessary, sampling will be performed to supplement this preliminary model to determine the excavation requirements. Section 2.1.2.3 details the rationale regarding sampling in this area.

All data collection activities will be consistent with the Sitewide Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Quality Assurance Plan (SCQ) and Section 3.1 of the Sitewide Excavation Plan (SEP). Physical samples will be collected in accordance with the Data Quality Objective (DQO) SL-048. Real-time data collection activities will be in accordance with DQOs SL-054 and SL-055. These DQOs are provided in the appendices of the General PSP (20300-PSP-0011). The data will be utilized to assess whether constituent of concern (COC) concentrations in these areas are lower than the FRLs outlined in the OU5 Record of Decision. The data collected under this plan will also be utilized to determine whether soil and soil-like material from the area meet the OSDF WAC, as defined in the SEP, the OSDF WAC Attainment Plan, and the Impacted Materials Placement Plan.

2.1.2.2 Determination of FRL COCs and WAC COCs

Using the Remedial Investigation/Feasibility Study (RI/FS) data for Area 6 and Table 2-7 of the SEP a list of FRL and WAC COCs was determined. The WAC and FRL COCs for Area 6 are listed in Sections 2.1.2.2.1 and 2.1.2.2.2 of this document, respectively. These identified COCs are outside of the preliminary uranium excavation model.

2.1.2.2.1 WAC COCs

The Area 6 data from the OU5 RI/FS were compared to the OSDF WAC to identify areas that exceed the OSDF WAC. Figure 2-1 details areas where historical sample results showed greater then OSDF WAC concentrations within Area 6. A list of these constituents is given below as the WAC COCs for Area 6.

- Uranium

2.1.2.2.2 FRL COCs

Within the scope of this PSP, the list of FRL area-specific constituent of concern (ASCOC) for Area 6 that will be analyzed is given below. These FRL ASCOCs will be investigated because the interval from the boring the results came from is not included in the modeled uranium plume for excavation. All other secondary above-FRL ASCOCs that have been identified within this area are within the modeled uranium plume for excavation and therefore will not be analyzed.

Primary COCs

- Radium-226
- Thorium-232
- Total Uranium

Secondary COCs

- Aroclor-1254
- Benzo(a)pyrene
- 1,2-Dichloroethene
- Dibenzo(a,h)anthracene
- Tetrachloroethene
- Trichloroethene

2.1.2.3 Sampling Strategy

The entire length of all soil cores collected will be surveyed with a beta/gamma (Geiger-Mueller) survey meter and results will be recorded as part of the field documentation. In the event that the field screening results exceed 450 corrected counts per minute (ccpm) from an interval that is not planned for collection for total uranium analysis, a sample to be analyzed for total uranium will be collected from this interval since this interval is considered potential above-WAC material.

2.1.2.3.1 WAC Sampling Strategy

Area 6 data was reviewed to determine above-WAC locations (see Figure 2-1). The total uranium above-WAC results from the historical borings are from the surface, which has been scraped since the original data was collected and in some cases the area may have been filled. The above-WAC soil most likely was removed during this excavation. Seven confirmatory borings will be placed at these locations in Subarea 1.

The original mean sea level (MSL) of the historical above-WAC interval will be the target of the top of the first 6-inch interval collected. The following two 6-inch intervals will then be collected. A sample will be collected from each of these three consecutive intervals and will be analyzed for total uranium. The boring table located in Appendix B describes the target intervals to be collected. The Table 2-1, below, summarizes the information from above-WAC borings in Subarea 1 of Area 6.

If soil is encountered prior to reaching the top of the first target interval (assumed to be soil fill), a sample from the first 6-inch interval of this soil will be collected and analyzed for total uranium. The three target intervals will then be collected as described in the preceding paragraph.

If the targeted interval is not soil, the boring will be advanced until soil is encountered. A sample will be collected from the first, second, and third intervals of soil encountered. Each of these three samples will be analyzed for total uranium.

If either of the above situations occur, this will be documented in the field paperwork.

**TABLE 2-1**
**AREA 6 CONFIRMATORY BORINGS AT HISTORICAL ABOVE-WAC BORINGS**

| WAC Boring ID | WAC interval (feet, from historical MSL) | WAC Result | Historical MSL | Present MSL | Boring ID |
|---|---|---|---|---|---|
| Zone 1-396 (Apex of railyard area) | 0-0.5 | 1155 mg/kg | 589.05 | 593.15 | A6-SA1-7 |
| HRD-02-2 (S Railyard, E side A6) | Unknown (assume 0-0.5') | 348 pCi/g | 595.8 | 591.55 | A6-SA1-26 |
| SP-19 (Eastern boundary) | 0-0.5 | 1379 mg/kg | 589.3 | 593.74 | A6-SA1-27 |
| SP-20 (Eastern boundary) | 0-0.5 | 1438 mg/kg | 589.5 | 594.43 | A6-SA1-28 |
| SP-23 (Eastern boundary) | 0-0.5 | 2908 mg/kg | 588.8 | 593.81 | A6-SA1-29 |
| SP-24 (Eastern boundary) | 0-0.5 | 1678 mg/kg | 589.2 | 601.43 | A6-SA1-30 |
| SP-72 (Eastern boundary) | 0-0.5 | 1078 mg/kg | 588.8 | 592.8 | A6-SA1-31 |

mg/kg – milligrams per kilogram
pCi/g – picoCuries per gram

2.1.2.3.2 FRL Sampling Strategy

A preliminary excavation model of the uranium plume in Subarea 1 was completed. In the section below, additional sampling required to supplement the preliminary model or discrete bounding within Subarea 1 is described.

Subarea 1

Figure 2-1 provides historical boring locations for this subarea. Figure 2-2 provides proposed boring locations as described in the paragraphs below. Twenty-five borings will be placed in Subarea 1 relating to above-FRL historical results.

Data used for the model from the borings on the east side of Subarea 1 did not have intervals directly below an above-FRL total uranium result that were analyzed. Therefore, the below-FRL results used in the model are from a deeper interval causing the model to project an excavation that may be excessively deep. The preliminary excavation model for Subarea 1 will be supplemented with data from additional borings to possibly reduce the extent of excavation on the east side of Subarea 1.

- Boring A6-SA1-3 will be placed in the OMTA Bulk Debris Staging Area and a sample will be collected from the 6 to 6.5-foot interval for total uranium analysis.

- Boring A6-SA1-4 will be placed further east of the above boring A6-SA1-3 in the OMTA Bulk Debris Staging Area and a sample will be collected from the 1 to 1.5-foot interval for total uranium analysis.

- Boring A6-SA1-5 will be placed outside of the OMTA Bulk Debris Staging Area on the east side and a sample will be collected from the 1 to 1.5-foot interval for total uranium analysis.

Data used for the model from the borings on the west side of Subarea 1 did not have intervals directly below an above-FRL total uranium result. The preliminary excavation model for Subarea 1 will be supplemented with data from borings to possibly reduce the extent of excavation.

- Boring CIS_SYSGEN_831 had an above-FRL total uranium result of 214 mg/kg from the 0 to 0.16-foot interval. Boring A6-SA1-20 will be placed at this same location. A sample to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval.

- Boring CIS_SYSGEN_835 had an above-FRL total uranium result of 161 mg/kg from the 0 to 0.16-foot interval. Boring A6-SA1-21 will be placed at this same location. A sample to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval.

- Boring CIS_SYSGEN_841 had an above-FRL total uranium result of 119 mg/kg from the 0.5 to 1-foot interval. Boring A6-SA1-22 will be placed at this same location. A sample to be analyzed for total uranium will be collected from the 1 to 1.5-foot interval.

- Boring CIS_SYSGEN_842 had an above-FRL total uranium result of 257 mg/kg from the 0 to 0.16-foot interval. Boring A6-SA1-23 will be placed at this same location. A sample to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval.

- Boring CIS_SYSGEN_846 had an above-FRL total uranium result of 230 mg/kg from the 0 to 0.16-foot interval. Boring A6-SA1-24 will be placed at this same location. A sample to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval.

- Boring CIS_SYSGEN_847 had an above-FRL total uranium result of 495 mg/kg from the 0 to 0.16-foot interval. Boring A6-SA1-25 will be placed at this same location. A sample to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval.

Isolated borings with above-FRL results within Subarea 1 will be supplemented with data from additional borings at these locations to discretely bound the area to be excavated. If any location is moved more than 3 feet, the revised coordinates will be documented with a V/FCN.

- Boring Zone 1-396 and boring N18-24W-706407 located in the Railyard will require additional sampling to discretely bound these points. Boring Zone 1-396 is being sampled to confirm the removal of above-WAC material per Section 2.1.2.3.1 due to a total uranium result of 1155 mg/kg in the 0 to 0.5-foot interval (see Figure 2-1). Above-FRL total uranium results were also detected in boring Zone 1-396 at 410 mg/kg in the 0.5 to 1-foot interval and 806 mg/kg in the 1 to 1.5-foot interval. In boring N18-24W-706407, above-FRL total uranium results of 170 mg/kg were detected in the 0 to 0.5-foot interval. This area was partially excavated during the construction of the Railyard and the contaminated soil was likely removed during this excavation. Additionally, during the construction of the Railyard, soil fill and stone were placed over the native soil.

  Confirmatory borings, boring ID A6-SA1-7 at boring Zone 1-396 and boring ID A6-SA1-33 at boring N18-24W-706407, will be advanced as discussed in Section 2.1.2.3.1, however, if the target of the top of the first 6-inch interval is soil, then four consecutive intervals will be collected. These four intervals will be sampled for total uranium to assess FRL conditions. If the targeted interval of this boring is not soil, the boring will be sampled as described in Section 2.1.2.3.1 (three intervals collected).

- An above-FRL result of 100 mg/kg for total uranium was detected in the 0 to 0.5-foot interval of boring Zone 2-265. The excavation model at boring Zone 2-265, located south of the Railyard, will be supplemented with total uranium data from a boring (A6-SA1-6) placed at the same location. Samples to be analyzed for total uranium will be collected from the 0 to 0.5-foot interval, from the 0.5 to 1-foot interval, and from the 3 to 3.5-foot interval of this boring to bound this location. Since this boring is on the outskirts of the modeled plume, the 3 to 3.5-foot interval will also be collected and analyzed for total uranium to confirm that total uranium has been adequately bounded in this boring.

- An above-FRL result of 1023 mg/kg for total uranium was detected in the 1 to 1.5-foot interval of boring Zone 1-385. The excavation model at boring Zone 1-385, located south of the Railyard apex, will be supplemented with a boring (A6-SA1-8) placed at the same location. Samples to be analyzed for total uranium will be collected from the 0 to 0.5-foot interval, from the 0.5 to 1-foot interval, and from the 3 to 3.5-foot interval of this boring to bound this location. Since this boring is on the outskirts of the modeled plume, the 3 to 3.5-foot interval will also be collected and analyzed for total uranium to confirm that total uranium has been adequately bounded in this boring.

- An above-FRL result of 163 mg/kg for total uranium was detected in the 0 to 0.5-foot interval of boring KC2-1. The excavation model at boring KC2-1, located at the southwest corner of the KC-2 Warehouse, will be supplemented with a boring (A6-SA1-9) placed at the same location. Samples to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval and from the 1 to 1.5-foot interval to bound this location.

- Boring KC2-2, located on the south perimeter of the KC-2 Warehouse, had unbound above-FRL concentrations of aroclor-1254 [1200 micrograms per kilograms (μg/kg)], benzo(a)pyrene (12000 μg/kg), and dibenzo(a,h)anthracene (3400 μg/kg) at the 0 to 0.5-foot interval. Boring A6-SA1-10 will be placed at this location. Samples to be analyzed for aroclor-1254, benzo(a)pyrene, and dibenzo(a,h)anthracene will be collected from the 0.5 to 1-foot interval and from the 1 to 1.5-foot interval to bound this location.

- An above-FRL result of 137 mg/kg for total uranium was detected in the 0 to 0.5-foot interval of boring KC2-3. The excavation model at boring KC2-3, located on the south perimeter of the KC-2 Warehouse, will be supplemented with a boring (A6-SA1-11) placed at the same location. Samples to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval and from the 1 to 1.5-foot interval to bound this location.

- An above-FRL result of 190 mg/kg for total uranium was detected in the 0 to 0.5-foot interval of boring KC2-4. The excavation model at boring KC2-4, located on the south perimeter of the KC-2 Warehouse, will be supplemented with a boring (A6-SA1-12) placed at the same location. Samples to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval and from the 1 to 1.5-foot interval.

- An above-FRL result of 208 mg/kg for total uranium was detected in the 0 to 0.5-foot interval of boring SMA-1. The excavation model at boring SMA-1, located in the OMTA Bulk Debris Staging Area, will be supplemented with a boring, A6-SA1-13, placed at the same location. Samples to be analyzed for total uranium will be collected from the 0.5 to 1-foot interval and from the 1 to 1.5-foot interval.

- An above-FRL result of 1.9 pCi/g for radium-226 was detected in the 0 to 0.5-foot interval of boring Zone 1-345, located south of the Quonset Hut slab. No further intervals were analyzed in this boring. A confirmatory boring (A6-SA1-19) will be placed at this location. Samples to be analyzed for radium-226 will be collected from the 0 to 0.5 and 0.5 to 1.0-foot intervals.

- An above-FRL result of 116 mg/kg for total uranium was detected in the 0 to 0.5-foot interval of boring A6-14. A below-FRL total uranium result of 2.38 mg/kg was obtained from 3 to 3.5-foot interval. The excavation model at boring A6-14, located in the West OMTA area, will be supplemented with a boring, A6-SA1-32, placed at the same location. Samples to be analyzed for total uranium will be collected from the 0.5 to 1 and 1 to 1.5-foot intervals. Since this boring is bounded by a below-FRL result from the 3 to 3.5-foot interval, a sample to be analyzed for total uranium does not require collection from this interval.

Additionally, in this subarea, data from two samples from two borings will be collected to verify potential false positive results.

- An above-FRL total thorium result of 23 mg/kg was detected in the 5 to 5.5-foot interval of boring 1272. The other total thorium results in this boring were identified as non-detects at the same value, 23 mg/kg. Most likely this above-FRL total thorium result was due to a typographical error related to the qualifier in the database. Since this above-FRL location is suspect, a confirmatory boring (A6-SA1-1) will be placed at this location. A sample collected from the 5 to 5.5-foot interval will be analyzed for thorium-232.

- An above-FRL total thorium result of 18 mg/kg was detected in the 10 to 10.5-foot interval of boring 41066. The other total thorium results in this boring were identified as non-detects at the same value, 18 mg/kg. Most likely this above-FRL total thorium result was due to a typographical error related to the qualifier in the database. Since this above-FRL location is suspect, a confirmatory boring (A6-SA1-2) will be placed at this location. A sample will be collected from the 10 to 10.5-foot interval and will be analyzed for thorium-232.

Five confirmatory samples will be collected at the perimeter of the Quonset Hut slab, two on the northern side (boring A6-SA1-14 and A6-SA1-15), two on the southern side (boring A6-SA1-17 and A6-SA1-18), and one on the east side (boring A6-SA1-16). The samples will be collected from the 0 to 0.5-foot interval, below any existing concrete, and will be analyzed for 1,2-dichloroethene, tetrachloroethene, and trichloroethene since soil staged on this slab in the past contained high levels of these COCs.

Other above-FRL points not labeled with a boring identification on Figure 2-1 are adequately bound in the model and do not require further investigation.

Other than the two borings, boring Zone 1-396 and boring N18-24W-706407, described in Section 2.1.2.3.2, Page 2-6, the borings located in the Railyard with above-FRL results at the surface interval, 0 to 0.5 feet, were bound at one foot with below-FRL data. The above-FRL material was likely removed when the surface soil of the Railyard area was scraped during its construction. Since these above-FRL intervals were adequately bound at depth, these borings do not require further investigation. Additionally, an evaluation of the existing soil surface topography under the Railyard as compared to the topography that existed prior to the construction of the Railyard will also be performed to demonstrate how much soil was actually removed. The results of this evaluation will be documented in the Integrated Remedial Design Package for Area 6.

Following the conclusion of railyard operations, the Railyard, Locomotive Maintenance Building, and vicinity will be evaluated via surface sampling and real-time scanning to determine the COCs for the area. Based on this COC evaluation, additional real-time scanning and surface sampling, documented with a variance, will be performed to ensure that this area has been adequately characterized.

See Appendix A for the Target Analyte Lists (TALs) and Appendix B for the boring table and sample identifiers. Table 2-2 addresses the physical sample volumes, preservation requirements, and analysis information.

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

| Analyte [a] | Method | Matrix | Holding Time | Preservative | Container [b] | Minimum Mass |
|---|---|---|---|---|---|---|
| Rads (TAL A, B, E) | Gamma Spec, Alpha Spec, LSC, or GPC | Solid | 12 Months | None | Plastic core liner or glass or polyethylene sample container | 400 g |
| PCB (TAL C) | GC | Solid | 14 days | Cool, 4°C | Glass with Teflon-lined lid | 120 g (360 g)[c] |
| SVOA (TAL D) | GC/MS | | | | | |
| VOA (TAL F) | GC/MS | Solid | 48 hours | Cool, 4°C | 3 x 1-Encore Sampler plus 1 x 2-oz jar for % moisture[c] | Each full Encore Sampler[c] will hold approx. 5 g |
| VOA (TAL F) | GC/MS | Liquid (Trip blank) | 14 days | Cool, 4°C $H_2SO_4$ pH<2 | 3 x 40-mL glass with Teflon-lined septa | 120 mL (no headspace) |

GC - gas chromatography
GPC - gas proportional counter
LSC - liquid scintillation counter
MS - mass spectroscopy
SVOA - semi-volatile organic analysis
VOA - volatile organic analysis

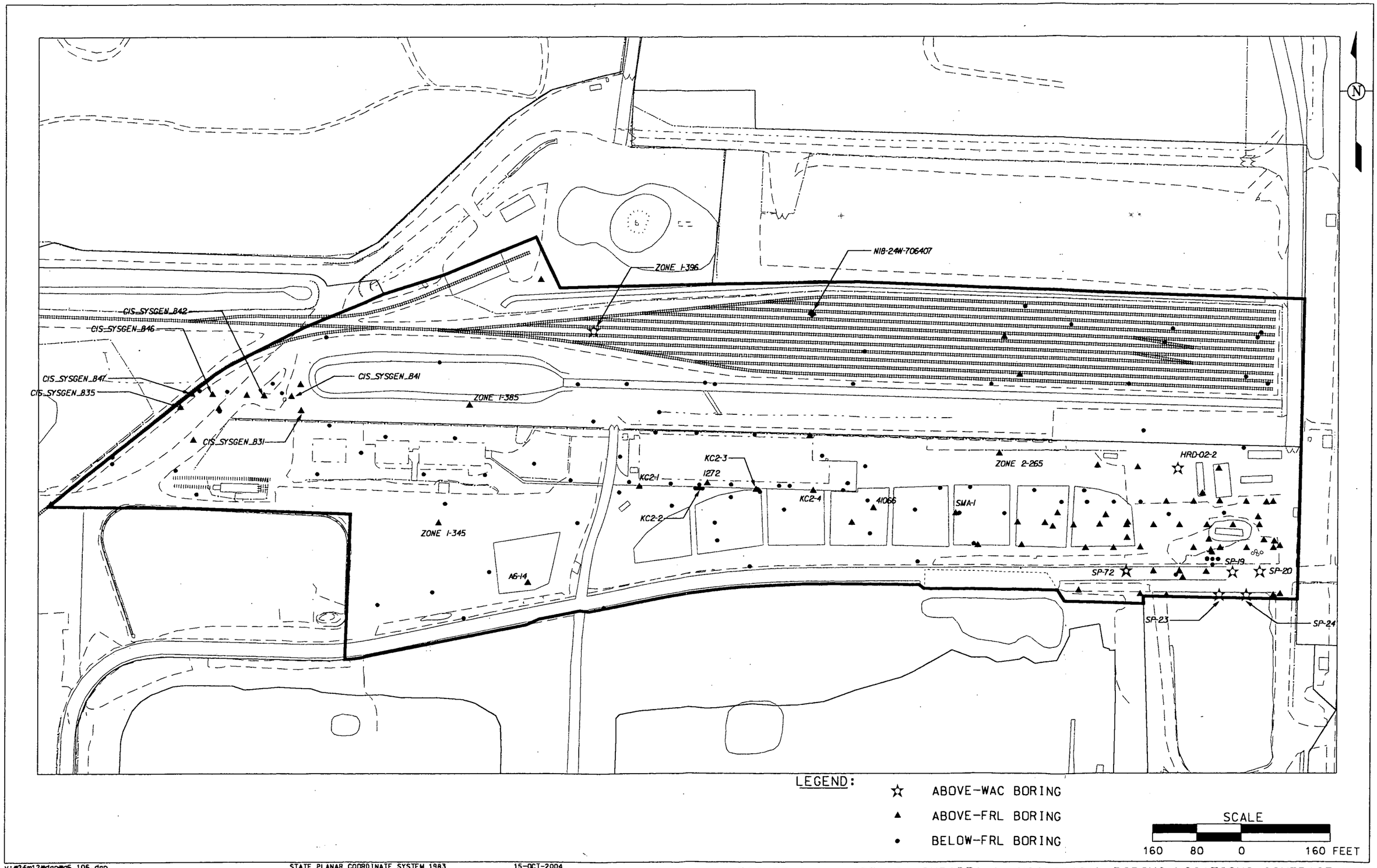
[a] Samples will be analyzed according to Analytical Support Level (ASL) B requirements but the minimum detection level may cause some analyses to be considered ASL E.

[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 (Quality Control (QC)".

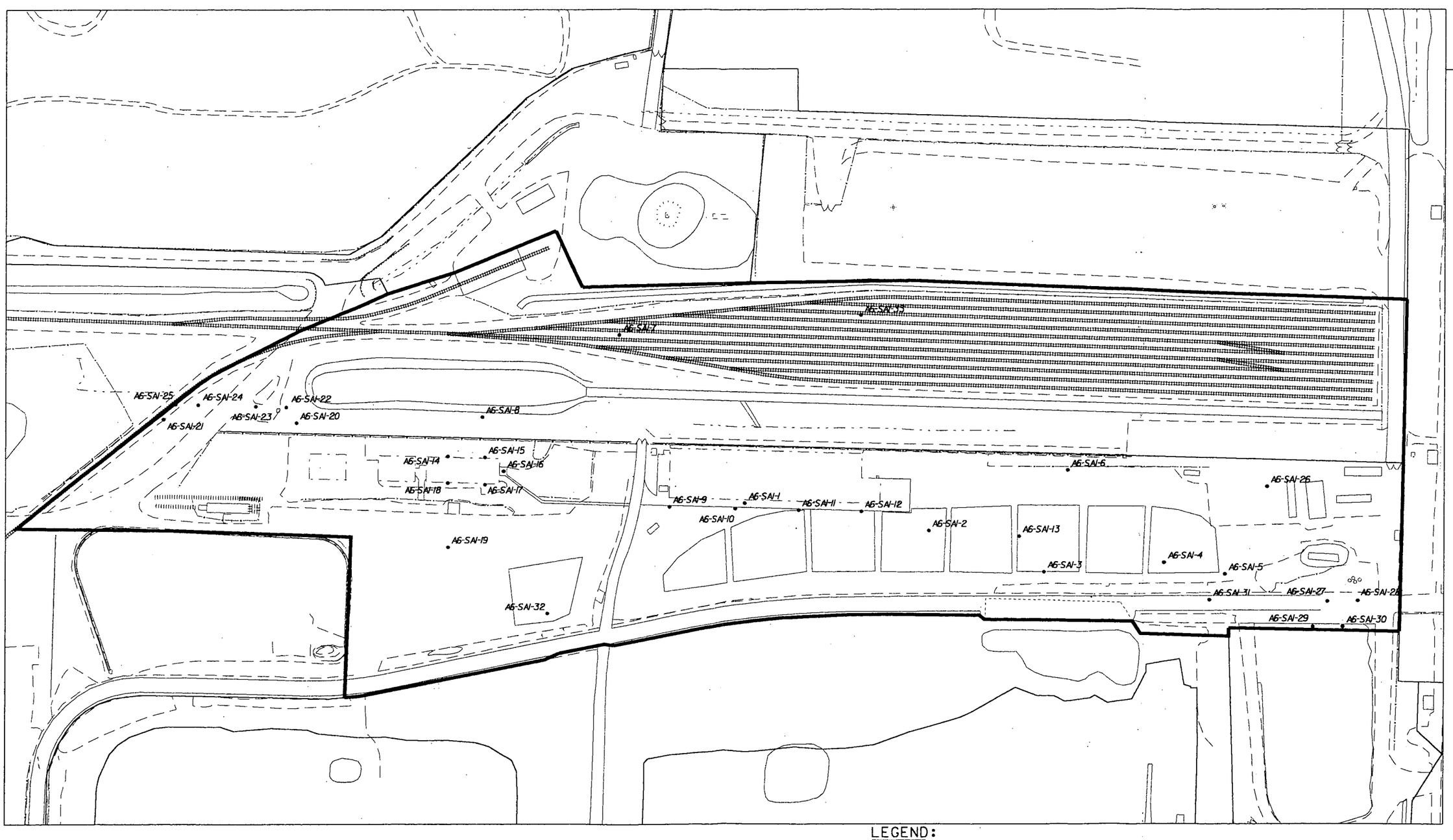
### 2.1.3 Precertification

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




v:\2fm12\dgn\a6_106.dgn STATE PLANAR COORDINATE SYSTEM 1983 15-OCT-2004

FIGURE 2-1. AREA 6, SUBAREA 1, HISTORICAL BORING LOCATIONS COVERAGE MAP




LEGEND:

• PROPOSED BORING

SCALE

160 80 0 160 FEET

v:\2fm12\dgn\a6_113.dgn STATE PLANAR COORDINATE SYSTEM 1983 15-OCT-2004

FIGURE 2-2. AREA 6, SUBAREA 1, 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

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 AREA 6 SUBAREA 1

# APPENDIX A
# TARGET ANALYTE LISTS FOR PREDESIGN OF AREA 6 SUBAREA 1

## TAL A
**Soil Analysis, Off-site, (ASL B)**

| Analyte (Rad) | WAC | FRL | Requested MDL |
|---|---|---|---|
| Total Uranium | 1030 mg/kg | 82 mg/kg | 8.2 mg/kg |

## TAL B
**Soil Analysis, Off-site, (ASL B)**

| Analyte (Rad) | FRL | Requested MDL |
|---|---|---|
| Thorium-232 | 1.5 pCi/g | 0.15 pCi/g |

## TAL C
**Soil Analysis, Off-site, (ASL B)**

| Analyte (PCB) | FRL | Requested MDL |
|---|---|---|
| Aroclor-1254 | 0.13 mg/kg | 0.013 mg/kg |

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

| Analyte (SVOA) | FRL | Requested MDL |
|---|---|---|
| Benzo(a)pyrene | 2 mg/kg | 0.2 mg/kg |
| Dibenzo(a,h)anthracene | 2 mg/kg | 0.2 mg/kg |

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

| Analyte (Rad) | FRL | Requested MDL |
|---|---|---|
| Radium-226 | 1.7 pCi/g | 0.17 pCi/g |

## TAL F
**Soil Analysis, Off-site, (ASL B)**

| Analyte (VOA) | FRL | Requested MDL |
|---|---|---|
| Tetrachloroethene (PCE) | 3.6 mg/kg | 0.36 mg/kg |
| Trichloroethene (TCE) | 25 mg/kg | 2.5 mg/kg |
| 1,2-Dichloroethene (DCE) (Total) | 0.160 mg/kg | 0.016 mg/kg |

MDL – minimum detection level

*If the WAC is lower than the established FRL, the MDL will be set at 10 percent of the OSDF WAC.

# APPENDIX B

## BORING TABLE AND SAMPLE IDENTIFIERS FOR PREDESIGN OF AREA 6 SUBAREA 1

# APPENDIX B
## BORING TABLE AND SAMPLE IDENTIFIERS FOR PREDESIGN OF AREA 6 SUBAREA 1

| Northing | Easting | Boring | Sample Identification | Depth to Sample, feet | Analysis |
|---|---|---|---|---|---|
| 482100.48 | 1349519.687 | A6-SA1-1 | A6-SA1-1^11-R | 5-5.5 | TAL B |
| 482055.583 | 1349820.237 | A6-SA1-2 | A6-SA1-2^22-R | 10.5-11 | TAL B |
| 481988.075 | 1350008.847 | A6-SA1-3 | A6-SA1-3^13-R | 6-6.5 | TAL A |
| 482003.59 | 1350205.966 | A6-SA1-4 | A6-SA1-4^3-R | 1-1.5 | TAL A |
| 481984.418 | 1350303.966 | A6-SA1-5 | A6-SA1-5^3-R | 1-1.5 | TAL A |
| | | | A6-SA1-5^4-R | 1.5-2 | TAL A |
| 482153.917 | 1350047.465 | A6-SA1-6 | A6-SA1-6^4-R | 1.5-2 | TAL A |
| | | | A6-SA1-6^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-6^10-R | 4.5-5 | TAL A |
| 482375.41 | 1349310.964 | A6-SA1-7 | A6-SA1-7^4-R | 1.5-2 | TAL A |
| | | | A6-SA1-7^9-R | 4-4.5 | TAL A |
| | | | A6-SA1-7^10-R | 4.5-5 | TAL A |
| | | | A6-SA1-7^11-R | 5-5.5 | TAL A |
| | | | A6-SA1-7^12-R | 5.5-6 | TAL A |
| 482241.606 | 1349086.567 | A6-SA1-8 | A6-SA1-8^1-R | 0-0.5 | TAL A |
| | | | A6-SA1-8^2-R | 0.5-1 | TAL A |
| | | | A6-SA1-8^7-R | 3-3.5 | TAL A |
| 482094.908 | 1349393.927 | A6-SA1-9 | A6-SA1-9^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-9^6-R | 2.5-3 | TAL A |
| 482091.45 | 1349504.077 | A6-SA1-10 | A6-SA1-10^3-PS | 1-1.5 | TAL C, D |
| | | | A6-SA1-10^4-PS | 1.5-2 | TAL C, D |
| 482089.111 | 1349607.097 | A6-SA1-11 | A6-SA1-11^3-R | 1-1.5 | TAL A |
| | | | A6-SA1-11^4-R | 1.5-2 | TAL A |
| 482087.102 | 1349709.607 | A6-SA1-12 | A6-SA1-12^3-R | 1-1.5 | TAL A |
| | | | A6-SA1-12^4-R | 1.5-2 | TAL A |
| 482046.125 | 1349968.396 | A6-SA1-13 | A6-SA1-13^4-R | 1.5-2 | TAL A |
| | | | A6-SA1-13^5-R | 2-2.5 | TAL A |
| 482177.58 | 1349030.02 | A6-SA1-14 | A6-SA1-14^1-L | 0-0.5 | TAL F |
| 482175.97 | 1349091.03 | A6-SA1-15 | A6-SA1-15^1-L | 0-0.5 | TAL F |
| 482153.27 | 1349122.29 | A6-SA1-16 | A6-SA1-16^1-L | 0-0.5 | TAL F |
| 482131.34 | 1349091.03 | A6-SA1-17 | A6-SA1-17^1-L | 0-0.5 | TAL F |
| 482134.11 | 1349030.02 | A6-SA1-18 | A6-SA1-18^1-L | 0-0.5 | TAL F |
| 482029.403 | 1349030.969 | A6-SA1-19 | A6-SA1-19^4-R | 1.5-2 | TAL E |
| | | | A6-SA1-19^5-R | 2-2.5 | TAL E |
| 482232.382 | 1348781.988 | A6-SA1-20 | A6-SA1-20^1-R | 0-0.5 | TAL A |
| 482238.379 | 1348563.068 | A6-SA1-21 | A6-SA1-21^5-R | 2-2.5 | TAL A |
| 482257.872 | 1348764.677 | A6-SA1-22 | A6-SA1-22^4-R | 1.5-2 | TAL A |
| 482259.241 | 1348714.697 | A6-SA1-23 | A6-SA1-23^7-R | 3-3.5 | TAL A |
| 482261.81 | 1348620.738 | A6-SA1-24 | A6-SA1-24^3-R | 1-1.5 | TAL A |
| 482262.85 | 1348582.748 | A6-SA1-25 | A6-SA1-25^10-R | 4.5-5 | TAL A |
| 482127.148 | 1350371.903 | A6-SA1-26 | A6-SA1-26^4-R | 1.5-2 | TAL A |
| | | | A6-SA1-26^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-26^6-R | 2.5-3 | TAL A |

## APPENDIX B
## BORING TABLE AND SAMPLE IDENTIFIERS FOR PREDESIGN OF AREA 6 SUBAREA 1

| Northing | Easting | Boring | Sample Identification | Depth to Sample, feet | Analysis |
|---|---|---|---|---|---|
| 481940.42 | 1350470.966 | A6-SA1-27 | A6-SA1-27^9-R | 4-4.5 | TAL A |
| | | | A6-SA1-27^13-R | 6-6.5 | TAL A |
| | | | A6-SA1-27^14-R | 6.5-7 | TAL A |
| | | | A6-SA1-27^15-R | 7-7.5 | TAL A |
| 481941.421 | 1350519.966 | A6-SA1-28 | A6-SA1-28^?-R | ?-? (1st interval fill) | TAL A |
| | | | A6-SA1-28^12-R | 5.5-6 | TAL A |
| | | | A6-SA1-28^13-R | 6-6.5 | TAL A |
| | | | A6-SA1-28^14-R | 6.5-7 | TAL A |
| 481899.419 | 1350446.967 | A6-SA1-29 | A6-SA1-29^?-R | ?-? (1st interval fill) | TAL A |
| | | | A6-SA1-29^14-R | 6.5-7 | TAL A |
| | | | A6-SA1-29^15-R | 7-7.5 | TAL A |
| | | | A6-SA1-29^16-R | 7.5-8 | TAL A |
| 481899.42 | 1350495.966 | A6-SA1-30 | A6-SA1-30^?-R | ?-? (1st interval fill) | TAL A |
| | | | A6-SA1-30^15-R | 7-7.5 | TAL A |
| | | | A6-SA1-30^16-R | 7.5-8 | TAL A |
| | | | A6-SA1-30^17-R | 8-8.5 | TAL A |
| 481942.418 | 1350278.967 | A6-SA1-31 | A6-SA1-31^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-31^9-R | 4-4.5 | TAL A |
| | | | A6-SA1-31^10-R | 4.5-5 | TAL A |
| | | | A6-SA1-31^11-R | 5-5.5 | TAL A |
| 481921.4 | 1349192.97 | A6-SA1-32 | A6-SA1-32^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-32^6-R | 2.5-3 | TAL A |
| 482407.878 | 1349706.507 | A6-SA1-33 | A6-SA1-33^4-R | 1.5-2 | TAL A |
| | | | A6-SA1-33^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-33^6-R | 2.5-3 | TAL A |
| | | | A6-SA1-33^7-R | 3-3.5 | TAL A |

# APPENDIX C

# VARIANCE/FIELD CHANGE NOTICES TO 20600-PSP-0006

# VARIANCE/FIELD CHANGE NOTICE LOG FOR PROJECT SPECIFIC PLAN FOR PREDESIGN OF AREA 6 SUBAREA 1 (SUPPLEMENT TO 20300-PSP-0011)

| Variance No. | Variance Date | Variance Description | Significant? (Y or N) | Date Signed | Date Distributed | EPA/OEPA Approval |
|---|---|---|---|---|---|---|
| 20600-PSP-0006-01 | 10/27/04 | Variance to document the decrease in minimum volume for TAL A, B, and E from 400g to 300g (reference Table 2-2) and documents changes needed as a result of updated MSLs obtained from the recent survey of the actual boring locations. Previous MSL estimates were based on the most recent LIDAR survey. | N | 10/29/04 | 10/29/04 | NA |
| 20600-PSP-0006-02 | 11/8/04 | Variance to collect samples to document that all above-WAC technetium-99 contamination from above-WAC material spill in area north of SP7 was removed when the area was scraped following the spill. | N | 11/8/04 | 11/8/04 | NA |
| 20600-PSP-0006-03 | 11/18/04 | Variance to collect samples to document that all above-WAC technetium-99 contamination from above-WAC material spill in area north of SP7 was removed when the area was scraped following the spill. | N | 11/18/04 | 11/23/04 | NA |
| 20600-PSP-0006-04 | 11/23/04 | Variance to collect samples to bound above-WAC total uranium results at two borings in Area 6 Subarea 1. | N | 11/23/04 | 11/29/04 | NA |
| 20600-PSP-0006-05 | 12/21/04 | Physical sampling is required to expedite the bounding of the above-WAC material in the area north of the OMTA Soil Staging Area in Area 6 Subarea 1. | N | 12/21/04 | 1/6/05 | NA |
| 20600-PSP-0006-06 | 1/11/05 | Physical sampling is required to expedite the bounding of the above-WAC material in the area north of the OMTA Soil Staging Area in Area 6 Subarea 1. | N | 1/11/05 | 1/12/05 | NA |
| 20600-PSP-0006-07 | 2/14/05 | Variance to document changes needed as a result of updated "Sample Identification" and "Depth to Sample, feet" columns in the Boring Table located in Appendix B of the PSP. | N | 2/14/05 | 2/15/05 | NA |



5849

5849

| VARIANCE / FIELD CHANGE NOTICE | Significant? (Yes or No): NO | V/F: 20600-PSP-0006-01 |
|---|---|---|
| VBS NO.: PROJECT/DOCUMENT/ECDC #20600-PSP-0006 REV 0 | | Page: 1 of ~~3~~ 4 |
| ROJECT TITLE: PSP for Predesign of Area 6 Subarea 1 (Supplement to 20300-PSP-0011) | | Date: 10/27/04 |

**ARIANCE / FIELD CHANGE NOTICE (Include justification):**

his V/FCN documents the decrease in minimum volume for TAL A, B, and E from 400g to 300g (reference Table 2-2), as well as, ocuments the changes needed as a result of updated mean sea levels (MSLs) obtained from the recent survey of the actual boring cations. (Previous MSL estimates were based on the most recent LIDAR survey.) This updated MSL information changed the "Present SL" information listed in Table 2-1 and changed the "Depth to Sample" and "Sample Identification" for several borings listed in the oring Table located in Appendix B. The information changed as a result of the updated MSL is bolded in Table 2-1 below and in the oring Table attached (Attachment 1).

See Attachment 2

**TABLE 2-1**
**AREA 6 CONFIRMATORY BORINGS AT HISTORICAL ABOVE-WAC BORINGS**

| WAC Boring ID | WAC interval (feet, from historical MSL) | WAC Result | Historical MSL | Present MSL | Boring ID |
|---|---|---|---|---|---|
| Zone 1-396 (Apex of railyard area) | 0-0.5 | 1155 mg/kg | 589.05 | 593.15 | A6-SA1-7 |
| HRD-02-2 (S Railyard, E side A6) | Unknown (assume 0-0.5') | 348 pCi/g | 595.8 | **591.27** | A6-SA1-26 |
| SP-19 (Eastern boundary) | 0-0.5 | 1379 mg/kg | 589.3 | **594.34** | A6-SA1-27 |
| SP-20 (Eastern boundary) | 0-0.5 | 1438 mg/kg | 589.5 | **594.77** | A6-SA1-28 |
| SP-23 (Eastern boundary) | 0-0.5 | 2908 mg/kg | 588.8 | **595.37** | A6-SA1-29 |
| SP-24 (Eastern boundary) | 0-0.5 | 1678 mg/kg | 589.2 | **596.20** | A6-SA1-30 |
| SP-72 (Eastern boundary) | 0-0.5 | 1078 mg/kg | 588.8 | **592.91** | A6-SA1-31 |

/kg – milligrams per kilogram
i/g – picoCuries per gram

**stification:**

is V/FCN documents the decrease in minimum volume for TAL A, B, and E from 400g to 300g (reference Table 2-2) and documents nges needed as a result of updated MSLs obtained from the recent survey of the actual boring locations. Previous MSL estimates were ed on the most recent LIDAR survey.

QUESTED BY: Catherine Payne Date: 10/27/04

| D | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|---|---|---|---|---|---|
| | QUALITY ASSURANCE: R. Foske | 10/29/04 | X | PROJECT MANAGER: D.D. Quick | 10/27/04 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: F. Miller | 10/27/04 |
| | ANALYTICAL CUSTOMER SUPPORT: | 10/29/04 | | RTIMP Manager | |
| | WRO | 10/28/04 | X | Sampling Manager: J. Buturlage | 10/27/04 |

RIANCE/FCN APPROVED [X ]YES [ ]NO REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

| | | |
|---|---|---|
| ECT MANAGER: | DOCUMENT CONTROL: Jeannie Rosser | OTHER: |
| ITY ASSURANCE: | CHARACTERIZATION MANAGER: Frank Miller | OTHER: |
| MANAGER: | OTHER: | OTHER: |

ATTACHMENT 1
APPENDIX B
BORING TABLE AND SAMPLE IDENTIFIERS FOR PREDESIGN OF AREA 6 SUBAREA 1

| Northing | Easting | Boring | Sample Identification | Depth to Sample, feet | Analysis |
|---|---|---|---|---|---|
| 482100.48 | 1349519.687 | A6-SA1-1 | **A6-SA1-1^11-R** | **5-5.5** | TAL B |
| 482055.583 | 1349820.237 | A6-SA1-2 | **A6-SA1-2^22-R** | **10.5-11** | TAL B |
| 481988.075 | 1350008.847 | A6-SA1-3 | A6-SA1-3^13-R | 6-6.5 | TAL A |
| 482003.59 | 1350205.966 | A6-SA1-4 | A6-SA1-4^3-R | 1-1.5 | TAL A |
| 481984.418 | 1350303.966 | A6-SA1-5 | A6-SA1-5^3-R | 1-1.5 | TAL A |
| 482153.917 | 1350047.465 | A6-SA1-6 | A6-SA1-6^2-R | 0.5-1 | TAL A |
| | | | A6-SA1-6^3-R | 1-1.5 | TAL A |
| | | | A6-SA1-6^8-R | 3.5-4 | TAL A |
| 482375.41 | 1349310.964 | A6-SA1-7 | A6-SA1-7^?-R | ?-? (1st interval fill) | TAL A |
| | | | A6-SA1-7^9-R | 4-4.5 | TAL A |
| | | | A6-SA1-7^10-R | 4.5-5 | TAL A |
| | | | A6-SA1-7^11-R | 5-5.5 | TAL A |
| | | | A6-SA1-7^12-R | 5.5-6 | TAL A |
| 482241.606 | 1349086.567 | A6-SA1-8 | A6-SA1-8^1-R | 0-0.5 | TAL A |
| | | | A6-SA1-8^2-R | 0.5-1 | TAL A |
| | | | A6-SA1-8^7-R | 3-3.5 | TAL A |
| 482094.908 | 1349393.927 | A6-SA1-9 | **A6-SA1-9^3-R** | **1-1.5** | TAL A |
| | | | **A6-SA1-9^4-R** | **1.5-2** | TAL A |
| 482091.45 | 1349504.077 | A6-SA1-10 | **A6-SA1-10^2-PS** | **0.5-1** | TAL C, D |
| | | | **A6-SA1-10^3-PS** | **1-1.5** | TAL C, D |
| 482089.111 | 1349607.097 | A6-SA1-11 | A6-SA1-11^2-R | 0.5-1 | TAL A |
| | | | A6-SA1-11^3-R | 1-1.5 | TAL A |
| 482087.102 | 1349709.607 | A6-SA1-12 | A6-SA1-12^2-R | 0.5-1 | TAL A |
| | | | A6-SA1-12^3-R | 1-1.5 | TAL A |
| 482046.125 | 1349968.396 | A6-SA1-13 | **A6-SA1-13^4-R** | **1.5-2** | TAL A |
| | | | **A6-SA1-13^5-R** | **2-2.5** | TAL A |
| 482177.58 | 1349030.02 | A6-SA1-14 | A6-SA1-14^1-L | 0-0.5 | TAL F |
| 482175.97 | 1349091.03 | A6-SA1-15 | A6-SA1-15^1-L | 0-0.5 | TAL F |
| 482153.27 | 1349122.29 | A6-SA1-16 | A6-SA1-16^1-L | 0-0.5 | TAL F |
| 482131.34 | 1349091.03 | A6-SA1-17 | A6-SA1-17^1-L | 0-0.5 | TAL F |
| 482134.11 | 1349030.02 | A6-SA1-18 | A6-SA1-18^1-L | 0-0.5 | TAL F |
| 482029.403 | 1349030.969 | A6-SA1-19 | **A6-SA1-19^4-R** | **1.5-2** | TAL E |
| | | | **A6-SA1-19^5-R** | **2-2.5** | TAL E |
| 482232.382 | 1348781.988 | A6-SA1-20 | A6-SA1-20^1-R | 0-0.5 | TAL A |
| 482238.379 | 1348563.068 | A6-SA1-21 | **A6-SA1-21^5-R** | **2-2.5** | TAL A |
| 482257.872 | 1348764.677 | A6-SA1-22 | A6-SA1-22^4-R | 1.5-2 | TAL A |
| 482259.241 | 1348714.697 | A6-SA1-23 | A6-SA1-23^7-R | 3-3.5 | TAL A |
| 482261.81 | 1348620.738 | A6-SA1-24 | **A6-SA1-24^3-R** | **1-1.5** | TAL A |
| 482262.85 | 1348582.748 | A6-SA1-25 | A6-SA1-25^12-R | 5.5-6 | TAL A |
| 482127.148 | 1350371.903 | A6-SA1-26 | A6-SA1-26^1-R | 0-0.5 | TAL A |
| | | | A6-SA1-26^2-R | 0.5-1.0 | TAL A |
| | | | A6-SA1-26^3-R | 1.0-1.5 | TAL A |

ATTACHMENT 1
APPENDIX B

BORING TABLE AND SAMPLE IDENTIFIERS FOR PREDESIGN OF AREA 6 SUBAREA 1

| Northing | Easting | Boring | Sample Identification | Depth to Sample, feet | Analysis |
|---|---|---|---|---|---|
| 481940.42 | 1350470.966 | A6-SA1-27 | A6-SA1-27^?-R | ?-? (1st interval fill) | TAL A |
| | | | **A6-SA1-27^12-R** | **5.5-6** | TAL A |
| | | | **A6-SA1-27^13-R** | **6-6.5** | TAL A |
| | | | **A6-SA1-27^14-R** | **6.5-7** | TAL A |
| 481941.421 | 1350519.966 | A6-SA1-28 | A6-SA1-28^?-R | ?-? (1st interval fill) | TAL A |
| | | | **A6-SA1-28^12-R** | **5.5-6** | TAL A |
| | | | **A6-SA1-28^13-R** | **6-6.5** | TAL A |
| | | | **A6-SA1-28^14-R** | **6.5-7** | TAL A |
| 481899.419 | 1350446.967 | A6-SA1-29 | A6-SA1-29^?-R | ?-? (1st interval fill) | TAL A |
| | | | **A6-SA1-29^14-R** | **6.5-7** | TAL A |
| | | | **A6-SA1-29^15-R** | **7-7.5** | TAL A |
| | | | **A6-SA1-29^16-R** | **7.5-8** | TAL A |
| 481899.42 | 1350495.966 | A6-SA1-30 | A6-SA1-30^?-R | ?-? (1st interval fill) | TAL A |
| | | | **A6-SA1-30^15-R** | **7-7.5** | TAL A |
| | | | **A6-SA1-30^16-R** | **7.5-8** | TAL A |
| | | | **A6-SA1-30^17-R** | **8-8.5** | TAL A |
| 481942.418 | 1350278.967 | A6-SA1-31 | A6-SA1-31^?-R | ?-? (1st interval fill) | TAL A |
| | | | A6-SA1-31^9-R | 4-4.5 | TAL A |
| | | | A6-SA1-31^10-R | 4.5-5 | TAL A |
| | | | A6-SA1-31^11-R | 5-5.5 | TAL A |
| 481921.4 | 1349192.97 | A6-SA1-32 | **A6-SA1-32^8-R** | **3.5-4** | TAL A |
| | | | **A6-SA1-32^9-R** | **4-4.5** | TAL A |
| 482407.878 | 1349706.507 | A6-SA1-33 | A6-SA1-33^4-R | 1.5-2 | TAL A |
| | | | A6-SA1-33^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-33^6-R | 2.5-3 | TAL A |
| | | | A6-SA1-33^7-R | 3-3.5 | TAL A |

## ATTACHMENT 2

### TABLE 2-2
### PHYSICAL SAMPLE ANALYTICAL REQUIREMENTS

| Analyte [a] | Method | Matrix | Holding Time | Preservative | Container [b] | Minimum Mass |
|---|---|---|---|---|---|---|
| Rads (TAL A, B, E) | Gamma Spec, Alpha Spec, LSC, or GPC | Solid | 12 Months | None | Plastic core liner or glass or polyethylene sample container | **300 g** |
| PCB (TAL C) | GC | Solid | 14 days | Cool, 4°C | Glass with Teflon-lined lid | 120 g (360 g)[c] |
| SVOA (TAL D) | GC/MS | | | | | |
| VOA (TAL F) | GC/MS | Solid | 48 hours | Cool, 4°C | 3 x 1-Encore Sampler plus 1 X 2-oz jar for % moisture[c] | Each full Encore Sampler[c] will hold approx. 5 g |
| VOA (TAL F) | GC/MS | Liquid (Trip blank) | 14 days | Cool, 4°C $H_2SO_4$ pH<2 | 3 x 40-mL glass with Teflon-lined septa | 120 mL (no headspace) |

GC - gas chromatography
GPC – gas proportional counter
LSC – liquid scintillation counter
MS – mass spectroscopy
SVOA – semi-volatile organic analysis
VOA – volatile organic analysis

[a] Samples will be analyzed according to Analytical Support Level (ASL) B 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".

# VARIANCE / FIELD CHANGE NOTICE

Significant? (Yes or No): NO

V/F: 20600-PSP-0006-02

Page: 1 of 3

Date: 11/8/04 5849

'BS NO.: PROJECT/DOCUMENT/ECDC #20600-PSP-0006 REV 0

ROJECT TITLE: PSP for Predesign of Area 6 Subarea 1
upplement to 20300-PSP-0011)

## ARIANCE / FIELD CHANGE NOTICE (Include justification):

ove-WAC material was spilled in the area north of SP7 in Area 6, Subarea 1. The surface of the area where the spill occurred has been aped and is delineated with rope into three approximately 10 feet by 10 feet areas. This Variance/Field Change Notice (V/FCN) cuments the collection of grab soil samples from these three areas. The samples will be analyzed for Technetium-99. See Figure 1 for npling area location. Samples are to be collected in this area to confirm that the AWAC material has been removed. Coordinate with Construction Lead and/or WAO Representative for this sampling event.

e sample will be collected every 20 feet on the floor of the excavation. If the floor of the excavation is less than 40 feet in any ection, then a minimum of two samples at representative spacing will be collected in the direction that is less than 40 feet. Therefore, a al of twelve samples (4 within each area) will be collected for technetium-99 (TAL G). See Attachment 1.

e first sample ID shall be A6-SA1-34^1-R and each additional sample ID will be sequentially numbered (e.g. second sample ID is A6-1-35^1-R).

Where:
A6 = Area 6
SA1 = Subarea 1
34, 35, 36, etc. = Consecutive Sample Numbers (Locations)
R = radiological

veying required: Yes. Surveyors shall survey the sampling locations following sample collection.
ld QC samples required: No
ld data validation: Yes
alytical data validation: No
-site data package requirements (if applicable): ASL B

**stification:**
sical sampling is required to ensure all above-WAC technetium-99 contamination from the spill was removed when the area was aped following the spill.

QUESTED BY: Catherine Payne Date: 11/8/04

| D | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|---|---|---|---|---|---|
| | QUALITY ASSURANCE: R. Friske | 11-8-04 | X | PROJECT MANAGER: J.D. Close for J.D. | 11/9/04 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: F. Miller | 11/8/04 |
| | ANALYTICAL CUSTOMER SUPPORT: | 11-8-04 | | RTIMP Manager | |
| | WAO | 11-8-04 | X | Sampling Manager: T. Bubblage | 11/9/04 |

RIANCE/FCN APPROVED [X ]YES [ ]NO REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

| | | |
|---|---|---|
| CT MANAGER: | DOCUMENT CONTROL: Jeannie Rosser | OTHER: |
| ITY ASSURANCE: | CHARACTERIZATION MANAGER: Frank Miller | OTHER: |
| MANAGER: | OTHER: | OTHER: |

5849

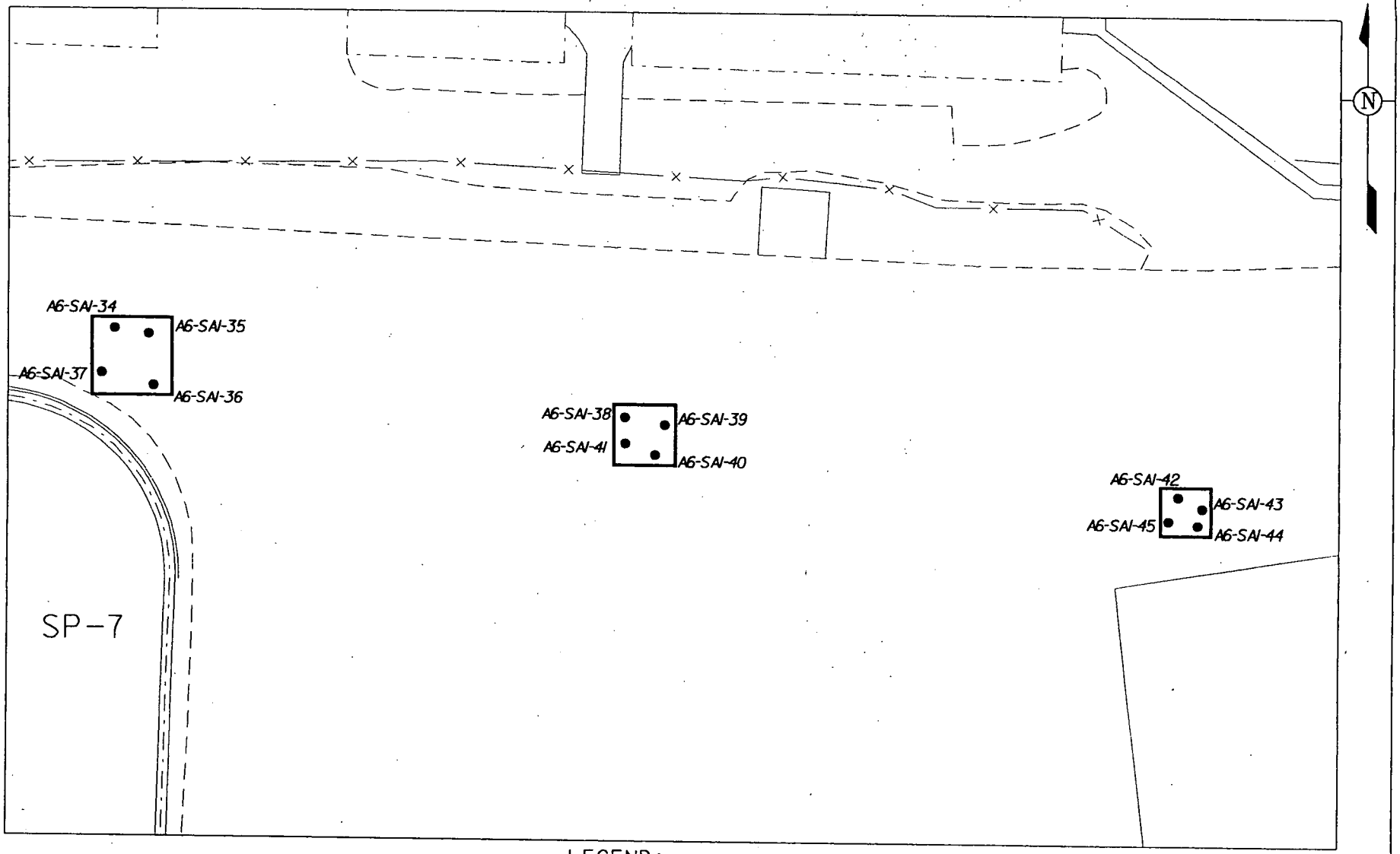
**TAL G**

| Component | MDL |
|---|---|
| Technetium-99 | 2.9 pCi/g |

**SAMPLING AND ANALYTICAL REQUIREMENTS**

| Analyte | Sample Matrix | Lab | TAT | Preservative | Holding Time | Container | Sample Volume/Mass |
|---|---|---|---|---|---|---|---|
| TAL G | Solid | Onsite | 9:00 am second day | None | 12 months | Appropriate Plastic or Glass | 50 g |

* This TAT signifies when the data is due back to the project. (Irrespective of data entry into the database.)
All subsequent batches are due in 1 day increments.




LEGEND:

• SAMPLE LOCATION

SCALE

40 20 0 40 FEET

DRAFT

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STATE PLANAR COORDINATE SYSTEM 1983

10-NOV-2004

FIGURE 1. ~~2066~~-PSP-0006-02

20600-

5849

| VARIANCE / FIELD CHANGE NOTICE | Significant? (Yes or No): NO | V/F: 20600-PSP-0006-03 |
|---|---|---|
| WBS NO.: PROJECT/DOCUMENT/ECDC #20600-PSP-0006 REV 0 | | Page: 1 of 3 |
| PROJECT TITLE: PSP for Predesign of Area 6 Subarea 1 (Supplement to 20300-PSP-0011) | | Date: 11/18/04 |

**VARIANCE / FIELD CHANGE NOTICE (Include justification):**

Above-WAC material was spilled in the area north of SP7 in Area 6, Subarea 1. The surface of the area where the spill occurred has been scraped and is delineated with rope into an approximately 7 feet by 2 feet area. This Variance/Field Change Notice (V/FCN) documents the collection of grab surface soil samples from this area. The samples will be analyzed for Technetium-99. See Figure 1 for sampling area location. Two samples are to be collected in this area to confirm that the AWAC material has been removed. Coordinate with the Construction Lead and/or WAO Representative for this sampling event.

The two samples to be collected within this area will be field located and evenly spaced at the sampling lead's discretion. These samples will be analyzed for technetium-99 (TAL G). See Attachment 1.

The first sample ID shall be A6-SA1-50^1-R and each additional sample ID will be sequentially numbered (e.g. second sample ID is A6-SA1-51^1-R).

Where:
A6 = Area 6
SA1 = Subarea 1
50, 51, etc. = Consecutive Sample Numbers (Locations)
R = radiological

Surveying required: Yes. Surveyors shall survey the sampling locations following sample collection.
Field QC samples required: No
Field data validation: Yes
Analytical data validation: No
Off-site data package requirements (if applicable): ASL B

**Justification:**
Physical sampling is required to ensure all above-WAC technetium-99 contamination from the spill was removed when the area was scraped following the spill.

REQUESTED BY: Catherine Payne Date: 11/18/04

| X IF REQD | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|---|---|---|---|---|---|
| X | QUALITY ASSURANCE: R. Friske Dana Wessel | 11-18-04 | X | PROJECT MANAGER: J.D. Chow for J.O. | 11/18/04 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: F. Miller | 11/18/04 |
| X | ANALYTICAL CUSTOMER SUPPORT: Amy Meyer | 11/18/04 | | RTIMP Manager | |
| X | WAO: Chris Dall | 11-18-04 | X | Sampling Manager: T. Buhrlage Tom Buhrlage | 11/18/04 |

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: |

5849

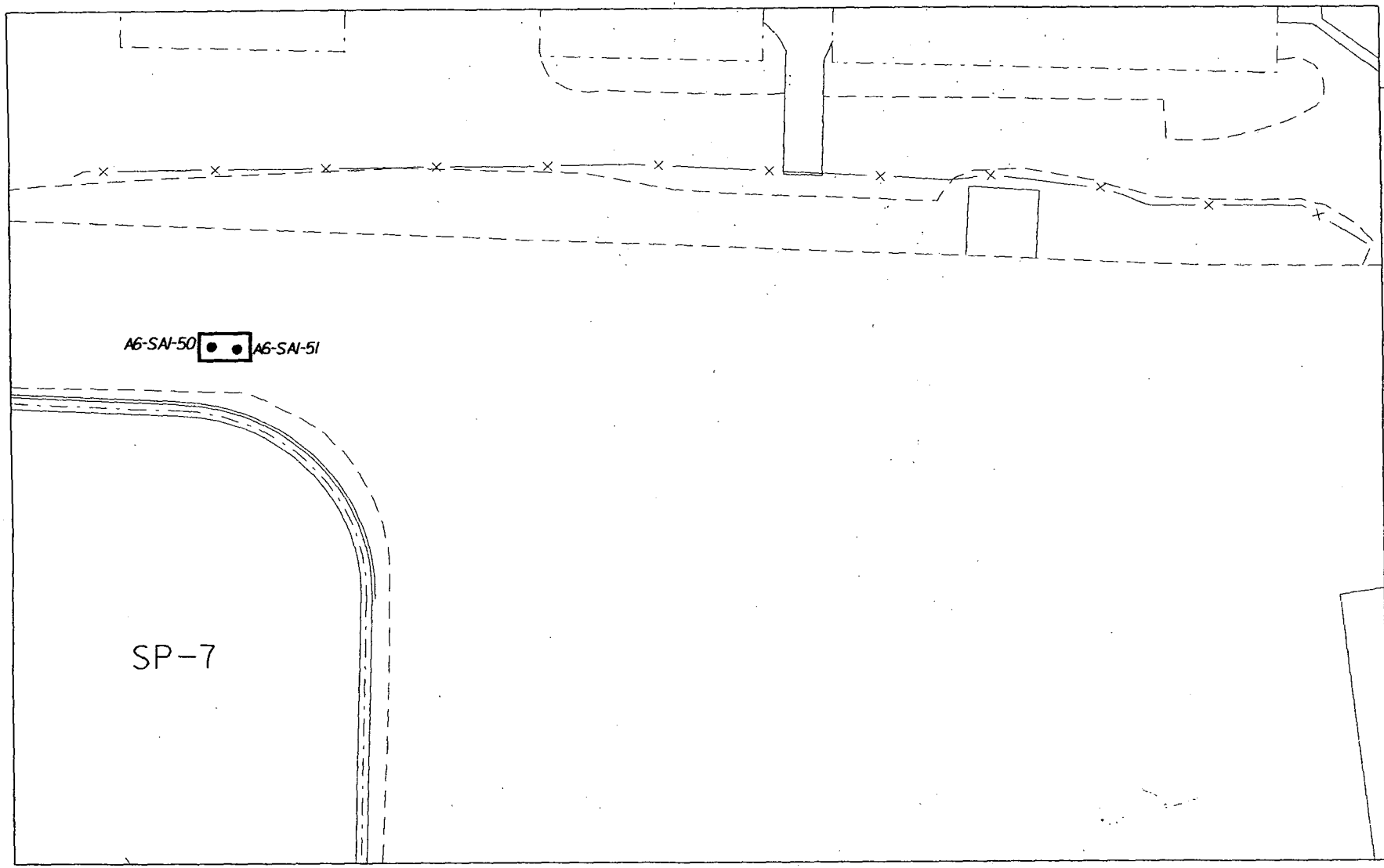
**TAL G**

| Component | MDL |
|---|---|
| Technetium-99 | 2.9 pCi/g |

**SAMPLING AND ANALYTICAL REQUIREMENTS**

| Analyte | Sample Matrix | Lab | TAT | Preservative | Holding Time | Container | Sample Volume/Mass |
|---|---|---|---|---|---|---|---|
| TAL G | Solid | Onsite | 9:00 am second day | None | 12 months | Appropriate Plastic or Glass | 50 g |

* This TAT signifies when the data is due back to the project. (Irrespective of data entry into the database.)
All subsequent batches are due in 1 day increments.




LEGEND:

• SAMPLE LOCATION

SCALE

40 20 0 40 FEET

DRAFT

v:\#2fm12\dgn\a6_sa1_var3.dgn
STATE PLANAR COORDINATE SYSTEM 1983

23-NOV-2004

FIGURE 1. 20600-PSP-0006-03

5849

| VARIANCE / FIELD CHANGE NOTICE | Significant? (Yes or No): NO | 5849 V/F: 20600-PSP-0006-04 |
|---|---|---|
| /BS NO.: PROJECT/DOCUMENT/ECDC #20600-PSP-0006 REV 0 | | Page: 1 of 3 |
| ROJECT TITLE: PSP for Predesign of Area 6 Subarea 1 (upplement to 20300-PSP-0011) | | Date: 11/23/04 |

**ARIANCE / FIELD CHANGE NOTICE (Include justification):**

ıis Variance/Field Change Notice (V/FCN) documents the collection of bounding samples for two identified AWAC locations. Above-'AC results for total uranium were detected at borings A6-SA1-4 and A6-SA1-5, located north of the OMTA Soil Staging Area.

6-SA1-4 has an above-WAC result of 1620 mg/kg in the 1 to 1.5-foot interval, 4670 mg/kg in the 2 to 2.5-foot interval, 2660 mg/kg in e 2.5 to 3-foot interval, 4100 mg/kg in the 3 to 3.5-foot interval, 5790 mg/kg in the 3.5 to 4-foot interval, and 2640 mg/kg in the 4 to 5-foot interval. This boring (A6-SA1-4) has below-WAC results of 61.8 mg/kg at the 1.5 to 2-foot interval, 187 mg/kg at the 4.5 to 5-ot interval, and 1.44 mg/kg at the 5 to 5.5-foot interval.

6-SA1-5 has an above-WAC result of 1130 mg/kg in the 1 to 1.5-foot interval and an above-FRL result of 297 mg/kg in the 1.5 to 2-foot :erval.

ıese locations will be grouped and bound as a single AWAC pocket.. Boring A6-SA1-4 will be bound to the northwest by Boring A6-ı1-46 and the southwest by A6-SA1-47. These two borings will be placed approximately 15 feet from boring A6-SA1-4. Boring A6-ı1-5 will be bound to the northeast by A6-SA1-48 and the southeast by A6-SA1-49. These two borings will be placed approximately 'e feet from boring A6-SA1-5. The boring at each of these four locations will be extended to 8 feet. A total of eight samples to be alyzed for total uranium (TAL A) will be collected from each boring, one from the upper half of every one-foot interval. See Figure 1 sampling area location. See Attachment 1.

ıordinate with the Construction Lead and/or WAO Representative for this sampling event.

.e sample IDs shall be A6-SA1-46^1-R, A6-SA1-47^1-R, A6-SA1-48^1-R, and A6-SA1-49^1-R.

Where:
A6 = Area 6
SA1 = Subarea 1
46, 47, etc. = Consecutive Sample Numbers (Locations)
1, 2, etc. = The number that indicates the depth interval of the sample from the soil surface
R = radionuclide analysis

rveying required: Yes. Surveyors shall survey the sampling locations prior to sample collection.
ld QC samples required: No
ld data validation: Yes
alytical data validation: No
f-site data package requirements (if applicable): ASL B

**stification:**

ysical sampling is required to bound above-WAC total uranium results at two borings in Area 6 Subarea 1.

QUESTED BY: Catherine Payne Date: 11/23/04

| ID | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|---|---|---|---|---|---|
| | QUALITY ASSURANCE: R. Friske Darren Wessel | 11-29-04 | X | PROJECT MANAGER: J.D. Chief for J.D. | 11/23/04 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: F. Miller | 11/23/04 |
| | ANALYTICAL CUSTOMER SUPPORT: Tracy Lodig | 11/23/04 | | RTIMP Manager | |
| | WAO: Chris Wall | 11-23-04 | X | Sampling Manager: T. Buhrlage Tom Hay for T.E.B | 11/23/04 |

RIANCE/FCN APPROVED [X ]YES [ ]NO REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

| | | |
|---|---|---|
| ECT MANAGER: | DOCUMENT CONTROL: Jeannie Rosser | OTHER: |
| LITY ASSURANCE: | CHARACTERIZATION MANAGER: Frank Miller | OTHER: |
| ) MANAGER: | OTHER: | OTHER: |

5849

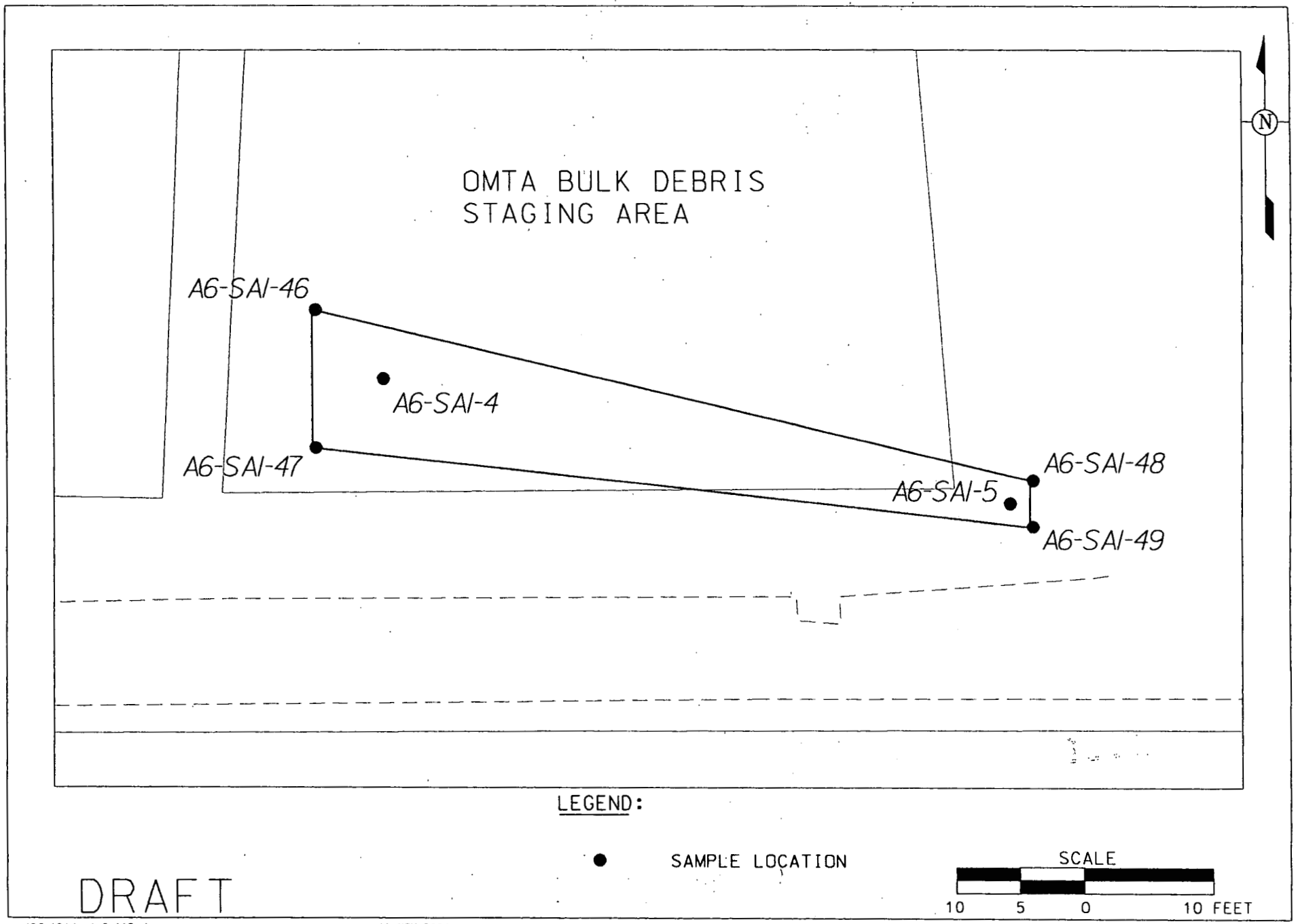
**TAL A, Soil Analysis, Off-site, ASL B**

| Component | WAC | FRL | MDL |
|---|---|---|---|
| Total Uranium | 1030 mg/kg | 82 mg/kg | 8.2 mg/kg |

**SAMPLING AND ANALYTICAL REQUIREMENTS**

| Analyte | Sample Method | Lab | TAT | Preservative | Holding Time | Container | Sample Volume/Mass |
|---|---|---|---|---|---|---|---|
| TAL A | Gamma Spec, Alpha Spec, LSC, GPC, or ICPMS | Onsite | 3 days | None | 12 months | Plastic core liner or glass or polyethylene sample container | 300 g |

* This TAT signifies when the data is due back to the project. (Irrespective of data entry into the database.)
All subsequent batches are due in 1 day increments.

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STATE PLANAR COORDINATE SYSTEM 1983

18-NOV-2004

FIGURE1. 20600-PSP-0006-03

58469

| VARIANCE / FIELD CHANGE NOTICE | Significant? (Yes or No): NO | V/F: 20600-PSP-0006-05 |
|---|---|---|
| BS NO.: PROJECT/DOCUMENT/ECDC #20600-PSP-0006 REV 0 | | Page: 1 of 3 5849 |
| ROJECT TITLE: PSP for Predesign of Area 6 Subarea 1 upplement to 20300-PSP-0011) | | Date: 12/21/04 |

**ARIANCE / FIELD CHANGE NOTICE (Include justification):**

is Variance/Field Change Notice (V/FCN) documents the collection of an additional bounding boring for an identified AWAC location 5-SA1-5. Above-WAC results for total uranium were detected at this boring, located north of the OMTA Soil Staging Area. A6-SA1-5 s an above-WAC result of 1130 mg/kg in the 1 to 1.5-foot interval and an above-FRL result of 297 mg/kg in the 1.5 to 2-foot interval.

rings A6-SA1-48 and A6-SA1-49 were placed to the north~~west~~ east and south~~west~~ east of A6-SA1-5 per Variance 20600-PSP-0006-04. When soil from A6-SA1-49 was frisked, greater than 450 ccpm were found from 3 to 5.5 feet. Most likely the samples from this boring, A6-1-49, will be above-WAC. Therefore, to expedite the bounding of the AWAC material in this area, another boring will be placed to southeast of A6-SA1-49.

5-SA1-52 will be placed approximated 21 feet southeast of A6-SA1-49. This boring will be extended to 7.5 feet. A total of eight nples to be analyzed for total uranium (TAL A) will be collected from this boring, one from the upper half of every one-foot interval. e Attachment 1 for the TAL and sampling/analytical requirements. See Figure 1 for the sampling area location.

ordinate with the Construction Lead and/or WAO Representative for this sampling event.

e sample IDs shall be A6-SA1-52^1-R, A6-SA1-52^3-R, etc.

Where:
A6 = Area 6
SA1 = Subarea 1
52, etc. = Consecutive Sample Numbers (Locations)
1, 2, etc. = The number that indicates the depth interval of the sample from the soil surface
R = radionuclide analysis

veying required: Yes. Surveyors shall survey the sampling locations prior to sample collection.
ld QC samples required: No
ld data validation: Yes
alytical data validation: No
-site data package requirements (if applicable): ASL B

**stification:**

sical sampling is required to expedite the bounding of the AWAC material in the area north of the OMTA Soil Staging Area in Area 6 area 1.

QUESTED BY: Catherine Payne Date: 12/21/04

| D | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|---|---|---|---|---|---|
| | QUALITY ASSURANCE: R. Friske Dan Wessel | 1-4-05 | X | PROJECT MANAGER: J.D. Chow for J.D. | 28 Dec 04 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: F. Miller | 12/22/04 |
| | ANALYTICAL CUSTOMER SUPPORT: | 12/28/04 | | RTDMP Manager | |
| | WAO Linda Barlow | 1/5/04 | X | Sampling Manager: T. Buhrlage | 12/22/04 |

RIANCE/FCN APPROVED [X ]YES [ ]NO REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

| | | |
|---|---|---|
| CT MANAGER: | DOCUMENT CONTROL: Jeannie Rosser | OTHER: |
| ITY ASSURANCE: | CHARACTERIZATION MANAGER: Frank Miller | OTHER: |
| MANAGER: | OTHER: | OTHER: |

5849

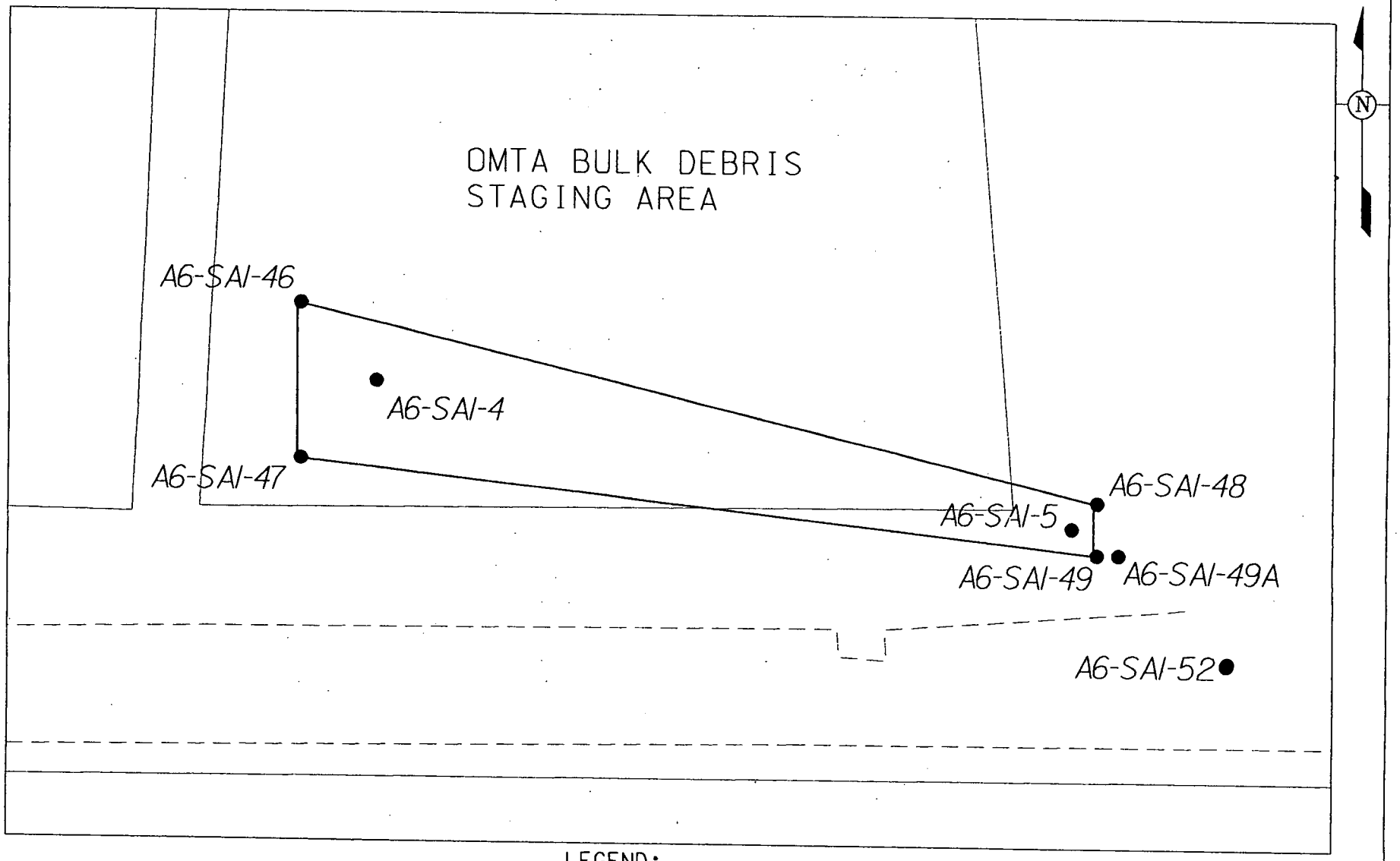
**TAL A, Soil Analysis, Off-site, ASL B**

| Component | WAC | FRL | MDL |
|---|---|---|---|
| Total Uranium | 1030 mg/kg | 82 mg/kg | 8.2 mg/kg |

**SAMPLING AND ANALYTICAL REQUIREMENTS**

| Analyte | Sample Method | Lab | TAT | Preservative | Holding Time | Container | Sample Volume/Mass |
|---|---|---|---|---|---|---|---|
| TAL A | Gamma Spec, Alpha Spec, LSC, GPC, or ICPMS | Onsite | 3 days | None | 12 months | Plastic core liner or glass or polyethylene sample container | 300 g |

* This TAT signifies when the data is due back to the project. (Irrespective of data entry into the database.)
All subsequent batches are due in 1 day increments.




LEGEND:

● SAMPLE LOCATION

SCALE

10 5 0 10 FEET

DRAFT

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STATE PLANAR COORDINATE SYSTEM 1983

16-DEC-2004

FIGURE1. 20600-PSP-0006-05

5849

# VARIANCE / FIELD CHANGE NOTICE

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

**V/F: 20600-PSP-0006-06**

**WBS NO.:** PROJECT/DOCUMENT/ECDC #20600-PSP-0006 REV 0



**PROJECT TITLE: PSP for Predesign of Area 6 Subarea 1 (Supplement to 20300-PSP-0011)**

**Date: 1/11/05**

**VARIANCE / FIELD CHANGE NOTICE (Include justification):**

This Variance/Field Change Notice (V/FCN) documents the collection of an additional bounding boring for an identified AWAC location A6-SA1-47. Above-WAC results for total uranium were detected at this boring, located north of the OMTA Soil Staging Area. A6-SA1-47 has an above-WAC result of 1085 mg/kg in the 0.5 to 1-foot interval and an above-FRL result of 176 mg/kg in the 1 to 1.5-foot interval.

To bound this AWAC material at boring A6-SA1-47, boring A6-SA1-53 will be placed approximately 5 feet southwest of A6-SA1-47. This boring will be extended to 1.5 feet. Two samples to be analyzed for total uranium (TAL A) will be collected from this boring, one from the 0-0.5-foot interval and one from the 1 to 1.5-foot interval. See Attachment 1 for the TAL and sampling/analytical requirements. See Figure 1 for the sampling area location.

Coordinate with the Construction Lead and/or WAO Representative for this sampling event.

The sample IDs shall be A6-SA1-53^1-R, A6-SA1-53^3-R, etc.

Where:
A6 = Area 6
SA1 = Subarea 1
53, etc. = Consecutive Sample Numbers (Locations)
1, 2, etc. = The number that indicates the depth interval of the sample from the soil surface
R = radionuclide analysis

Surveying required: Yes. Surveyors shall survey the sampling locations prior to sample collection.
Field QC samples required: No
Field data validation: Yes
Analytical data validation: No
Off-site data package requirements (if applicable): ASL B

**Justification:**

Physical sampling is required to expedite the bounding of the AWAC material in the area north of the OMTA Soil Staging Area in Area 6 Subarea 1.

REQUESTED BY: Catherine Payne Date: 1/11/05

| X IF REQD | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|---|---|---|---|---|---|
| X | QUALITY ASSURANCE: R. Priske Darren Wessel | 1-11-05 | X | PROJECT MANAGER: J. D'Agostino | 1/12/05 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: F. Miller | 1/11/05 |
| X | ANALYTICAL CUSTOMER SUPPORT: Heather Hedley | 1/11/05 | | RTIMP Manager | |
| X | WAO Linda Barton | 1/11/05 | X | Sampling Manager: T. Buhrlage | 1/11/05 |

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: |

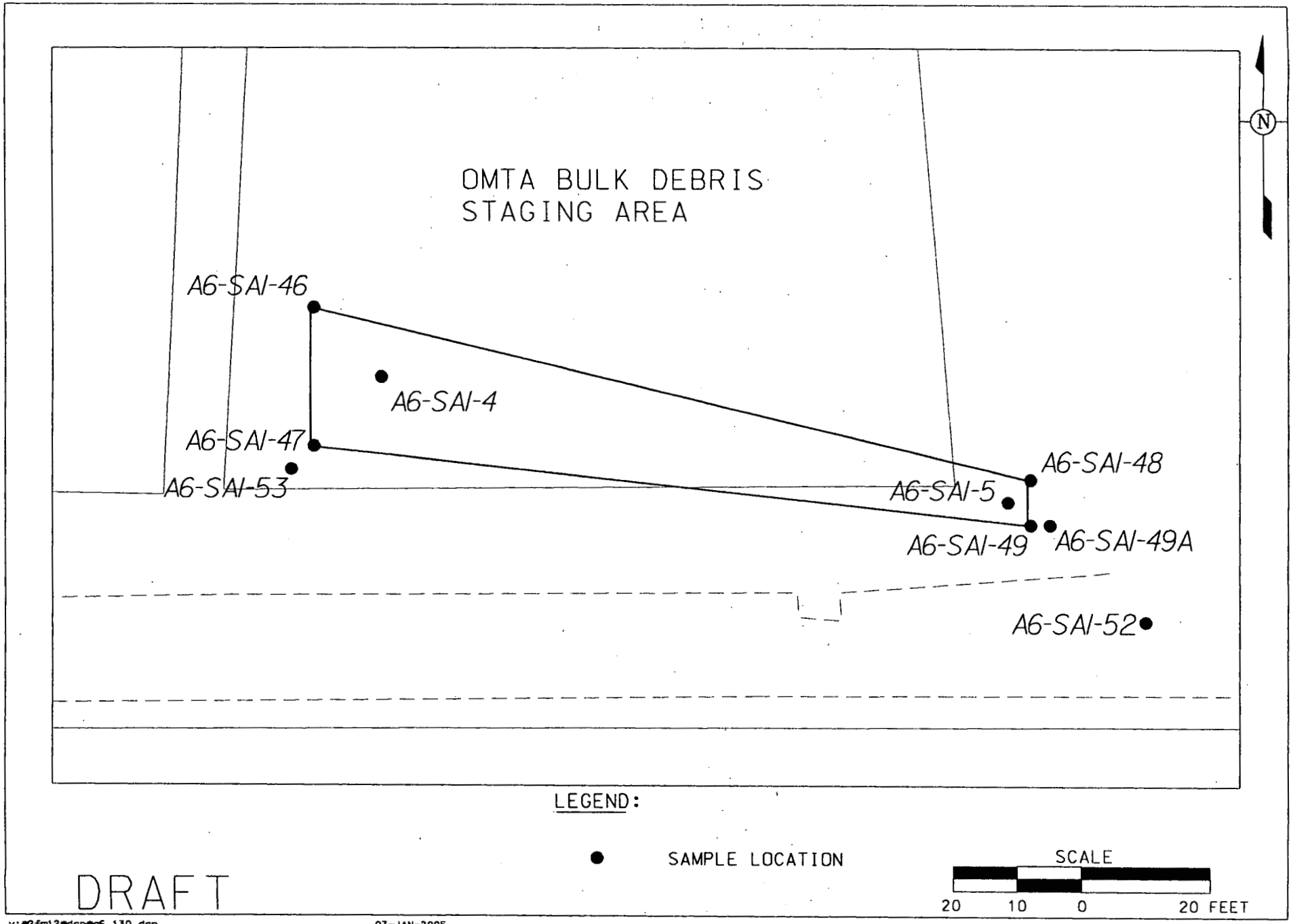
5849

**TAL A, Soil Analysis, Off-site, ASL B**

| Component | WAC | FRL | MDL |
|---|---|---|---|
| Total Uranium | 1030 mg/kg | 82 mg/kg | 8.2 mg/kg |

**SAMPLING AND ANALYTICAL REQUIREMENTS**

| Analyte | Sample Method | Lab | TAT | Preservative | Holding Time | Container | Sample Volume/Mass |
|---|---|---|---|---|---|---|---|
| TAL A | Gamma Spec, Alpha Spec, LSC, GPC, or ICPMS | Offsite | 3 days | None | 12 months | Plastic core liner or glass or polyethylene sample container | 300 g |

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STATE PLANAR COORDINATE SYSTEM 1983

07-JAN-2005

FIGURE1. 20600-PSP-0006-06

5849

5849

# VARIANCE / FIELD CHANGE NOTICE

Significant? (Yes or No): NO

V/F: 20600-PSP-0006-07

/BS NO.: PROJECT/DOCUMENT/ECDC #20600-PSP-0006 REV 0



ROJECT TITLE: PSP for Predesign of Area 6 Subarea 1
Supplement to 20300-PSP-0011)

Date: 2/14/05

**ARIANCE / FIELD CHANGE NOTICE (Include justification):**

his V/FCN documents updates the "Sample Identification" and "Depth to Sample, feet" columns in the Boring Table located in ppendix B. The interval depths were increased due to the presence of overburden material (e.g., gravel). This boring table was eviously updated per 20600-PSP-0006-01 and changes made as a result of this prior variance, Variance 1, are bolded. Changes as a sult of this variance, 20600-PSP-0006-07 are bolded and italicized in the Boring Table attached (Attachment 1).

**stification:**

is V/FCN documents changes needed as a result of updated "Sample Identification" and "Depth to Sample, feet" columns in the Boring ble located in Appendix B of the PSP.

EQUESTED BY: Catherine Payne Date: 2/14/05

| F QD | VARIANCE/FCN APPROVAL | DATE | X IF REQD | VARIANCE/FCN APPROVAL | DATE |
|---|---|---|---|---|---|
| | QUALITY ASSURANCE: R. Friske [signature] | 2-14-05 | X | PROJECT MANAGER: J.D. Chou [signature] | 2/14/05 |
| | DATA QUALITY MANAGEMENT | | X | CHARACTERIZATION MANAGER: F. Miller [signature] | 2/14/05 |
| | ANALYTICAL CUSTOMER SUPPORT: Sacha Stokes on N/A per L. Barton Amy Meyer | — | | RTIMP Manager | |
| | WAO | | X | Sampling Manager: T. Dubulage [signature] for TB | 2/14/05 |

ARIANCE/FCN APPROVED [X ]YES [ ]NO

REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

| | | |
|---|---|---|
| JECT MANAGER: | DOCUMENT CONTROL: Jeannie Rosser | OTHER: |
| LITY ASSURANCE: | CHARACTERIZATION MANAGER: Frank Miller | OTHER: |
| D MANAGER: | OTHER: | OTHER: |

ATTACHMENT 1
APPENDIX B

BORING TABLE AND SAMPLE IDENTIFIERS FOR PREDESIGN OF AREA 6 SUBAREA 1

| Northing | Easting | Boring | Sample Identification | Depth to Sample, feet | Analysis |
|---|---|---|---|---|---|
| 482100.48 | 1349519.687 | A6-SA1-1 | **A6-SA1-1^11-R** | **5-5.5** | TAL B |
| 482055.583 | 1349820.237 | A6-SA1-2 | **A6-SA1-2^22-R** | **10.5-11** | TAL B |
| 481988.075 | 1350008.847 | A6-SA1-3 | A6-SA1-3^13-R | 6-6.5 | TAL A |
| 482003.59 | 1350205.966 | A6-SA1-4 | A6-SA1-4^3-R | 1-1.5 | TAL A |
| 481984.418 | 1350303.966 | A6-SA1-5 | A6-SA1-5^3-R | 1-1.5 | TAL A |
| | | | ***A6-SA1-5^4-R*** | ***1.5-2*** | ***TAL A*** |
| 482153.917 | 1350047.465 | A6-SA1-6 | ***A6-SA1-6^4-R*** | ***1.5-2*** | TAL A |
| | | | ***A6-SA1-6^5-R*** | ***2-2.5*** | TAL A |
| | | | ***A6-SA1-6^10-R*** | ***4.5-5*** | TAL A |
| 482375.41 | 1349310.964 | A6-SA1-7 | ***A6-SA1-7^4-R*** | ***1.5-2*** | TAL A |
| | | | A6-SA1-7^9-R | 4-4.5 | TAL A |
| | | | A6-SA1-7^10-R | 4.5-5 | TAL A |
| | | | A6-SA1-7^11-R | 5-5.5 | TAL A |
| | | | A6-SA1-7^12-R | 5.5-6 | TAL A |
| 482241.606 | 1349086.567 | A6-SA1-8 | A6-SA1-8^1-R | 0-0.5 | TAL A |
| | | | A6-SA1-8^2-R | 0.5-1 | TAL A |
| | | | A6-SA1-8^7-R | 3-3.5 | TAL A |
| 482094.908 | 1349393.927 | A6-SA1-9 | ***A6-SA1-9^5-R*** | ***2-2.5*** | TAL A |
| | | | ***A6-SA1-9^6-R*** | ***2.5-3*** | TAL A |
| 482091.45 | 1349504.077 | A6-SA1-10 | **A6-SA1-10^3-PS** | **1-1.5** | TAL C, D |
| | | | ***A6-SA1-10^4-PS*** | ***1.5-2*** | TAL C, D |
| 482089.111 | 1349607.097 | A6-SA1-11 | A6-SA1-11^3-R | 1-1.5 | TAL A |
| | | | ***A6-SA1-11^4-R*** | ***1.5-2*** | TAL A |
| 482087.102 | 1349709.607 | A6-SA1-12 | A6-SA1-12^3-R | 1-1.5 | TAL A |
| | | | ***A6-SA1-12^4-R*** | ***1.5-2*** | TAL A |
| 482046.125 | 1349968.396 | A6-SA1-13 | **A6-SA1-13^4-R** | **1.5-2** | TAL A |
| | | | **A6-SA1-13^5-R** | **2-2.5** | TAL A |
| 482177.58 | 1349030.02 | A6-SA1-14 | A6-SA1-14^1-L | 0-0.5 | TAL F |
| 482175.97 | 1349091.03 | A6-SA1-15 | A6-SA1-15^1-L | 0-0.5 | TAL F |
| 482153.27 | 1349122.29 | A6-SA1-16 | A6-SA1-16^1-L | 0-0.5 | TAL F |
| 482131.34 | 1349091.03 | A6-SA1-17 | A6-SA1-17^1-L | 0-0.5 | TAL F |
| 482134.11 | 1349030.02 | A6-SA1-18 | A6-SA1-18^1-L | 0-0.5 | TAL F |
| 482029.403 | 1349030.969 | A6-SA1-19 | **A6-SA1-19^4-R** | **1.5-2** | TAL E |
| | | | **A6-SA1-19^5-R** | **2-2.5** | TAL E |
| 482232.382 | 1348781.988 | A6-SA1-20 | A6-SA1-20^1-R | 0-0.5 | TAL A |
| 482238.379 | 1348563.068 | A6-SA1-21 | **A6-SA1-21^5-R** | **2-2.5** | TAL A |
| 482257.872 | 1348764.677 | A6-SA1-22 | A6-SA1-22^4-R | 1.5-2 | TAL A |
| 482259.241 | 1348714.697 | A6-SA1-23 | A6-SA1-23^7-R | 3-3.5 | TAL A |
| 482261.81 | 1348620.738 | A6-SA1-24 | **A6-SA1-24^3-R** | **1-1.5** | TAL A |
| 482262.85 | 1348582.748 | A6-SA1-25 | ***A6-SA1-25^10-R*** | ***4.5-5*** | TAL A |
| 482127.148 | 1350371.903 | A6-SA1-26 | ***A6-SA1-26^4-R*** | ***1.5-2*** | TAL A |
| | | | ***A6-SA1-26^5-R*** | ***2-2.5*** | TAL A |
| | | | ***A6-SA1-26^6-R*** | ***2.5-3*** | TAL A |
| | | | | | |

ATTACHMENT 1
APPENDIX B

BORING TABLE AND SAMPLE IDENTIFIERS FOR PREDESIGN OF AREA 6 SUBAREA 1

| Northing | Easting | Boring | Sample Identification | Depth to Sample, feet | Analysis |
|---|---|---|---|---|---|
| 481940.42 | 1350470.966 | A6-SA1-27 | ***A6-SA1-27^9-R*** | ***4-4.5*** | TAL A |
| | | | **A6-SA1-27^13-R** | **6-6.5** | TAL A |
| | | | **A6-SA1-27^14-R** | **6.5-7** | TAL A |
| | | | ***A6-SA1-27^15-R*** | ***7-7.5*** | TAL A |
| 481941.421 | 1350519.966 | A6-SA1-28 | A6-SA1-28^?-R | ?-? (1st interval fill) | TAL A |
| | | | **A6-SA1-28^12-R** | **5.5-6** | TAL A |
| | | | **A6-SA1-28^13-R** | **6-6.5** | TAL A |
| | | | **A6-SA1-28^14-R** | **6.5-7** | TAL A |
| 481899.419 | 1350446.967 | A6-SA1-29 | A6-SA1-29^?-R | ?-? (1st interval fill) | TAL A |
| | | | **A6-SA1-29^14-R** | **6.5-7** | TAL A |
| | | | **A6-SA1-29^15-R** | **7-7.5** | TAL A |
| | | | **A6-SA1-29^16-R** | **7.5-8** | TAL A |
| 481899.42 | 1350495.966 | A6-SA1-30 | A6-SA1-30^?-R | ?-? (1st interval fill) | TAL A |
| | | | **A6-SA1-30^15-R** | **7-7.5** | TAL A |
| | | | **A6-SA1-30^16-R** | **7.5-8** | TAL A |
| | | | **A6-SA1-30^17-R** | **8-8.5** | TAL A |
| 481942.418 | 1350278.967 | A6-SA1-31 | ***A6-SA1-31^5-R*** | ***2-2.5*** | TAL A |
| | | | A6-SA1-31^9-R | 4-4.5 | TAL A |
| | | | A6-SA1-31^10-R | 4.5-5 | TAL A |
| | | | A6-SA1-31^11-R | 5-5.5 | TAL A |
| 481921.4 | 1349192.97 | A6-SA1-32 | ***A6-SA1-32^5-R*** | ***2-2.5*** | TAL A |
| | | | ***A6-SA1-32^6-R*** | ***2.5-3*** | TAL A |
| 482407.878 | 1349706.507 | A6-SA1-33 | A6-SA1-33^4-R | 1.5-2 | TAL A |
| | | | A6-SA1-33^5-R | 2-2.5 | TAL A |
| | | | A6-SA1-33^6-R | 2.5-3 | TAL A |
| | | | A6-SA1-33^7-R | 3-3.5 | TAL A |